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# Army East Greenland Expedition 1968

## EXPEDITION REPORT

by

LT. C.H. AGNEW OF LOCHNAW YR. ROYAL HIGHLAND FUSILIERS

AND OTHERS

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## INTRODUCTION

### General

1. In 1966, Lt. C.H. Agnew of Lochnaw yr., RHF was a member of a Royal Naval Expedition, which visited the Schweizerland Area of East Greenland in latitude 66° 45'N, 37°W.
2. Plans for an Army Expedition to East Greenland in 1968 were based on the experience gained in 1966.

### Expedition Area

3. After careful study it was decided, that the expedition would explore in the area of the KRISTIANS Glacier (66° 45'N, 36°W), which lies 40 miles inland on the East Coast of Greenland. This is 100 miles north of KULUSUK air strip.
4. In addition an attempt would be made to pioneer a route to Mt. Forel (11200 ft) from the KRISTIANS Glacier and to climb it by a new route.

### Sponsors

5. Plans for an expedition were submitted to the Directorate of Army Training, through H.Q. Scotland (Army) and to the Army Mountaineering Association in May 1967. These were approved, and authority given for the expedition in October 1967.
6. Application was made to the Royal Geographical Society in January, 1968 for their sponsorship and this was given in April, 1968.
7. The Lowland Brigade Depot (now Scottish Infantry Depot (Glencorse)) acted as sponsor unit for the expedition.
8. Major R.J. Rutherford, R.S. S.O.P.T. H.Q. Scotland (Army) acted as Staff Liaison Officer for the expedition.

EXPEDITION MEMBERS

Expedition Leader: Lieutenant C.H. AGNEW of Lochnaw yr. Royal Highland Fusiliers

Deputy Leader: Surgeon Lt. P.N. DILLY, Ph.D., M.B., Royal Naval Reserve.

Quartermaster: Major J.W.A. FLEMING, Parachute Regt.

Members: Captain T.E.F. TAYLOR, Royal Green Jackets  
Captain D. BEATON, Royal Army Chaplain's Department  
(att. Black Watch)  
Lieutenant B.K. PORTER, B.Sc., Royal Artillery  
Sergeant P.B. COLE, Royal Army Medical Corps  
Gunner B.A. JAMES, Royal Artillery.

Reserve: Private D. EVANS, Army Catering Corps.

DIARY OF EVENTS

6-8 June	Advance Party in Flight to Greenland.
8-10 June	Advance Party in Kulusuk.
10-23 June	Advance Party moving to Kristians Glacier.
25-26 June	Main Body in Flight to Greenland.
27 June	First attempt to Supply Drop.
29 June	Supplies dropped to Advance Party.
29 June - 10 July	Main Body en route to Kristians Glacier. Advance Party climbing and reccing area. 4 peaks climbed 2 July - Beaton broke ankle and returned to Coast. 9 July - Lochnaw yr. broke ankle.
11-17 July	Operating from base camp, supply depoting etc. 1 peak climbed.
18-28 July	Camp moved to Col de Woppers. 4 peaks climbed.
29-31 July	Rest in Base Camp.
1-16 August	Attempt on Mt. Forel abandoned. Camp placed above Col de Woppers. 12 peaks climbed.
17-18 August	Pack up Base Camp.
19-27 August	Move to Coast. Ejnar Mikkelsens Fjaeld boarded 27 August.
27 August - 7 Sept.	Kulusuk.
7-8 Sept.	In Flight to U.K.



## EXPEDITION DIARY

5 June

The Advance Party consisting of Lochnaw yr., Taylor and James gathered at the Route Hotel, R.A.F. Lyneham for dinner. The night was spent here.

6 June

The Advance Party flew from R.A.F. Fairford at 0900 hrs. to Stonoway, where the Andover developed engine trouble. As a result the party spent the night in the Crown Hotel.

7 June

By 1500 hrs. the necessary repairs had been carried out and the Advance party flew on to U.S.N.A.F. Base, Kevlavik in Iceland, where the second night was spent.

8 June

The Advance Party left Kevlavik at 0800 hrs. and flew to Greenland where an hour was spent over flying the Kristians Glacier and the route in. This proved of considerable value, particularly in negotiating the Conniats Icefall.

The party landed at Kulusuk air strip at 1030 hrs. Z or 0730 hrs. local and were most surprised to be offered breakfast, particularly as an early lunch has been eaten in the aircraft. After the aircraft's departure, the afternoon was spent in packing equipment, fixing the sledges harnesses and doing a little ski and sledge hauling practice in a nearby snowfield. During the course of this James speared his calf with the point of his ski stick. The evening was passed with the residents at DYE 4 the America Early Warming Station, which is sited on the island.

9 June

Sunday was spent doing the final preparation before departure. The day was overcast with rain and a falling barometer all of which did not bode well.

10 June

All the Advance Party equipment was moved from the airstrip to Kap Dan village and put aboard the Hospital Boat "Signe Vest", which lay  $\frac{1}{2}$  mile out on the ice. Once the party was all aboard, the boat left at 10.30 a.m. for Angmagsalik, the capital town of East Greenland. The passage through the sea-ice was quite difficult, but at last we arrived just after lunch.

Immediate enquiries indicated that none of the larger boats would be leaving for Kungmuit until Thursday 13 June and that the ice was too heavy for the lighter fishing boats. The Party had one or two fake offers and had resigned themselves to staying in Angmagsalik when the Manager of the Royal Greenland Trade Company (K.G.H.) announced that he had found a boat which was willing to try the passage.

The party sailed at 1630 hrs. in great spirits, but after an hour it was evident that the sea ice was too well packed. However the Greenlander was not dismayed, and with much assistance, of pulling and poling ice, made way to the shore about two miles down the coast from Angmagsalik.

Sign language indicated that he intended to lie up here, until the tide began to fall, when the ice should run out to sea and open up the leads. The whole party, apart from James, slept well. He however decided to bivouac on the dry land and presented a tasty morsel to a Husky, which annoyed him all night.



11 June

By 0730 hrs. the ice had cleared a little and so the Greenlander set sail again. It was raining, quite hard and this continued all day. Four hours were spent trying to break out into the sea, but at last by 0530 the party was en route. 1030 hrs. - Kungmuit, where the Advance Party was breakfasted by the Japanese Trans-Ice Cap expedition.

At 1530 hrs. the Advance Party was left on the sea ice half way up the Tasissarssik fiord. The Greenlander indicated that the sea ice was safe, but after moving one load three miles up to a suitable camp site, Taylor, who had experience of ski-ing on ice in Norway suggested it would be safer on land. The return journey for speed was made down the ice, where the sledge was found 10 yards from the sea, 40 yards of ice having melted or broken away in four hours.

A second load was moved up to the camp site where the party, very wet, settled in for a late night.

12 June

The day was fine and after a late breakfast the final load of equipment was collected and moved up to the camp. This was in situ by 1630 hrs.

It now became obvious that the loads would have to be reduced to a maximum of two per person and so the evening was spent weeding out the "luxuries."

13 June

This was a long day during which all the expedition stores were moved up to the snout of the glacier and camp made  $\frac{1}{2}$  mile from it. The two loads were very heavy and the going difficult, along the shore as there was a large quantity of deep soft snow blocking the route.

14 June

The first load was taken up to ice cap leaving camp at 0700 hrs. The final steep step was very tiring and quite difficult as the glacier was overlayed by snow. The return trip was made in the afternoon with the Nansen sledge. This proved very troublesome as it was hauled up a steep snow couloir.

By 1700 hrs. it was snowing hard, making all the rock very slippery and unpleasant. Having finally collected all the stores on the level glacier, the party moved back to the tent. James slipped on a rock and wrenched his ankle. This gave considerable trouble during the night.

15 June

In view of the fact that James' ankle was very inflamed and possibly broken, it was decided to evacuate him to hospital. Lochnaw yr. set off down to the coast and located a boat, which was willing to take James to Kungmuit, while Taylor nursed James down to the coast. James was safely embarked by 1530 hrs.

Lochnaw yr. and Taylor now returned to the camp on the glacier, where they arrived just after 2000 hrs.

16 June

Lochnaw yr. and Taylor left camp just after 1130 hrs. on ski, pulling a sledge with about 350 lbs. of equipment and food. The going was uphill and very tiring. The sledge made no head-way on the downhill section of the route, because of soft snow. Camp was pitched at 1800 hrs. having covered about 7 miles.



17 June

Camp was struck at 0330 hrs., just after sunrise and the party was away by 0530 hrs., progress was very slow because the surface was too hard to ski, but too soft to walk on. By 0830 hrs., the surface and slope made it too difficult to carry and sledge haul so the load had to be split.

However, by 1130 hrs. all the equipment was concentrated at the foot of the Col de Pullies, where it was decided to wait until dark before taking the col, so Lochnaw yr. and Taylor rested.

The col was in shadow by 1530 hrs. and the first load was taken up after this - the carry taking about 1 hour. The return journey was made for the sledge and this was man hauled up. After reaching the top, supper was cooked and eaten.

By now the snow was hard enough to walk on and so Lochnaw yr. and Taylor sledge hauled on foot. After crossing to Windlatta a brew of tea was made just after midnight.

18 June

From here ski were worn for the descent to the September 16th glacier. This was crossed in the early hours of the morning and camp made just after 0300 hrs. on the far side of the glacier. This showed that the ideal time to travel was at night between the hours of 2000 hrs. and 0600 hrs. A system which was adopted for the rest of the journey.

Nights  
18-19 June

The Advance Party slept all day, moving off just after 2000 hrs. This was a mistake as the surface did not harden sufficiently for walking until 2300 hrs. However progress was made on ski to the Col des Eskimo. This was taken on foot in two loads, with the angle quite steep. However, all the equipment was concentrated at the summit by 0130 hrs.

From here the surface was good even though the pull up to the Conniats Col was very hard graft. Camp was pitched on the col just after 0600 hrs.

19-20 June

Camp was struck just after 2200 hrs. and the descent of the icefall began. This proved easier than expected as most of the crevases were well bridged. However route finding towards the end was something of a problem.

Once at the foot of the glacier rapid progress was made downhill to the Glacier de France. The last two miles were slow as the Glacier was nearly dry ice and the crevases well hidden but badly bridged. Eventually the corner was turned and camp set up on the moraine at 0615 hrs. just on the Glacier de France.

20-21 June

The Glacier de France appeared to be dry ice and so it was decided to leave just after dark and pull up the dry ice. However this proved to be a mistake as it soon became obvious that there was a snow covering. This was very crusty and Taylor stepped into water filled crevases more often than was welcome.

At 2130 hrs. the Advance Party pitched tent and had dinner, with a view to letting the snow freeze hard enough to walk on. Progress was resumed just after 2315 hrs. and continued until 0630 hrs. when camp was put up just on the Femsjernen.



The Advance Party had experienced difficulties on the Glacier where the Pourquoi Pas enters. Here the area was crevassed and a number of melt water streams were evident. Both Lochnaw yr. and Taylor fell into these; Taylor up to his neck. This experience did not add to the humour of the morning.

#### 21-22 June

The Advance Party struck camp at just after 2245 hrs. in a very strong katabatic wind, blowing off the ice-cap. This continued all night and added to the miseries of travel in the cold.

The trip on to the Femsjernen was uneventful until they reached the central area, where melt water streams were again a problem. The party kept to the centre until the dividing moraine of the Paris and Kristians glacier was reached. This was followed with difficulty as the area was a mass of crevasses and pressure ridges on dry ice. A little later a slight snow covering added to the problems as it concealed the crevasses. Lochnaw yr. decided to fall into a crevasse in this area, the first which the advance had had the misfortune to brush with. However he extracted himself without too much difficulty.

