IMPERIAL COLLEGE EXPLORATION BOARD

Contents

From Idea into Expedition 2
The Expedition 5
Mountaineering Notes 41
Conclusion 23
Appendix 1 - Dist... 29

THE IMPERIAL COLLEGE ARCTIC NORWAY EXPEDITION, 1957
Appendix 3 - Summary of Expenditure 28
Appendix 4 - Acknowledgements 49

Maps 1 - D.A. BAXTER, B.Sc. 1-26 appear at the end of the Text.

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IMPERIAL COLLEGE OF SCIENCE & TECHNOLOGY
August 1958
Contents

From Idea into Expedition 2
The Expedition 5
Mountaineering Notes 21
Conclusion 23

Appendix 1 - The land that wills; 25
Appendix 2 - Equipment; the haunted spire, 27
Appendix 3 - Summary of Expenditure; the land of the glacial fire, 28
Appendix 4 - Acknowledgements; the magical land of the hills; 29

Maps 1 - 4 and Photographs '1 - 24' appear at the end of the Text.

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The Imperial College Arctic Norway Expedition 1937 was originally conceived by the members of the Swiss Training Expedition for the Karakoram held in 1936. It was felt that those members of this Training Expedition not chosen for the final Karakoram team would be free to organise their own minor expedition and then apply to the Imperial College Exploration Board for funds to finance a group of people.

There is a region of heart's desire, free for the hand that wills; land of the shadow and haunted spire, preparing land of the silvery glacier fire, land of the cloud and starry choir, magical land of the hills; loud with the crying of winds and streams, thronged with the fancies and fears of dreams.

As the embryonic expedition had a mountaineering background.

G.W. Young.

Norway seemed the obvious choice for a minor expedition. Originally the choice of area was the Lyngen Peninsula, where, after consultations with Durham University Exploration Society, it was uncertain that work of a geological nature would be a useful addition to the exploration of the peninsula. However, the two geologists who wished to join the expedition were considered by the Board to be too inexperienced to carry out useful work in such an unknown area; accordingly the size of the party was reduced from six members to four and its aim changed from geological survey to mountaineering exploration. The Exploration Board offered to reconsider the proposal if financial support could be obtained from some outside source, such as the Mount
FROM IDEA INTO EXPEDITION.

The Imperial College Arctic Norway Expedition 1957 was originally conceived by the members of the Swiss Training Expedition for the Karakoram held in 1956. It was felt that those members of this Training Expedition not chosen for the final Karakoram team would be free to organise their own minor expedition and then apply to the Imperial College Exploration Board for funds to support it. Thus it was that three people began, in November 1956, the sometimes tedious task of preparing the ground before a firm proposal for an expedition could be submitted to the Exploration Board.

As the embryo expedition had a mountaineering background, Norway seemed the obvious choice for a minor expedition. Originally the choice of area was the Lyngen Peninsula, where, after consultations with Durham University Exploration Society, it was ascertained that work of a geological nature would be a useful addition to the exploration of the peninsula. However, the two geologists who wished to join the expedition were considered by the Board to be too inexperienced to carry out useful work in such an unknown area: accordingly the size of the party was reduced from six members to four and its aim changed from geological survey to mountaineering exploration. The Exploration Board offered to reconsider the proposal if financial support could be obtained from some outside source, such as the Mount
Everest Foundation. Mr. M. Westmacott, of that organisation, held that the expedition stood very little chance of qualifying for a grant from the Everest Foundation for any area in Norway, but he did provide the expedition with some valuable contacts who were able to advise on four areas which were thought to be unclimbed. Chief of these contacts was Mr. Jack Ramsden who confirmed that Altevatn was "perhaps the best bet left". From the researches the expedition made it was obvious that there was no area which could be guaranteed as still being virgin country. Hence Altevatn, east of Bardu, on the Norwegian-Swedish border became the objective of the expedition whose intention was to explore the area, climb any mountains it held and take a photographic record from which, if required, a map could be constructed.