By 0400 hrs. the party were clear of the main difficulties and pulling fast on a very good surface. About six miles were covered in the next two hours before camp was pitched on the Kristians Glacier just East of Quervains Bjoerg. The Advance Party were very relieved to be here with sufficient time to recce for a DZ and good camp site.

#### 22-23 June

A strong wind down the Kristians Glacier rather put paid to a good day's sleep. Camp was struck at 2300 hrs. and progress made up the Glacier. The peaks appeared magnificent and many routes up "obvious lines of weakness" were planned. However the fatigue of the last few days and the relief at arriving was beginning to tell. Progress was getting slower and slower with rests every fifteen minutes.

By 0230 hrs. a possible camp sight on rock was spied by binoculars and the party headed for this. It was eventually reached at 0400 hrs. and proved to be an excellent camp site on rock, with running water 50 yards behind and above all a possible DZ, 200 yards out from the rock buttress. As it transpired the R.A.F. were able to drop here although to them it was a very taxing DZ.

A camping platform was built, breakfast eaten and all the stores moved up to the tent, which was perched 200 ft. above the glacier, with a magnificent view across the Kristian Glacier. The day was spent in fitfull sleep until 1930 hrs. when it was decided to have tea with a cup of soup later before retiring finally to bed just before midnight.

#### 24 June

The Advance Party did not sleep well during the night. However, the days were spent in rest, improving the camp site, and sorting out the mess of equipment on the sledge. Various necessary repairs were effected and some equipment cleaned.

#### Main Party

The main party held a Press Conference at the Alpine Club and then RV'd with 2 Para. in Aldershot.



25 June

Advance Party

The Advance Party climbed 'IT' a peak situated half a mile behind the camp site. They left for the peak at 0600 hrs. reaching the foot of the East Col fifteen minutes later. The steep snow, in excellent condition was climbed to the ridge. This was followed on appalling rock to a steep Gendarme.

This proved the only difficulty on the climb. Three attempts were made before a route was found on to the ridge above. The final ridge was long and mainly snow, which proved very enjoyable. The summit at 7470 ft. was reached at 0915 hrs. where a cairn was built to mark this first, first ascent of the expedition.

The ridge was followed down and a return made to the tent, which was reached at 1330 hrs. The afternoon was spent in rest and worry as bad weather seemed to be approaching.

Main Party

The main party flew from R.A.F. Abingdon to Kevlavik in Iceland without incident.

26 June

Advance Party

It snowed all day and the cloud seldom lifted off the glacier. The airdrop had been due in the morning, but was obviously not possible. The Advance Party were on half rations with three days reserve.

Main Party

The main party flew into Kulusuk at 0730 hrs. local. As the airdrop would not be possible the day was spent preparing the aircraft. In the evening the party visited DYE 4 and were very well entertained.

27 June

Advance Party

The 27th dawned fine and the airdrop was expected at any moment. However, by 1000 a.m. it was well clouded in and all hope was abandoned. However at 1430 hrs. Taylor heard an aircraft which Lochnaw yr. spotted and recognised as a "DC 4."

This proved to be the Andover, which re-appeared searching the north side of the glacier. Both flares were lit and the aircraft eventually spotted the camp and began a series of runs over the tent. This process continued for an hour until the aircraft flew off again.

Main Party

The party loaded the aircraft and came to give the Advance Party the airdrop. They had some difficulty in finding the glacier in the low cloud, but when they did, found that their tail door would not open and hence they were unable to do the drop.

28 June

Advance Party

The day dawned with bad weather and this worsened. An hour's work was done on a community tent place after which they went to



bed. Living on half rations was not pleasant and with only one day's food left some plans were made for a return dash to the coast.

#### Main Party

The Andover damaged a propeller on take off and had to return to Kevlavik for repairs. The party packed their equipment and negotiated for a boat, to take them to the Knud Rasmussen Glacier the next day.

29 June

#### Advance Party

By now the Advance Party was desperate, particularly as it was a fine day and still no aircraft. The day was spent in bed.

At 1800 hrs. Taylor's sharp ears picked up an aircraft and this was soon overhead. After a few practice runs the Andover came in for the drop. Time after time it circled and time after time each package came out for a perfect landing within 50 ft. of the DZ marker. It was a wonderful sight to see the aircraft below the tent level, dropping and then climbing over the tent on full power. The drop was complete by 1900 hrs. with nothing lost in crevasses and as a final sortie the plane came over low for an exchange of courtesies. Food was collected and a large meal eaten.

#### Main Party

The main party took boat from Kulusuk to the Knud Rasmussen Glacier and arrived at 1900 hrs. on the snout, where they pitched camp.

30 June

#### Advance Party

The party worked during the morning ferrying kit up to the camp site. Taylor was carrying loads of up to 120 lbs. at a time with the result that by 1400 hrs. when work stopped because of soft snow, all the food was concentrated at the camp.

Taylor carried up a 60 ft. chute which was used to build the cover for the communal tent.

#### Main Party

The main party route found though the first part of the Knud Rasmussen glacier and established camp beyond the difficulties. They had gained about 700 ft. and 4 miles, which left the party very tired.

1 July

#### Advance Party

After an early start, the morning was spent in lifting some more of the stores up to the depot. About 600 lbs. of stores were carried up in 5 hours and packed into a provisional dump. Work was stopped at 1200 hrs. as the surface had become too soft.

In the afternoon the radio equipment was checked and the 50 ft. coaxil cable found missing. The antenna masts were raised, with the Scottish Division and Union Flags at the mast heads.

### Main Party

During the day the party gained 1000 ft. in six miles. The glacier was heavily crevassed and made travelling difficult. One sledge slipped into a crevasse, but fortunately jammed, without pulling in the team. The party camped on the 1700 ft. contour half way up the glacier.

2 July

### Advance Party

During the morning the last of the stores were lifted off the glacier, leaving only the parachute drop rubbish.

During the afternoon the advance party carried out necessary personal administration including a much needed wash.

### Main Party

This was a long day and half a night trying to establish camp on the moraine where the Navy '66 expedition camped. The melt water streams and pools provided many interesting and wet moments, making travelling very unpleasant. It was during the afternoon that Beaton fell and broke his ankle, but managed to hobble into camp. During the evening the party found the going better and determined to travel by night.

3 July

### Advance Party

After the three days of back packing and camp administration, the Advance Party rested.

### Main Party

Rested all day in the hope that Beaton's ankle might improve but he had to return to the coast. Cole volunteered to accompany him. He made a start that evening but soon admitted his inability to follow.

4 July

### Advance Party

On the 4th the Advance Party carried out the first of its reconnaissances of the area. The route up the Col de Woppers, as a possible way to Mt. Farel was opened up.

The Advance Party departed at 0315 hrs. across the Kristians Glacier and then up the Col. This proved far longer than had been anticipated because the distance was much foreshortened. The early part of the route wended its way through a few crevasses and then over an area of well filled but wide crevasses. This was followed by a crevasse free area until the last  $\frac{1}{4}$  mile at the summit of the col. This area was cut by crevasses extending the one mile from one side of the col to the other and opening to 40-50 yards wide. However, a feasible route was found to the ice cap above which was reached at 0745 hrs., when a second breakfast was eaten.

From here with Taylor leading, The Pimple, a peak on the east side of the Col was climbed. This was climbed by the east ridge to the summit and provided one or two very pleasant pitches on snow/ice and rock. The summit was reached at 1045 hrs. from where a detailed binocular recce of the surrounding area and the route to Mt. Forel was made.



The descent was made to the ski and then down the col returning to camp by 1715 hrs. As an access route to the ice-cap and its nearby mountains the Col de Woppers had proved very feasible.

#### Main Party (Ni 3/4 July)

Left the Navy dump at 2130 hrs. and pulled off with Beaton making an attempt to follow, but soon gave up. The surface was appalling and it took sometime to cross the Glacier to the foot of the Col des Eskimo, where Fleming suffered a mild dose of heat stroke, so camp was pitched.

5 July

#### Advance Party

Following on from 4 July, the Advance Party rested till late in the morning. While Taylor organised the Radio set in preparation for Monday's schedule and erected the antenna, Lochnaw yr. began to sort out the various piles of stores.

The first hand set radio schedule was kept with the main party. There was no reply. In fact, despite attempts each evening they were not contacted, until in sight, on the evening of 10 July.

#### Main Party (Ni 4/5 July)

The first part of the evening was spent taking the sledges up the Col des Eskimo on a pulley system. After this a fast pace was achieved to the long pull up to the Conniats Cols where camp was placed at the Advance Party first marker flags.

6 July

#### Advance Party

The Advance Party, having had a day's rest, made their next reconnaissance east up the Kristians Glacier. They travelled over the col until they could see to the east and then climbed the Wart.

The journey across the glacier was rapid and they covered the distance to the Wart in  $1\frac{1}{2}$  hrs. arriving at 0530 hrs. The Wart climbed from the south onto the west ridge and provided some of the best rock climbing to date. Once on the ridge there were three pitches of II/III in some very fine situations, until the summit snow ridge was reached.

From the summit a good view of the south facing bastions on the North side of the Kristians glacier, the southern peaks, and the group to the east were visible and tentative ideas for exploration of these areas was formulated. Return to base camp was effected by 1200 hrs.

#### Main Party

The party left camp at 0500 hrs. and had a very interesting descent of the Conniats Ice Fall. James found skiing down a great difficulty and was very slow. One of the climbing ropes fell down a crevasse and could not be recovered as part of it jammed in the ice.

With worsening snow conditions the party camped at the foot of the icefall just after 1345 hrs.



7 July

Advance Party

After yesterday's climb and as it was Sunday, the time was spent in rest. During the afternoon the radio was set up in preparation for Monday's schedule. It appeared to be working as at 1600 hrs. the 2200 hrs. Z BBC (Europe) News was received.

Main Party (Ni 6/7 July)

Camp was struck at 2300 hrs. and fast travel took the party to the Glacier de France. Here Porter's ankle gave trouble and was strapped up after which the party pulled on for two miles up the Glacier de France, camping early in the morning.

8 July

Advance Party

After a few miscalculations on time zones, it was realised that the radio net should open from 1000-1400 hrs. local time, which really suited rather well.

The schedule produced no result and it was apparent that it would be difficult to establish communications with U.K. Just after 1300 hrs. indistinct morse was heard on our frequency and despite repeated efforts it was not possible to establish communications.

Main Party (Ni 7/8 July)

This night proved both difficult and unpleasant with many melt water streams and a crevassed area at the junction with the Pourquoi Pas Glacier. The party eventually reached and camped on the edge of the Femsjernen.

9 July

Advance Party

After two days' rest and in view of the fact that the others had not arrived, it was decided to go down the Kristians Glacier and climb the peak later called "the Bitch."

The Advance Party left camp at 0315 hrs., skiing down the glacier. The going was fast and it was possible to pole most of the way. The foot of the mountain was reached at 0500 hrs. when a rest was taken. The intention was to climb the peak by the westerly of two south facing ridges. It looked quite difficult, particularly in the middle section, but Taylor considered that it should be feasible.

The first 1000 ft. was on loose, but safe rock on which it was feasible to move together. The next 2000 ft. was the hardest section of the climb on very good rock, with most of the pitches graded IV or V. Here the rock was a delight to climb and provided many wonderful situations and views. Unfortunately, on one pitch the rope dislodged a large stone which on missing Lochnaw yr's. head hit his foot (and as was subsequently confirmed) broke a toe.

It was ever the intention to have lunch on the summit, but this never seemed to come despite repeated assurances from Taylor. The last 1000 feet were on reasonable rock in the II sup to III grades and lead on to what appeared to be the summit.



This was reached with great relief but the "Bitch" had another 300 ft. to go. The summit was reached at 1700 hrs. where an hour was spent for lunch, rest and a search for the others on the Femsjernen.

The descent was by the East ridge until the East of the South ridges was met, this was followed down on easy, but very rotten rock. The descent took six hours to the glacier, where Lochnaw yr. slipped on the ice and cracked a bone in his ankle.

The ski back to camp took  $2\frac{1}{2}$  hrs., where the Advance Party had breakfast and went to bed.

#### Main Party

The route followed through the east side of the Femsjernen and up into the Glacier de Champs Elysees. During the morning a runner was broken on the sledge which might have caused difficulties. With probably only a day to go morale in the party was high.

10 July

#### Advance Party

The days were spent in bed with occasional emergence for breakfast etc. Finally at 1815 hrs., when getting up for supper, the main party was seen four miles out in the Kristian Glacier. Radio communications were established and the party eventually arrived just after 2000 hrs.

#### Main Party

The main party left camp at 0500 hrs. on the last leg of their journey. The wet glacier made the going hard until they reached the junction with the Kristian Glacier. Porter succeeded on ski to fall into a crevasse and it took about an hour to extract him.

At 1000 hrs. the first sight of base camp came into view, but it was not until 1800 hrs. that radio contact was established and 2000 hrs. before the party eventually reached camp. A happy reunion was followed by some much needed sleep.

11 July

A rest day, during which the main party carried out personal administration. In the afternoon a stores tent was built from some paniers and a parachute.

12 July

Again a day of rest and administration.

13 July

Lochnaw yr. made a breakfast at 0200 hrs. for the remainder, who left thereafter for the Col de Woppers with a load of rations each. These were to be depot on the plateau for the Forel attempt and thereafter the party was to climb the Rinohorn.

The journey up the Col took 5 hrs. bringing them through the main crevasses about mid-day. All the bridges on the final crevasse had collapsed with the exception of one which remained on the west side of the Col. Dilly therefore decided to erect a tyrolean pulley across this while he and Taylor went over the bridge.

This was set up and all the rations carried across, after which James said he wishes to cross also. Needless to say the system collapsed and he was left with a 10 ft. prussic out of the crevasse.



All this took time, with the result that there was not sufficient time to climb. A further reconnaissance was made to the west after which the party returned to camp, arriving just after 2000 hrs.

#### 14 July

The morning was spent in discussion of the problem raised by Beaton and Cole who were on the coast. Cole was to come in with the London University Graduate Mountaineering Club to the Glacier de France. After much discussion and in view of the fact that LUGMCs date of arrival was not known it was decided (a) to try to contact U.K. or Angmagalik to instruct Cole to return home or (b) to wait until General Lang overflew on the 25 July and to ask him to arrange a R.V. and date either to the party in Kulusak or by dropping a message to them.

During the afternoon it started to rain and this continued into the evening.

#### 15 July

The radio schedule was again kept, but with no contact with the U.K. In addition the schedule arranged by Dilly with Angmagalik was kept and although they were heard strength 5 it proved impossible to establish communication.

This failure of communication left the party in a considerable dilemma as we did not know what Cole would be doing on the coast, nor what date he might arrive in. In addition Lochnaw yr.'s immobility did not make planning easier. However after much discussion Lochnaw yr. decided that:

- a. On 16 July, 4 would climb while Taylor tried to contact Angmagalik again.
- b. 17-24 July. Lochnaw yr. and one would remain in base while four climbed from the Col de Woppers.
- c. On 25 July General Lang would be asked to arrange a R.V. with Cole at the Glacier de France.

In the evening the first of the long bridge sessions was started and this continued until 0030 hrs. Bridge was to become the main time passer in the bad weather, with Dilly as the expedition coach.

#### 16 July

Dilly, Fleming, Porter and James set off at 0800 hrs. to climb the Toadstool, a peak to the east of "It" and just behind camp. They split into two parties with Dilly and Fleming climbing the ice face and then on to the north ridge, while Porter and James took the ridge direct.

Dilly and Fleming had very pleasant climbing on the snow-ice and up on to the ridge. This was at a relatively easy angle but was very rotten rock. The summit was reached at 1300 hrs. from where they were able to shout to the campsite.

Porter and James found the first buttress very difficult and the rock extremely loose. They had a difficult five hours on this with one or two rather dangerous moments, before they decided to withdraw. Two abseils from loose points and some climbing brought them back on to the glacier. Here they waited for Dilly and Fleming before returning to camp.



In camp Lochnaw yr. and Taylor had spent the morning trying to contact Angmagsalik but were unable to establish communications.

During the evening lots were drawn as to who should chaperone Lochnaw yr. James unfortunately drew the lowest card. After this another session of bridge was started.

17 July

The day was spent in preparation for the evenings move up the Col de Woppers. The party eventually left at 2030 hrs. across the Glacier. The going on ski and later foot was very tiring as no firm crust had formed to walk on. They eventually established camp, just after midnight on the level plateau below the final crevasse belt. This became known as "Bridge" camp.

18 July

The climbing party spent the morning in bed before setting off the climb three summits. Taylor and Porter made the first ascent of Plod Major. The route lay up the north facing glacier to the foot of the N.E. ridge which was climbed to the summit. Dilly and Fleming followed up with the ascent of Plod's Minor and Minimus, which provided some very good climbing. The climb across the Bergshrund and up the short ice pitch provided some difficult ice climbing.

The base party of Lochnaw yr. and James remained resting all day. During the afternoon the wind increased in strength.

19 July

The wind increased during the night and by morning it was snowing as well. The blizzard continued through the day and did not abate until late in the evening. The storm destroyed the communal tent and kept the climbing party tent bound all day.

20 July

The morning dawned dry but cloudy this lifted during the morning. After breakfast Lochnaw yr. and James repaired some of the storm damage and rebuilt the main tent.

Of the climbing party only Taylor and Fleming had ventured out because the new snow had made conditions rather difficult. Taylor and Fleming climbed the subsidiary summit, Pic Dunhill, on Mt. Durbar. The route was a very pleasant climb up from the Col between Plod Major on good rock with one pitch of IV sup which Taylor led. As the peaks were in cloud and the time was late they decided to abandon their attempt to complete the climb to Mt. Durbar.

21 July

With good weather the climbing party made a number of ascents while the base group recuperated.

Dilly and Fleming climbed first the Marquee and then the Rhinohorn. They had skied up the Col between the Pimple and Rhinohorn and then followed along for an hour to the Marquee, there they climbed up and on to the N.E. ridge, which is mainly snow and ice. The climbing was not difficult but very exhilarating on good snow and ice to the summit. The descent was by the same route.

On the return journey Dilly decided to make an attempt on the Rhinohorn. The east face and ridge of this provided excellent climbing on snow and rock with a pitch of IV sup. The east ridge was followed to the summit which was reached in mid-afternoon. The descent was by the same route and then on ski back to camp. In a small tumble Fleming broke a ski.



While Fleming and Dilly were away Porter and Taylor made an attempt to climb the Pharoah, by the S.E. ridge. The climbing was very difficult with several pitches of V sup. The first 800 ft. of the climb took them 5 hours before giving way to easier rock. A third of the way up and just after 1700 hrs. they decided to withdraw, reaching Bridge Camp by 2000 hrs. As Taylor had to be back for the next days radio schedule, they continued down after a meal and reached base camp at 2315 hrs.

22 July

During the morning it snowed hard and made conditions for the radio schedule difficult. Again there was no reply from U.K. and Angmagsalik was equally difficult to raise. They were coming over full strength but seemed unable to hear us.

The afternoon cleared a little, so Porter and James decided to leave at 2000 for the Bridge Camp. They intended to climb a peak en route.

23 July

Both parties eventually got away at 1010 hrs. with James and Porter going up to Bridge Camp. Here they found Fleming and Dilly ready to move the camp up the Col. They assisted with this and established "Solo" Camp in the final crevasse belt.

Taylor and Lochnaw yr. climbed "Consolation" a peak of the central massif five miles east of base camp. The route was up the north face to the west ridge which was followed to the summit. The climbing was easy, on rotten rock, and provided a pleasant days outing. The party returned to camp just after 1800 hrs.

24 July

Another blizzard blew up during the evening and continued all day. Both parties were tent bound.

25 July

The wind dropped during the night, but low cloud, mist and snow continued all day. As a result the hoped for overflight of General Lang did not come.

26 July

The bad weather continued all day with snow and whiteout condition which kept both parties tent bound for the day.

27 July

This was the first clear day in three. Dilly and Fleming returned from Solo Camp so that Taylor and Fleming could leave in the evening for the coast to collect Cole. They arrived back about mid-day. The afternoon was spent in preparations for the coastal dash.

Porter and James remained at Solo Camp and set off to try to climb what later was called Artillery Peak. However once they had climbed to the plateau low cloud rolled in from the ice cap and they had to return to Solo Camp.

That evening with a fast falling barometer and snow by 2000 hrs., Lochnaw yr. decided to abandon the attempt to collect Cole. It was felt that by the time the weather cleared and an attempt was made he would have given up all hope of being collected.

28 July

The blizzard which came in during the night continued all day with milder winds. In the late afternoon there was a brief clearing so Porter and James returned to Base Camp. Shortly after they left the weather closed in again and they had to cross the Kristian Glacier in white out conditions arriving at base, after  $3\frac{1}{2}$  hrs. wading on ski in deep snow, at 2100 hrs.



29 July

The weather improved steadily all day. The Monday schedule was kept with the U.K. and the expedition call sign was frequently heard, but still it was impossible to establish Communication. Angmagssalik appeared to have ceased listening out for the expedition.

30 July

During this period of the expedition the very unsettled weather caused considerable annoyance and it became imperative to use each good day. The 20th started well but it soon became obvious that another depression was coming.

However Lochnaw yr. decided to attempt to reach Solo Camp during the night and preparations were made accordingly. The party left at 2000 hrs. with a very overcast sky and a blizzard very much in the offing. The weather was sea sawing so it appeared that an attempted would perhaps succeed. However at the foot of the Col the weather turned for the worse and the attempted was abandoned.

31 July

The morning was spent in bed with a low cloud covering and rain which continued well into the evening.

1 August

As all the necessary packing had been done for the 30th July, all that remained was to pass the day before setting off for the Col de Woppers in the evening.

The party set off from camp at 2030 hrs. and crossed the Kristians Glacier to where the sledge had been depoted on the 30 July. From here travel was very good on a hard crust although the odd hidden crevasse presented problems. James had the narrowest escape when he fell into one up to his shoulder, but Taylor pulled him out on his trace.

Solo Camp was reached at 0230 hrs., where Taylor and James remained to erect camp. While this was being done the remainder pulled the sledge with non essential equipment through the crevasses and up onto the plateau above. This was left with the first food dump, after which all returned to camp arriving by 0400 hrs.

2 August

Snow started at 0600 hrs. and this together with the requirement to sleep kept the party in bed all day and night.

3 August

As it was a perfect day, the party intended to move on during the night. In preparation for this Lochnaw yr., Fleming, Taylor and Porter carried the remainder of the stores up to the Depot. From here they were lifted forward to the final crevasses and established at the summit of the Col. The sledge from the Depot was also brought up to the top. From here on a good surface, a clear run towards Mt. Forel would be possible. The party returned to Sole Camp.

Camp was finally struck at 2230 hrs. and the sledge party pulled away. It took two hours in the soft snow to get to the first Depot and a further 45 mins. to pull up to the first sledge.



The first 100 yards proved the going to be impossible in deep powder snow and so it was decided to pitch camp at an altitude of 8300 ft. It was intended to climb from here for a few days until the snow had settled and then to leave for Mt. Forel, which was the second aim of the expedition.

It took an hour to dig the tent into the hillside but by 0230 hrs. all were in bed.

#### 4 August

It snowed again between 0300 and 0700 hrs. but by 0930 hrs. the day was clear. By 1130 hrs. two parties were on the move.

First Dilly, Fleming and Porter who skied off to the North and West sides of the Pharoah to see if they could find a possible route up this, the most beautiful and highest peak near the camp. They returned by 1400 hrs. having spied a possible route up the mountain.

Secondly Lochnaw yr., Taylor and James who set off with the intention of climbing the "Mole". This lay four miles from camp and was climbed from the west mainly on ski. It was possible to ski to within 200 ft. of the summit, where ski had to be left to cross the bergshrund. From here ice led to the summit ridge of soft powder snow. James led the final pitch to claim his first peak in Greenland. A very cold wind was blowing and this very nearly caused frostbite in two cases. The return ski to camp was great fun with one long downhill stretch.

Late in the afternoon the problems of the trip to Forel were discussed with the various alternatives. Eventually it was decided that this would have to be a two man effort with a small support party laying a halfway Depot.

#### 5 August

The weather was again back to the old tricks with low cloud which later turned to snow. In order to make the best of the day Lochnaw yr., Dilly and Fleming moved the support Depot for the Forel trip forward to the Avantgarden Glacier and placed it there in whiteout conditions.

Taylor and James meanwhile were keeping the U.K. schedule again with no result, although indistinct morse was heard on the frequency. A bridge session in the evening lasted until 2300 hrs.

#### 6 August

The weather was still unsettled but it was decided to make an attempt on various peaks. At 1100 hrs. Lochnaw yr. and James set off to climb Artillery Peak, by the north ridge. This was gained after a long pull up the Corrie and onto the saddle, where the ridge was then climbed. It was deep powder snow on ice and squealed horribly, with the result that it was decided to withdraw rather than risk an avalanche.

Taylor and Fleming with Dilly and Porter had meantime left camp at 1200 hrs. to climb Gog & Magog and Dome & Thumb. Both of these were twin summits on ridges standing at about 9,800 ft. and rising 1000 ft. from the glacier. Both gave interesting pitches, including two good rock pitches of Grade IV on the Thumb. These summits had very good views out and onto the ice cap.

#### 7 August

Heavy falls of snow during the day gave 1 ft. of new powder snow on the 2 ft. already in existence. This precluded all climbing so bridge was continued until 1900 hrs. when an early night was had by all.



## 8 August

Despite the excellent weather it was impossible to climb with the fresh falls of snow on the ground.

Although frustrated at having to wait, the frequent avalanches on the neighbouring peaks, testified to the wisdom of a further day's rest.

## 9 August

An early start for both parties in a morning of wonderful sunshine. At over 8000 ft. it was noticeable how much colder it was and how little warming properties the sun now had. Both parties had considerable trouble with the new snow sticking to the waxed ski. This was most frustrating although conditions improved later in the day.

Dilly, Fleming, Porter and James left at 1000 hrs. to make a second attempt on Artillery Peak by the East Ridge. This was a longish, but steep snow ridge rising from the glacier to the summit. The party found it was powder snow on ice and had to crampon all the way. The climbing was very good with a number of technically difficult pitches of steep ice on either side of the ridge. The summit was reached at 1315 hrs. and found to be a rock platform. As it was windless they were able to sunbath and so spent a full hour enjoying the scenery, photographing and flag waving. The descent was by the same route and they were in camp by 1730 hrs. after a very good days climbing.

Lochnaw yr. and Taylor had meanwhile skied east for six miles to climb Assaye, Inkerman and Waterloo, which lie in the group of nunataks to the N.E. of the camp. These peaks rose 1500 ft. from the glacier and provided some excellent ice climbing. The base of Assaye was reached at 1230 hrs. where ski were left. The route followed the south ridge of Assaye, up easy snow to the summit, from here to the descent to the Col before Inkerman was up some steep snow on ice. Inkerman proved an easy climb up snow and then along easy rock to the summit. Lunch was taken here before returning to the ski which were reached at 1530 hrs.

The party skied over to Waterloo which lay a mile from Assaye and climbed it by the west ridge. This was up steep ice and a very tricky bergschund over two rock pitches, which were followed by 500 ft. of steep 65° ice which led to the summit. On the descent Taylor lost a crampon, which fortunately lodged on the rock. The party skied back to camp arriving at 2030 hrs. very tired.

## 10 August

James celebrated, if that is the correct word, his birthday.

A heavy snow fall at 0800 hrs. followed by a brooding sky put paid to all plans for the day. However by lunch the weather had cleared sufficiently to make some afternoon activity worthwhile. It was therefore decided to collect in all the ration Depots on the Col and bring them to the camp. One was half-a-mile away, the other at Solo Camp. They were in situation for the return journey from Forel, but as this was to be a two man effort only the one forward Depot would be required.

Lochnaw yr. and Porter returned to Solo Camp and found the ice scenery somewhat changed in the area although all the necessary bridges still seemed adequately secure. The remainder collected in the higher food Depot. All food was now at the Top Camp with the exception of the Forel Depot and this gave the party sufficient food (assuming no attempt was made on Forel) up to mid-day 16 August.



11 August

Despite the cold wind and fleeting cloud two parties set off climbing at just after 1000 hrs. Lochnaw yr. and Taylor moved off to climb Patron's Ridge which runs west from the Pharoah. It consists of five summits all over 9500 ft. issuing from the ridge at about 8000 ft.

It was a long ski behind the Pharoah and then down to a dip below the first summit. A long ascent followed up to the Col between Pt Tiso and Snow Bump. Tiso was then climbed by the West ridge up steep narrow ice to some final rock pitches which lead to the summit. While lunch was taken a detailed view of the Pharoah was possible, so Taylor planned what seemed a feasible route up the West face.

From here the descent was by the same route to the ski and then up and over the Snow Bump. This was the first and only ski mountain on the expedition. There was a steep descent then climb up to the saddle between the two Tryfans which were climbed, both up reasonable rock and snow to their summits. A final descent to the last summit gave a wonderful view across to Pt 3090.

Taylor and Lochnaw yr. then returned to camp along the same route. The steep glacier from the last summit gave a few problems on ski, but both were then back in camp by 1915 hrs., where they found no sign of the others.

The remaining party had left to climb Mt. Churchill at the same time. Their route had lead round to the North East face of the mountain and then up the steep snow to the east ridge. Dilly lead this with Porter leading the second rope. The first section presented no problems until the final 500 ft. tower, which steepened dramatically with pitches climbing steadily to Grade VI. The strong cold wind added to the considerable problems and very regrettably the party had to withdraw 20 ft. from the summit block, at the start of an overhanging corner.

A few abseils brought them onto the ridge, where they ate lunch at 2000 hrs. before descending to the ski and returning to camp which they reached in time for a late dinner.

12 August

All the expedition had hoped for a bad day so that rest would be possible, but "unfortunately" it dawned fine. Two parties set off at 1000 hrs. to climb.

Dilly, Taylor and Porter went to climb the Pharoah from its west ice face. This magnificent peak had for long been a great attraction to the expedition, particularly after Taylor and Porter's valiant attempt. The party skied rapidly round to the west face and up the steep glacier to the bergshund. This they crossed at mid-day and then began to climb on the steep ice. Moving together they climbed rapidly up the ever steepening ice until Dilly decided that a little safety was called for. The final 600 ft. were climbed singly until the summit was reached. This was a steep snow point, where after a little flag waving they withdrew to a sheltered part of the ridge. The descent was by the S.W. ridge to the 'schrund and then on ski back to camp.

Lochnaw yr. and Fleming left James to rest, while they set off to climb Mt. Durbar. This entailed a descent to Bridge Camp through the crevasses, where Fleming fell and ran his ski over his wrist, cutting it. After first aid the party continued until they reached the Col below Pic Dunhill. This was climbed again and the summit reached in  $1\frac{3}{4}$  hours. The north face of the peak was descended on thin snow lying on rock to the gap before



the Durbar ridge. The long snow ridge was in excellent condition and lead upwards along narrow edges and steep sides to the summit of Mt. Durbar. From here a magnificent view opened up all round including the Fermsjernen, which gave some idea of what was in store for the journey out. The descent was by the same route and camp reached at 2130 hrs. where the Pharoah party had supper waiting.

13 August

After two long days climbing, the expedition rested despite the good weather. The opportunity was taken to clean stoves and pots, which were getting rather dirty. As the powder snow was not melting off the peaks it was decided that it would be unsafe to attempt Mt. Forel. The trip was therefore regretfully abandoned.

14 August

At 0900 hrs. Lochnaw yr. and Porter set off to climb Pt 2700. It took 3 hours to ski to the peak on a very fast surface with one long downhill stretch. The peak was climbed from the north on the west ridge. This was 50° Snow and ice to the summit ridge which was knife edged and uncorniced. The route was great fun and an hour's sunbathing on the summit rocks was very welcome. On the return the rations from the Forel Depot were collected as the trip had been abandoned and rations at camp were in short supply.

The remaining four left at midday to climb Pegasus by the North ridge. This proved far easier than anticipated and the summit reached after 55 minutes of fast climbing with Fleming leading.

15 August

The plans for the day were that Lochnaw yr. and James should climb the Pyramid while the rest made an attempt on Mt. Churchill again. After the first two had left the others felt uninclined to climb and rested for the day instead. Taylor and Fleming however, skied out towards pt 3090 to recce it.

Lochnaw yr. and James skied to the Pyramid in 2 hours and climbed it by the south ridge on very pleasant rock, which presented problems of II/III in places before giving way to the summit scramble. The summit was twin rock peaks connected by an ice ridge which was crossed to the higher peak. Lunch was followed by a rapid descent to the ski and the journey back to camp which was reached at 1600 hrs.

Here after representation that all had had enough climbing and wished to return to camp, Lochnaw yr decided to pack up and return the next day.

16 August

The return to base camp was made. The final packing was complete by 1100 hrs. and the party set off down the Col. Taylor and Dilly towed the sledge down to Bridge Camp, while the rest followed slowly. At Bridge Camp Dilly and Porter went on to botanise on the rock faces while the rest pulled the sledge back and up to Base Camp.

On arrival the afternoon was spent in rest and shifting stores from the glacier to the camp. Dilly and Porter returned with a number of specimens at just after 1500 hrs.

17 August

The day was devoted entirely to rest and personal administration for the journey out. During the afternoon a start was made on the expedition stores.



18 August

As the expedition was leaving for the coast the next day all the equipment had to be sorted out and packed. Lochnaw yr. and Fleming packed the stores for return while Dilly and Taylor packed up all the spare food, which was to be depoted on the Camp Site.

Necessary repairs were made to the sledges, two of which were in a very poor state of repair and eventually late in the evening these were packed up for the morning. Each sledge load weighed about 360 lbs. and each person was carrying 50 lbs. of personal equipment.

19 August

The first day journey started well, with breakfast at 0600 hrs. and the pull off at 0800 hrs. with a fairly fast trip through the crevasses. At 1015 hrs. Lochnaw yr. and Fleming were crossing a wide crevasse on a bridge, when the sledge, side-slipped into the crevasse. It took  $\frac{1}{2}$  hour to extract, in the process the sledge was damaged.

Two of the sledges deteriorated rapidly during the afternoon and required frequent halts for repair. The surface was very bad for sledging and made progress difficult. By 1900 hrs. one sledge had completely collapsed and another was about to go, so it was decided to camp just on the Champs Elysees Glacier and dump the inessentials.

These were sorted, but darkness intervened and the party retired to bed.

20 August

A new plan was devised in which Dilly, Porter, James and Taylor took the essential stores on the good sledge to the coast while Lochnaw yr. and Fleming tried to salvage as much as possible and bring it on slowly.

Lochnaw yr. and Fleming back packed some stores for the others to the corner of Femsjernen, where they loaded the sledge fully and pulled on to the other Glacier de France camping on the pressure ridge below Pt 2006.

Lochnaw yr. and Fleming returned to camp and weeded out the kit before loading it onto the broken sledge and pulling it forward for three miles when darkness forced them to camp on the corner of the Glacier de France.

21 August

The Coast Party had a narrow escape, when their sledge ran out of control down the pressure ridge. They fell 300 ft. down the steep ice, but emerged unharmed at the bottom. The sledge was however slightly damaged. From here they made good progress and camped just beyond the junction of the Pourquoi Pas Glacier.

The rear party first had to back pack some stores through the difficult ground before returning for the sledge. This, fully packed with a ski stretcher loaded with ski in tow weighed about 500 lbs. and progress, on anything but the best surface, was very slow requiring rests every 10 minutes. Eventually after following the coast parties tracks they camped above the pressure ridge just before 1730 hrs. The sledge was not standing up to the battering and appeared to be about to break up.



22 August

The coast party made rapid progress for four miles until their sledge finally broke up on the ice, sixteen miles from the coast. Taylor and James pitched camp here and then assisted Dilly and Porter to carry forward the stores for four miles to make a Depot beyond the Conniats Glacier junction. They returned to camp where the sledge had broken while Dilly and Porter took forward the final load with their tent.

Lochnaw yr. and Fleming took the morning to lower the sledge down the pressure ridge and then pulled on down the glacier making about three miles in four hours, they camped on the glacier at 1800 hrs.

23 August

Dilly and Porter moved the first load from their Depot to the beginning of the coastal break up and camped  $2\frac{1}{2}$  miles from the sea.

Taylor and James returned up the glacier to meet the rear party and assist them to bring the load to the coast. The two groups met for lunch in the area of the melt water stream which was proving very difficult as they were both wide and deep. However with four pulling progress was faster until the junction with the Pourquoi Pas Glacier, where the Glacier de France was heavily crevassed. It took 2 hours to pull through this area before camp was pitched at 1800 hrs.

The weather broke during the night and it rained with sleet for a few hours.

24 August

The coastal Party began to route find through the seracs to the coast. The ground was heavily crevassed and it was difficult to find a possible route for back packing. During the morning Dilly sat down heavily and broke a finger, fortunately not badly. However by nightfall they had progressed 1 mile through the maze.

The rear party moved fast and by evening had come up to the Depot, which still contained two man loads of equipment and so the sledge was abandoned and camp pitched. The party were very tired from accumulative fatigue and the long days. Rests between pulls had been getting longer and the pulls shorter.

25 August

Dilly and Porter route found through the last  $1\frac{1}{2}$  miles and pitched camp on the small rock platform at the glacier snout.

The rear party brought a heavy load each down the glacier making one or two route finding mistakes until eventually they found a cairn at the beginning of the coastal break up. The party returned to the Depot in thick mist and rain moving fast to keep warm and to beat nightfall, which was closing in rapidly. They eventually made camp at 1830 hrs. after a little search in the mist.

26 August

The final loads from the camp were brought down to the cairn, leaving two loads at the upper Depot. At the Cairn all the parties were reunited. However it was rather worrying that the boat was expected the next day and still the bulk of the equipment was inland. After some discussion it was decided that Lochnaw yr. and Taylor would return for the two loads while the other went through to the coast to camp there and return the next day to the cairn to help with the final six loads.



The two returned rapidly up the glacier and collected the two loads, returning to the cairn in the dark at just after 2130 hrs. Just as the two reached the tent Taylor saw the search light of a ship and a little later Dilly from the coast fired some flares.

The whole group were very relieved to see the ship as they were worried by a delay or possible heavy ice in the sea making it impossible to get through.

27 August

Taylor and Lochnaw yr. were rudely woken at 0500 hrs. by the others with the message that it took five hours to the coast and that the ship had to sail by 1000 hrs. Dilly had remained behind to load the camp on to the ship.

A frantic 30 minutes were spent in packing up finally and sorting the six loads into five. With very heavy packs the party set off into the seracs and soon lost the route. Scrambling on moraine below the sides of the glacier and a few casts brought the party back onto the route. At 0915 hrs. two Danes on the ship came inland to help with the final  $\frac{1}{2}$  mile, and this was very welcome. Eventually the boat was boarded at 0920 hrs., when it heaved anchor and sailed.

A very relieved and jubilant expedition made friends with a Danish Expedition on board, discussed the British Army with Herr Niels Underbjerg the Skipper who had served with the Hampshire Regiment in the war and rested. The boat eventually reached Kulusuk at 2230 hrs. where it was met by Cole and Herr Karlsen and a good Danish meal. This was followed by a shower and a night between sheets.

28 August -  
6 September

This period was spent first in resting and sleeping, before packing all the expedition stores for the flight back. The party was very well entertained both by the Airport and members of Dye 4.

The Andover was due on the 4 September, but was delayed by weather and radio failure.

7 September

The Andover arrived at 0830 hrs. and left with all on board at 1100 hrs. arriving in Iceland at 1700 hrs. local. The evening was spent drinking and eating.

8 September

The expedition left Iceland and flew into Edinburgh where lunch was taken with R.A.F. Turnhouse. Some members left the plane here while the rest flew to R.A.F. Abingdon for dispersal.



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## Map Explanations

### 1. Main Map

- A. - Top Camp
- B. - Bridge Camp
- D. - Forel Depot
- X. - Base Camp

### 2. Area Map

- 1. The Bitch
- 2. It
- 3. The Toadstool
- 4. Consolation
- 5. Mt. Durbar
- 6. Plod Major
- 7. Plod Minor
- 8. The Wart
- 9.)
- 10.) } Patrons Ridge
- 11. The Pharoah
- 12. The Pimple
- 13. The Rhinohorn
- 14. The Marquee
- 15. Pegasus
- 16. Artillery Peak
- 17. The Mole
- 18. Og & Magog
- 19. Dome & Thumb
- 20. Assaye & Inkerman
- 21. Waterloo
- 22. The Pyramid
- 23. Pt. 2700.







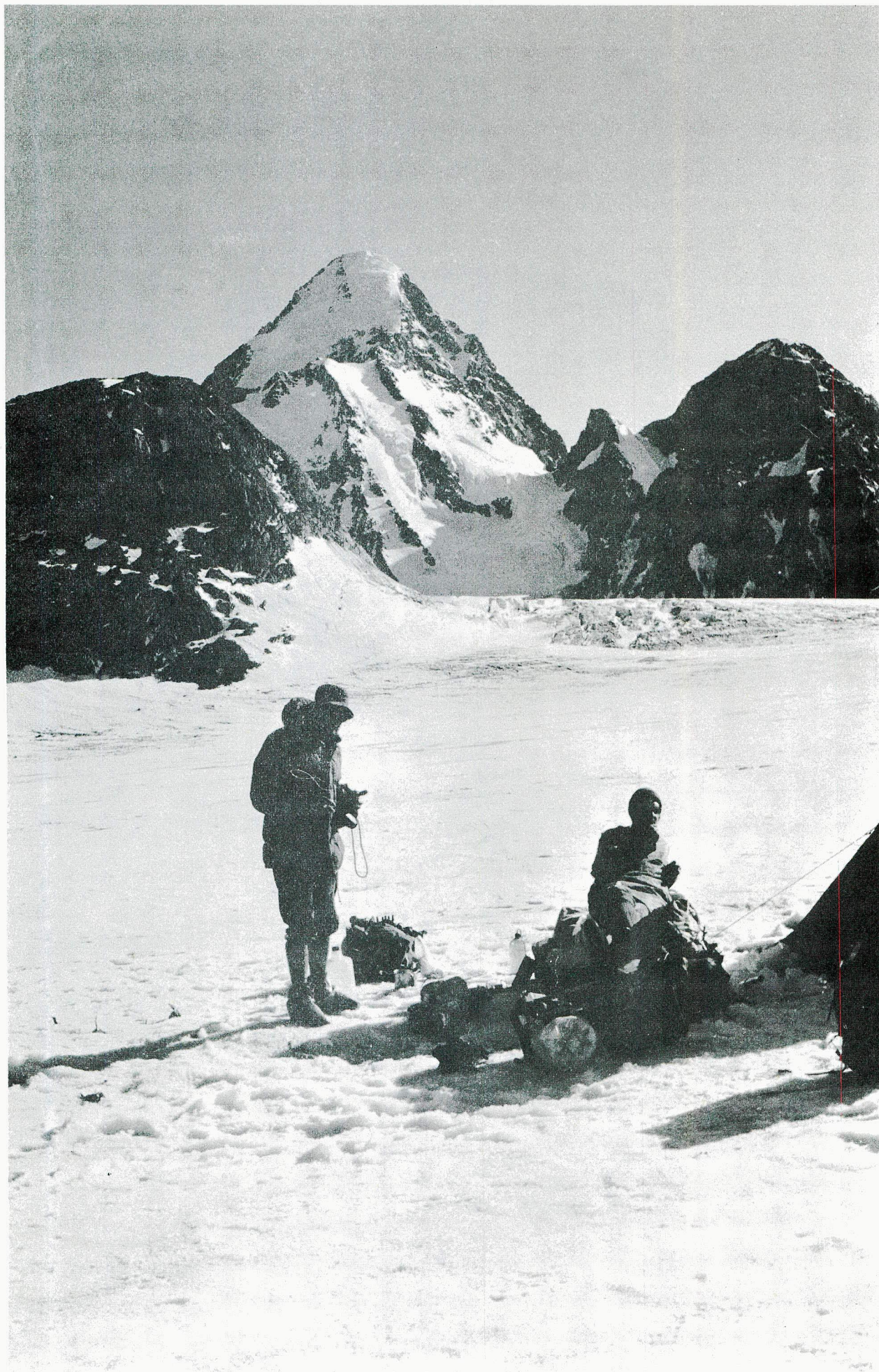






MAIN PARTY - EMBARKING KULUSUK





ON THE FEMSJERNEN





BASE CAMP WITH TOADSTOOL IN REAR









DE 10039 TCL(4.1)

FLEMING ON ARTILLERY PEAK





ON ARTILLERY PEAK





DILLY ABSEILING ON THE THUMB





LOCHINAW YR. WITH THE PHAROAH IN BACKGROUND





DE 10039 TGL(45)

RADIO SCHEDULE

35





TAYLOR AND JAMES SLEDGING OUT



PEAKS AND ROUTES

1. IT (7470 ft.)      25 June      Taylor and Lochnaw yr.

Grade PD.      Time  $6\frac{1}{2}$  hrs.

Route.      Climb to lowest point on col east of Summit.      Follow ridge to summit, turning the one large gendarme to the left by ascending the shallow corner, beyond the chimney, to the edge.

2. PIMPLE (9000 ft.)      4 June      Taylor and Lochnaw yr.

Grade PD.      Time 4 hrs.

The East ridge was climbed.      It was gained from the east end by climbing a steep snow slope and then loose rocks to the north to the ridge.      On descent the ridge was followed to its logical finish.

3. WART (7240 ft.)      6 July      Taylor and Lochnaw yr.

Grade PD (Pitches of 2)      Time 3 hrs.

The peak was climbed by the west ridge.      This was gained by a small glacier half way along the ridge just below the steep part.      The ridge was climbed throughout.

4. BITCH (8740 ft.)      9 July      Taylor and Lochnaw yr.

Grade West Ridge D (Pitches of 5) East Ridge AD.      Time 18 hrs.

The peak was traversed.      There are two south facing ridges.      The West of these was ascended direct avoiding the difficulties as obvious to left or right but always returning to the ridges.      There were 2 Pitches of 5, 4 of + and the rest were 2 of 3.      From the summit the E to W ridge was followed until the East of the South ridges was met.      Continue down the E to W ridge until a scree running back right is reached.      This is followed to gain the Easterly South ridge, which is followed down.

5. The Toadstool (8320 ft.)      16 July      Dilly and Fleming

Grade AD Inf.      Time 8 hrs.

From the Kristians Glacier face up the snow slope adjacent to the right hand buttress.      Cross the Bergschrund with difficulty and then along the ice crest at about  $50^{\circ}$  until the summit ridge is reached.

Along poor quality rock to the summit.      The traverse to the Stool involves a descent of several hundred feet and one pitch of IV on the traverse.      The rock of the Stool is better, but not good.

6. PLOD MAJOR (8960 ft.)      18 July      Taylor and Porter

Grade PD.      Time 4 hrs.

From the third stop of the Col des Whoppers go left up the centre of Cwm. Plod.      The left hand side of the Cwm. is followed to the ridge.      The N.E. ridge is followed to the summit without difficulty.



7. PLOD'S MINOR (9250 ft.) AND MINIMUS (9200) 18 July Dilly and Fleming

Grade AD. Time 3 hrs.

From 3rd step up Col de WHOPPERS (7950 ft.) move WEST up CWM. PLOD. Series of snow peaks on the SOUTH give way to a Col. Just before the Col SOUTH (slide or ski) until the 1st Bergschrund is crossed. Leave the skis. Move directly up over 2nd Bergschrund on to thin snow or water ice. Tavers 150' then move straight up on good ice for 450' (60°) until the ridge is gained on 25' of rock. Turn left on rock ridge walk to summit. From summit move EAST along rock ridge. Descend slightly, gives way to snow patches - sometimes covered. Summit - rock black - reached in 15 mins. Descent made direct over 1 crevasse using crampons on thin snow over ice. 30 mins.

8. MARGUEE (9950 ft.) 21 July Dilly and Fleming

Grade AD. Time 3 hrs.

Make for prominent buttress on NORTH of mountain. Ski round behind this, and climb to obvious bergschrund 300' climb. Leave skis at this 'schrund and ascend in soft snow to foot of steep snow (or ice pitch) climbable in crampons. Make straight up onto the N.E. ridge of the mountain, on goodish snow. Over on the ridge veer right and climb on some rock, but latterly on an excellent snow ridge to snow capped summit. Descent by same route.

9. RHINO HORN (9400 ft.) 21 July Dilly and Fleming

Grade AD. Time 2½ hrs.

From the top of Col move East to round behind the E buttress of the mountain- Ski left at obvious 'schrund, and climb on thin layer of snow over ice up obvious gully between rock. Once on the rock make to the right, moving together, with one pitch of 30' of V climbing. Gain Eastern ridge. Turn left on the ridge and climb to the summit on loose rock and snow ridges. Descent by same route.

10. CONSOLATION (8080 ft.) 23 July Lochnaw yr. and Taylor

Grade F. Time 2 hrs.

The N face by the left edge of the most westerly of the four buttress' was climbed to the E.-W. ridge. This was followed to the summit. No difficulties apart from loose rock.

11. THE MOLE (c 9000 ft.) 4 August Lochnaw yr., James and Taylor

Grade F. Time 1 hr.

A ski route was followed up to the East face until the South summit ridge was gained. This was followed to the summit.

12. GOG (c 9800 ft.) & MAGOG (c 9800 ft.) 6 August Fleming and Taylor

Grade F. Time 2 hrs.

The W face was climbed (on skis) to the 'schrund, and thence on foot to the Col de OG. From the Col de OG an easy summit ridge led to Magog (½ hr.) to the South of the Col. The summit ridge to Gog (N of the Col) contained a pitch of II (1 hr.).



13. THE DOME (c 9200 ft.) & THUMB (9300 ft.) 6 August Dilly and Porter

Grade F and AD (INF) Time 4 hrs.

A ski mountain, a large snow dome facing onto a western rock buttress. One hour's traversing from the col. Care is needed on the summit cornice. Traverse the corniced mixed snow ice and rock ridge towards the Thumb from the Dome. The final 300 ft. of rock provided two interesting pitched on superb sound rock of about severe standard.

The two abseils were secured from sound anchors.

14. ARTILLERY PEAK (9750 ft.) 9 August Dilly, Fleming, James and Porter

Grade D to AD depending on familiarity with snow and ice. Time 6 hrs.

Follow the East ridge to the summit. The ridge is a mixture of steep snow and ice steps. Take the most direct line, except just before the summit crest, here traverse for a few feet onto the face. Care is needed with the cornices. An excellent route needing care, and good technique on steep sections.

15. INKERMAN (9600 ft.) & ASSAYE (9640 ft.) 9 August Lochnaw yr. and Taylor

Grade AD Inf. Time 3 hrs.

The peaks were traversed from the South, on the S. to N. ridge. The main difficulty was the descent from Inkerman to the col before Assaye, a steep snow or ice slope of 70° for 40 ft.

16. WATERLOO (9400 ft.) 9 August Lochnaw yr. and Taylor

Grade AD. Time 3 hrs.

The West ridge was gained from low down on the north side. The bergschrund was crossed and steps cut diagonally up right to the rock. This was climbed (II) tending right. The ice (60°) was now climbed direct up the face for 400' to where it became a ridge. This was followed to summit.

17. PATRONS RIDGE (Five Peaks) 11 August Lochnaw yr. and Taylor

Grade AD. Time 9½ hrs.

Ski up to the Col between Pt Tiso (9760 ft.) and Snow Bump (9400 ft.). Ascend the West ridge of Pt Tiso, up narrow ice ridge to rock, climb this to the summit (PD). Traverse the Snow Bump on skis and ascend to the col between Tryfan Left (9700 ft.) and Tryfan Right (9860 ft.). Climb west ridge of Tryfan on mixed snow and rock (PD). Tryfan Rt. was ascended by the north ridge. Ascend steep snow to the ridge which was climbed direct (F). On the descent move down the West face and on to the snow field to gain the Milestone (9600) ridge. The whole route is AD by virtue of length.

18. MT. DURBAR (8700 ft.) 12 August Fleming and Lochnaw yr.

Grade AD. Time 8 hrs.

Gain the col west of Plod Major and follow the ridge to Pic Dunhill (one pitch IV sup). From the summit of Dunhill climb diagonally down the north face to gain the West ridge above the drop, go onto the north face and descend a crack coming right to the top of the dip (grade 3 sup). Climb the opposing side direct. The snow ridge in places knife edge, others corniced and some 50° (PD/AD) was followed to the summit.



19. PHAROAH (10300 ft.) 12 August Dilly, Porter and Taylor

N. west face TD (in 1). South Ridge AD.

Ski from top camp to the far spur (N.W.) and climb the gently snow slope to the upper snow field. Take the N.W. face direct up the steep ice 55-60° for 1300 ft. to the snow summit. Descent the S. ridge (snow and ice) to the lowest part of the ridge, rock ronyon, descend direct to the bergschrund, jump, and descend via the route of ascent.

20. PEGASUS (9140 ft.) 14 August Fleming, Dilly, Taylor and James

Grade PD AD

Ascend the N face onto the N ridge, snow and ice, and follow it to the summit. 1000 ft. of climbing. One hour from the base to the summit, descend by the same route 20 minutes.

21. PT. 2700 (c 9900 ft.) 14 August Longnaw yr. and Porter

Grade West ridge was gained from the North. This was climbed on snow at first, on the north side and then on the knife edge ridge to the summit.

22. PYRAMID (9920 ft.) 15 August Lochnaw yr. and James

Grade PD. Time 2 hrs. up, 45 mins. down.

The South ridge was gained from the east over a tricky bergschrund. The rock ridge was followed (2 Pitches II/III) interfused with some snow and ice to the summit.

N.B. a. Heights of the peaks are either estimated or taken from an Aneroid Barometer reading.

b. Grades of Snow and Ice routes are as the expedition found them. The Standard will vary with the conditions.

c. The names of the peaks are unofficial. Application has been made to the Danish Government to name the Marguee, Rinohorn, Pharoah and Mt. Durbar.



RATION REPORT

by Lt. C.H. AGNEW of Lochnaw, yr. R.H.F.

General

1. The expedition rations were provided by the Department of Victualling, Ministry of Defence.
2. The expedition had two types of rations. Assault Rations and Supplement. Composite Rations and Supplement.

Assault Ration

3. The Assault Ration was used as a basis for a sledging ration and was supplemented to bring the calorific value of the ration to 5000 cal.

4. Ration for One Man/Day

- A. Assault Ration (Three Varieties)

Supplement:- Oatmeal -  $2\frac{1}{2}$  oz.

Chocolate - 4 ozs. (2 Bars)

Potato Powder - 2 ozs.

A.F. D. Vegetables - 2 ozs.

Milk Powder - 1 oz.

Orangade Powder - 1 oz.

Kendal Mint Cake - 3 ozs. ( $\frac{1}{2}$  bar)

Sardines -  $4\frac{1}{2}$  ozs. (1 tin)

- B. Wt. of Ration - 3 lbs.  $1\frac{1}{2}$  ozs., with packing 4 lbs. 6 ozs.

5. Comments

- a. Detailed comments on the contents of the Assault Ration have been made to Ministry of Defence (Victualling).
  - b. The Assault Ration and Supplement were found to be a very good ration. It was easy to use and provided adequate sustenance.
  - c. The ration at 4 lbs. 6 ozs. per man day was too heavy as a sledging ration.
  - d.  $\frac{1}{2}$  tin of Sardines per man per day was found to be adequate.
  - e. A sugar supplement for the porridge was required.

Composite Ration

6. The expedition used 10 man and 5 man boxes of Composite Ration as a base camp ration, with the addition of a small supplement.



7. The Ration

a. To increase the calorific value of the ration 1 x 10 man box was allowed per each 8 man/day.

b. Daily Supplement per man

Oatmeal -  $2\frac{1}{2}$  ozs.

Sardines -  $4\frac{1}{2}$  ozs.

Kendal Mint Cake - 3 ozs.

Sugar - 2 ozs.

c. Wt. of Ration incl. Packing 5 lbs. per man/day.

8. Comments

a. As a base ration, composite ration was excellent.

b. The breakfast meal of only Sausages/Sausages and Beans was found monotonous.

c. The Sardine ration was not required.

Additional Supplements

9. The following additional supplements were taken in sufficient quantities, for use when required:-

Rice

Curry Powder

Instant Coffee

Horlicks Fudge (8 bars per man)

Enerzade (2doz. per man)

General Comments

10. 3 ozs. of Kendal Mint Cake per man/day was found to be too much. It was eaten mainly on sledging or climbing days. 1 doz. per man for the expedition would have been sufficient. The Brown Cake was more popular than the White Cake.

11. Oatmeal for breakfast palled with most members before the expedition ended. A suitable alternative would therefore have been welcomed.



EQUIPMENT REPORTGeneral

1. The expedition equipment, apart from personal clothing was provided from either M.O.D. Sources or was purchased from Adventure Training Funds  
Vote 7.
2. As the expedition was supplied by air, it was well equipped with disposable items, which although not essential, were useful.
3. Only main comments are dealt with in this report, and some suggestions made for other parties going to this area. A complete equipment list can be had from the expedition leader.

Expedition Equipment4. Ski

- a. These were provided by the Royal Navy on a hire basis and were the Norwegian Cross Country ski with Kandhar bindings. Metal sticks were taken and found to be entirely satisfactory.
- b. The expedition did not take skins. This was a mistake.
- c. Some members of the expedition could not ski. It was suggested that snow shoes might have been better for sledge hauling, and would thus make it easier for non skiers. This should be given consideration.

5. Aeropreen Mattress

These were very kindly provided by Aeropreen Ltd. Some were covered with various Polysterene coverings, but none were entirely satisfactory. The best way appeared to be, to put an uncovered mattress in a large polythene bag.

6. Prett Rucsacs

These are the Army rucsac Airborne (for issue in lieu of large pack) Eight varieties were tested and most found to be good. The following comments are made.

- (1) Most of the Nylon straps came undone easily.
- (2) The material was not always waterproof.
- (3) The shoulder straps, with the exception of the yoke pattern were too far apart.
- (4) Pockets fastened with the press studs did not have the flexibility of those tied with straps.

7. Tiso Tents

- a. The expedition used the new two and three man Tiso Nylon tents, with an inner of cotton.
- b. Both tents were found to be very good and both slept one extra with ease. They were inclined to be rather warm on a hot day, but condensation was no problem. They were waterproof.
- c. Unfortunately the cloth of the two man tent was worn out after three months continuous use. Tiso is making it in a harder wearing cloth now.



8. Sledges

a. The expedition used army issue 6 ft. Nansens, which were found to be totally unsuitable.

b. Fibre glass pulks about 8 ft. in length might be the most suitable.

9. Thermos Flasks

The expedition did not take these. They would have been useful.



MEDICAL REPORT

by Surg. Lt. P.N. DILLY, R.N.R.

1. The medical supplies were excellent. The contents of the medical chest were supplied by the R.A.M.C. and based on the lists of recommendations in Exploration Medicine Edit Edholm & Bacharach; (Wright pubbl.).
2. There were two major accidents, one caused by ski-ing and the other glissading. In both cases trauma to the ankle caused a fracture, in one case of the talus, Beaton ski-ing and in the other of the lower tibial condyle, fortunately below the ankle joint, Lochnaw yr.
3. Beaton was evacuated to the coast and repatriated to Great Britian where his ankle was immobilised in plaster for six weeks.
4. Lochnaw yr. was treated at base camp. Again by immobilisation of the limb with plaster of paris, and after 3 weeks with elasticated stockinette. This proved adequate and he was able to ski and climb four weeks after the injury.
5. In a previous accident, Lochnaw yr. sustained a fracture of his little toe of the other foot. No treatment other than splinting of this toe to the adjacent toe with elastoplast was undertaken. Although the toe remained painful it did not affect his mobility.
6. A fracture of a metacarpal of Lochnaw yr.'s left hand was not treated and healed of its own accord.
7. Soon after the plaster was removed from his ankle Lochnaw yr. scalded his lower limb. An area about 6 ins. x 3 ins. raised in a large blister. This was treated conservatively. Simply allowed to dry during the day, and covered with a dry dressing at night. The wound healed well with no infection.

Minor Trauma

8. During the early stages of the advance party march in James sustained an ankle injury that necessitated his return to the coast. Two weeks later when the main party arrived his ankle had healed sufficiently to allow him to accompany the party inland. Despite occasional moments of pain, usually associated with heavy load carrying the ankle did not restrict his mobility or climbing. No diagnosis was established for this injury.
9. In the later stages of the main party march in Porter hurt his ankle and had a recurrence of an old ski-ing injury that manifested itself as tibialis anterior tenosynovitis. This was treated by strapping with elastic elastoplast and soon healed.
10. One minor case of heat exhaustion was treated by rest in the shade for several hours.
11. There was one case each of sunburn, vomiting, snow blindness, diarrhoea and blisters, all of a minor nature that yielded almost immediately to treatment.
12. Only one cut required skin closures, and that was sustained while ski-ing.
13. The expedition sleep problems were solved by the use of butobarbitone.



14. The walk out was complicated for one member by a sore rash on the insides of his thighs. This yielded to Whitfield's ointment.
15. The pre expedition dental check precluded any dental problems.



FINANCIAL REPORTINCOME

- |    |                                        |       |       |
|----|----------------------------------------|-------|-------|
| 1. | Members Contributions @ £50            |       | £400  |
|    | Members Units.                         |       |       |
|    | 1st Bn. Black Watch                    | £40   |       |
|    | 2nd Bn. Parachute Regt.                | £ 5   |       |
|    | 1st Bn. Royal Green Jackets            | £20   |       |
|    | 2nd Field Regiment R.A.                | £ 5   |       |
|    | David Brue Laboratories                | £ 5   |       |
|    | Chaplain Generals Fund                 | £10   |       |
|    |                                        | <hr/> |       |
|    |                                        | £85   | £ 85  |
|    | General Officer Commanding Scotland    |       | £ 50  |
|    | Commander Lowland Area                 |       | £ 25  |
|    | Lowland Brigade Colonel                |       | £ 25  |
|    | Adventure Training Funds Vote 5a.      |       | £ 80  |
|    | Army Mountaineering Assn.              |       | £300  |
|    | Nuffield Trust for Forces of the Crown |       | £300  |
|    | Polar Postal History Society           |       | £ 25  |
|    | Public Relations H.Q. Scotland (Army)  |       | £ 10  |
|    |                                        |       | <hr/> |
|    |                                        |       | £1330 |
2. The Mount Everest Foundation provided £100 for use on travel to Greenland. This was returned after the R.A.F. agreed to fly the expedition.

EXPENDITURE

- |    |                                                                               |       |       |
|----|-------------------------------------------------------------------------------|-------|-------|
| 3. | General                                                                       |       | £ 65  |
|    | Insurance                                                                     |       | £ 65  |
|    | Equipment (not including £300 from Adv. Trg. Funds provided by H.Q. Scotland) |       | £290  |
|    | Rations                                                                       |       | £ 90  |
|    | Entertainment & Presentations                                                 |       | £ 90  |
|    | Photographs                                                                   |       | £125  |
|    | Expenditure in Greenland                                                      |       |       |
|    | Food and Accomodation on                                                      |       |       |
|    | Journey                                                                       | £300  |       |
|    | General                                                                       | £ 15  |       |
|    | London University M.C.                                                        | £ 40  |       |
|    | Boats                                                                         | £ 60  |       |
|    |                                                                               | <hr/> |       |
|    |                                                                               | £415  | £415  |
|    | Cash return to A.M.A.                                                         |       | £200  |
|    |                                                                               |       | <hr/> |
|    |                                                                               |       | £1330 |
4. At the time of preparing the balance sheet the account was not finally closed; therefore some Cr./Dr. have been estimated. Expenditure has been rounded off to the nearest £5 in most cases.
5. The expedition leader holds a detailed account.



PHOTOGRAPHIC REPORT

by Lt. B.K. Porter R.A.

Cameras

1. The cameras used were of the 35mm miniature type. In addition to the four Reid and Sigrist models obtained from M.O.D. sources, expedition members took their personal cameras which varied from a Voigtlander Vito C to a Minolta S.L.R. TRI 101S. None of the cameras had been winterised, but only on rare occasions was slight difficulty experienced with the focussing and shutter mechanisms tending to freeze.

Film

2. The expedition was supplied with Ilford HP 3 for black and white work, and Kodachrome II and High Speed Ektachrome (ASA 160) for colour. It was found that the speed of the HP 3, 400 ASA, was an embarrassment at the high levels of light intensity normally encountered. Of the colour films, Kodachrome II has the slight advantage that with 36 exposures per cassette, less weight of film had to be carried.

Filters

3. Ultra violet on haze filters were used for most exposures with colour film, whilst X2 yellow were used for black and white.

Processing Comments

4. The colour film was processed by Kodak and the black and white privately by Dilly.
5. Most of the Ektachrome and HP 3 film was over exposed, although by virtue of the colouring of Ektachrome this did not matter. Detail in the sky was lost and the snow appeared matt white. The low speed Ektachrome (ASA 64) would have been better.
6. The Kodachrome II film often produced very dark and underexposed negatives, even though given the correct exposure. 250th Sec. at f.8 was commonly used and it is possible that the shutter speed was too fast and that 60th Sec. at f.22 would have produced better results.
7. The Voigtlander was always used at f.22 and this, or perhaps, the lense hood clipped the corners of most of the negatives.



LONDON UNIVERSITY GRADUATE MOUNTAINEERING CLUB EXPEDITION

by Sgt. P.G. COLE, R.A.M.C.

After returning to the Coast with Capt. Donald Beaton, 10 days were spent at Kulusuk waiting for the arrival of the L.U.G.M.C. expedition.

We hoped to be able to travel in with them to the Kangerdlugssuatsiaq and the Glacier de France where our own party was to meet us.

On the 17th the London party arrived and kindly agreed to take us with them.

We arrived at the Kanger kiord the next day, and set up a base camp on the North Bank about two miles from the south of the Glacier de France. On the morning of the following day Donald's ankle was causing such pain that he decided to return to Kulusuk. He left the next morning with out boat which had remained in the fiord overnight.

For the next few days the weather played tricks with short fine spells and long periods of mist and rain.

By the 26th it was evident that my own party would not be coming to collect me. The London group generously invited me to join them in their own programme.

Dr. John Coote and Dr. Mike Eston had designs on "Ingolfs Fjield" an impressive 2232m. peak, and left by rubber boat to investigate its southern faces.

The remainder of the party concentrated in getting up a "climbing camp" at 800m. on the Thank-God glacier.

Of the 21 days spent in this area there was barely 6 fine days. This was a reversal of all previous weather patterns.

During one of the snatches of fine weather, I accompanied expedition leader Derek Fordham and Dr. Ian Campbell to the top of the "Thank God" where we climbed at 1700m. peak.

A few days later with John Coote and Mike Eston we climbed a 1300m. peak to the south of Ingolfs Fjaeld.

On the 7th August we left Kanger Fjord to return to Kulusuk.

I was thrust upon the London party in a destitute state.

The way in which they made me welcome in this situation speaks highly of them.

I could not have fallen in with a finer bunch. My thanks to them all.



RADIO REPORT

by Captain T.E.F. Taylor, R.G.J.

Plan

1. The radio used by the Expedition was the SR A13.
2. There was a radio link planned on each Monday for 4 hours with various unit stations in the U.K. The radio instructions were issued by 216(Para)Sig Sqr.
3. The main party arranged an additional link with the radio station at ANGMAGSSALIK. Unfortunately this schedule came in the middle of the one to the U.K.

EXECUTION

4. The Radio Set was airdropped to the advance party with the rest of the expedition supplies. After the airdrop the 50 ft. coaxial cable was found to be missing.
5. A Coaxial cable was improvised using wire from the counterpoise. Also a droopy drapole was tried using a 2 ft. coaxial cable.
6. The first radio schedule kept was Monday 8 July. All other schedules were kept and the last was on 5 August.
7. Contact was not made with the U.K. or ANGMAGSSALIK. On Monday 15 July the operator of the 1 RGJ station thought he heard the expedition for a few seconds. On Monday 29 July the expedition Radio op heard his N.I.S. coming over at about 8 w.p.m. on the U.K. Schedule intermittent strength 5. This lasted for only a few minutes but kept fading. On a few other occasions the N.I.S. was heard faintly on the U.K. Schedule.
8. ANGMAGSSALIK was heard strength 5 on 15 July and 22 July. But we could not contact them. ANGMAGSSALIK was also heard on voice strength 5 talking to Kunguit and other outstations on several occasions. Again they could not be contacted.

REASONS FOR RADIO FAILURE

9. The main reason is believed to be the loss of the 50' coaxial cable. Apparently the improvised Coaxial cable would not have worked as the majority of the transmitting power would have been lost.
10. The droopy diapole using the 2 ft. coaxial cable did not appear to work either. Apparently the bearing and length of the diapole must be calculated accurately, and are critical when working long ranges.
11. The schedule to ANGMAGSSALIK was for 30 mins. only and this was not long enough to establish the initial contact.
12. The Frequencies allotted were 7.865 M/HS and 7.305 M/HS. We were advised before leaving that these were not high enough and should have been in the region of 12 to 14 M/HS. According to the Danish Radio operator a fading signal is characteristic of receiving a low frequency signal at long ranges.
13. The inexperience of the Operator.



## RECOMMENDATIONS

14. Although the A 13 stood up to the conditions well it was an unsuitable radio set for the expedition because:
- a. It was too heavy (100 lbs. complete).
  - b. The Frequency range of the set is only 2 - 8 M/HS.
15. Future expeditions should not attempt to contact the U.K. but arrange for the local radio station to listen out for them once a day. This has been done by previous expeditions and has the following advantages:
- a. As you will be working at much shorter ranges, you will not require such a sophisticated radio set.
  - b. You might well be able to get through on voice (as the 1968 Danish Expedition), and therefore the expedition would not require an operator capable of working on C.W.
  - c. The Monday schedule tied down the expedition in that at least two members had to be at a certain place at a certain time to operate the radio. A daily listening watch by the local radio station is a far more flexible arrangement.
16. If a U.K. schedule is required, it is suggested that the expedition should take an A 128 set or an A 16 with a fully trained operator. It is understood that training for this takes 2-3 months.

## REAR LINK

17. The following units provided listening stations:-
- 1 RGJ
  - 1 BW
  - 1 RHF
  - 216 (Para.) Sigs. Sqn.



METEOROLOGICAL REPORT

From previous experience the expedition would seem to have had an unlucky season. The weather for the period of the journey in was very settled and clear, one depression moved in over the period 25-27 June with a day's snow and another of unsettled weather.

The good weather then continued until 19 July. After this the weather was very unstable with depression following depression giving a day's blizzard, a day in cloud, then short improvement for one or two days. The depression appeared to come from the W.S.W. over the ice cap but the ground wind was always from the east down the Kristians glacier. It was undoubtedly a local wind.

The line of peaks to the north of the Kristians glacier acted as a weather trap, forming banner clouds early and taking at least one extra day to clear.

The precipitation was always snow about 1000m. and about three feet of snow (not measured accurately) fell during the bad spell. Temperatures during the day in the sun rose up to 70°F and at night fell to -10°C with occasional nights much colder.

There was another reasonable period from 11 to 22 August when it did not snow, but a pending depression threatened continually with the odd incursion of strato-cirrus, until the weather broke finally on the 25 August with daily rain and mist on the coast.

	<u>/Clear Days</u>	<u>Snow/Low Cloud Cover</u>
8-30 June	16	6
July	23	8
1-27 August	18	9



ROUTE REPORT

Names used in the description of the route include names given to features by previous expeditions. These may be found in their reports.

ADVANCE PARTY

1. Route. Head of TASSISARSSIK FIORD - Up first glacier to the EAST-COL de PULLIES (ROCH) - WINLATT (SEGE 63) - 16 SEPTEMBER Glacier - Col de ESKIMO (ROCH) - Col to East of CONNIATS Bj - Glacier de FRANCE - FEMSJERNEN.
2. Going
  - a. The fiord was ice covered and travel was on the sea ice. The first glacier was crossed diagonally from south to north till a col on the north lateral moraine was gained, this was followed to the level glacier above.
  - b. On the glacier travel was at night. The best times were between 2359 hrs. and 0630 hrs.
  - c. The advance party had no difficulties with crevasses at any stage in the journey. The snow line on the Glacier de FRANCE was where it was joined. The CONNIATS Icefall was no problem. The FEMSTJERNEN was taken in a wide sweep to the WEST and NORTH.

MAIN PARTY

3. Route. East End of KNUD RASMUSSEN SNOUT - 16 September Glacier - Col de ESKIMO and then as for Advance Party.
4. Going
  - a. The KNUD RASMUSSEN was gained by a moraine on the East. The dry ice was not difficult. It gave way to snow at the junction with the 16 SEPTEMBER Glacier.
  - b. No crevasse problems were encountered on the journey.
  - c. The Glacier de France was dry to the FEMSTJERNEN - the surface provided no difficulties. There was a crevassed area where the POURQUOI PAS Glacier joins.
  - d. The FEMSTJERNEN was taken hard in on the EAST and this was followed until the CHAMPS ELYSEES Glacier was gained.

JOURNEY OUT

5. Route. KRISTIANS Glacier - FEMSTJERNEN - GLACIER de FRANCE.
6. Going
  - a. The KRISTIANS Glacier was crevassed with large crevasses every 20 or so yards, with adequate bridges, until the Junction with the CHAMPS ELYSEES Glacier.
  - b. From here to the Glacier de FRANCE the going was made difficult by pressure ridges and seracs. The route was close in to the mountains on the EAST.



- c. The Glacier de FRANCE was heavy going to the POURQUOI PAS Glacier, very hummocky with melt streams. The crevasses at the POURQUOI PAS junction were numerous, but a route is feasible. There is a small ice fall on the Glacier de FRANCE on the latitude line  $66^{\circ} 29'$ , but below this going is good provided the moraines are crossed as required by observation.
- d. The coast was gained on the north side. There is a camp site and docking facilities for ships up to coaster size right at the snout. The last three miles between the northern moraine and the mountain is heavily seracs and will require at least one day route finding and possibly fixed ropes.



BOTANICAL REPORT

G. Halliday

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Since 1963 six expeditions have made botanical collections from the mountain area lying inland from Sermilik, Sermiligaa and Kangerdlugssuatsiaq fiords and extending north to Schweizerland and towards Mont Forel. These collections are from more than 50 sites varying in altitude from 370m. to 2400m. and at each a collection was made of all the flowering plants and ferns which the collector judged to be present. Although there was no professional botanist on any of these expeditions there are probably few plants occurring in the area which await discovery and there is probably no mountain area in Greenland of comparable size which has been investigated so thoroughly.

The only botanical results published to date are of the 1963 Scottish East Greenland Expedition to the mountains lying south of 16 September Gletscher (Gribbon 1964, 1968) and the 1966 Royal Naval Expedition to eastern Schweizerland (Halliday 1967). However, it is hoped to publish shortly a full account of the nunatak flora incorporating the botanical results of all the expeditions.

Learning of my interest in the area Lt. Porter, of the present Expedition, agreed to make some collections in the vicinity of Kristians Gletscher, which had not previously been visited. He brought back with him material from two sites near the col at the western end of the glacier.

Site A was in the vicinity of the Base Camp on the south side of the glacier. It was a steep unstable rocky slope facing N.N.E. situated just above the level of the glacier at about 1670m. The plants were collected from stabilised rock crevices.

Site B supported the richest vegetation in the area. It was situated at the extreme southern end of Point 2730 at an altitude of 1900m. above the north side of the glacier. The plants were growing in loose earth and rubble. Patches of vegetation were noticed at several places along this side of the glacier and towards Femstjernen.

The following species were collected from these two sites:-

<i>Cystopteris fragilis</i>	AB	<i>Silene acaulis</i>	AB
<i>Potentilla nivea</i>	B	<i>Antennaria canescens</i>	B
<i>Saxifraga nivalis</i>	AB	<i>Luzula spicata</i>	B
<i>Saxifraga cernua</i>	A	<i>Carex nardina</i>	AB
<i>Saxifraga caespitosa</i>	AB	<i>Poa glauca</i>	B
<i>Chamaenerion latifolium</i>	B	<i>Poa arctica</i>	A
<i>Papaver radiculatum</i>	AB	<i>Trisetum spicatum</i>	AB
<i>Cerastium arcticum</i>	AB		
<i>Melandrium affine</i>	A		

Slightly more than half of these 16 species are wide ranging arctic-montane species and half of the species can be found on mountains in the British Isles.



The preponderance of the Arctic-montane element is a characteristic of the inland nunatak flora but the most interesting feature of the flora is the occurrence of the species such as Potentilla nivea, Papaver radicatum and Melandrium affine which, at least in this part of Greenland, appear to require an arctic continental climate with relatively dry summers. These species are common at sea level from Scoresby Sund northwards in the central fjord region of east Greenland but south of the Blossville Kyst they avoid the wet, low-arctic climate of the outer coast and fjords and are largely restricted to the inland nunataks. This tendency becomes increasingly pronounced southwards. Previous to the expeditions of the last five years, many of these species were either thought to be very rare in this part of Greenland or else completely absent. Potentilla nivea, for example, was known from only one locality but it has now been recorded from 15. Melandrium affine was not known south of Scoresby Sund until 1966 when it was collected by a Swiss Expedition at 1500m. high up Pourquoi Pas Gletscher. Site A is only the second locality in the area.

It is worth noting that in addition to these two sites Lt. Porter investigated ten others lying north of the mountain ridge on the north side of Kristians Gletscher and extending north to Point 2700. All lay within the altitudinal range 2075 - 2450m. Despite careful searches no vascular plants were found. There are in fact only two collections from the area lying wholly within this altitudinal range: one from the south side of Avantgarden (2050-2150m., 5 species) and the other from the southern slopes of Point 2500 in east Schweitzerland (2200-2400m., 11 species). The latter is appreciably nearer the coast and probably has a marginally more favourable climate. Certainly the evidence suggests that towards the interior the altitudinal limit for vascular plants lies at about 2150m.

In conclusion I should like to express my thanks to Lt. Porter for his willingness to co-operate in this study. His plant collection is in the Arctic Herbarium at Lancaster University; a duplicate of Melandrium affine has been given to the Botanical Institute of Copenhagen University.

#### References

- Gribbon, P.W.F., 1964, in General Report, Scottish East Greenland Expedition 1963: 34-40.
- Gribbon, P.W.F., 1968, Altitudinal Zonation in East Greenland. Botanisk Tidsskrift, 63: 342-357.
- Halliday, G., 1967, Botany Report, Appendix 5 of Report on the Royal Naval East Greenland Expedition 1966. Plymouth.