There remained only the raising of funds from an outside source and this was solved when the Goldsmiths' Company, to whom the expedition tenders its sincere gratitude, replied to a request for help with a grant of £50. This, together with personal contributions and a grant of £55 from the Exploration Board, made the expedition solvent and so, towards the end of March, the organising became practical rather than theoretical.

The members of the expedition, with their ages, expedition and pre-expedition jobs and departments were as follows:-

D.A. BAXTER, B.Sc. - 22 - Postgraduate, Concrete technology, Leader and Organiser, Food, Finance, Travelling Arrangements.
P.E. FAWKES, 22 - 3rd year Civil Engineering, Photographer and
Surveyor, Surveying and photographic equipment.

M. GORB, 19 - 2nd year Civil Engineering, Clothing.

A.M. HODGSON, 20 - 2nd year Chemistry, Camping and climbing
equipment.

with the dreamy first sight of Tilbury Docks and subsequent
embarkation on the Swedish Lloyd S.S. "Britannia". After a
very pleasant and hot two day boat trip we failed unsuccessfully
with Swedish Lloyd officials in Gothenburg about 1400 cigarettes
which had gone astray, and then set out on the second stage;
the rail journey to Stockholm. Southern Sweden with its open
undulating plains, was quite pleasant but its appeal soon palled.

We spent the night in Stockholm, did some sightseeing the following
morning, and then set out on the third stage of our journey
by the "Nordpilen" express up the tree-clad east coast of
Sweden and then across to Harvik (map 1). This 26 hour journey
was a most irritating one, for we had no seats and the country
through which we travelled was hidden by mile upon mile of
pine forests. However, our first view of Norway, as we glided
down beside the blue waters of the Romnakafjord into Harvik
was a lovely setting to the end of this long journey.

We were now in the "Land of the Midnight Sun" and
at midnight as we retired to our sleeping bags on a mosquito-ridden
hill above Harvik, thankful that our 1500 mile, 5 day journey
was over, it was still as light as a winter's afternoon in
London.
The following day, after a meal of "Lappkaka", we were ready to continue our journey to Alta, our ultimate objective, which lay about seventy miles to the north-east (map 3). The first leg of this journey was covered by sea, reaching one of the Swedish Lloyd S.S. "Britannia". After a very pleasant and hot two day boat trip we haggled unsuccessfully with Swedish Lloyd officials in Gothenburg about 1400 cigarettes which had gone astray, and then set out on the second stage; the rail journey to Stockholm. Southern Sweden with its open undulating plains, was quite pleasant but its appeal soon palled. We spent the night in Stockholm, did some sightseeing the following morning, and then set out on the third stage of our journey by the "Nordpilen" express up the tree-clad east coast of Sweden and then across to Narvik (map 1). This 26 hour journey was a most irritating one, for we had no seats and the country through which we travelled was hidden by mile upon mile of pine forests. However, our first view of Norway, as we glided down beside the blue waters of the Rombaksfjord into Narvik was a lovely setting to the end of this long journey.

We were now in the "Land of the Midnight Sun" and at midnight as we retired to our sleeping bags on a mosquito-ridden hill above Narvik, thankful that our 1800 mile, 5 day journey was over, it was still as light as a winter's afternoon in London.
The following day, after a meal of "Lappskaus", a concoction of meat, beans and potatoes, we were ready to continue our journey to Altevatn, our ultimate objective, which lay about seventy miles to the north-east (map 2). The first 50 miles to Setermoen we covered by bus, catching one of the numerous buses which leave Narvik at midnight. At 3 o'clock in the morning we were set down in the small town of Setermoen. Sleepy-eyed, we stumbled off to pitch our tent, while a Lapp and his family in their blue and red national costume, who had been selling souvenirs in Narvik, were driven off in a Chevrolet! Later that day a local inhabitant took us and our 800 lb. of equipment on to Altevatn in a small lorry, by way of a very rough track and several small rivers.

The scene which lay before us at the end of the track was rather disappointing from the mountaineering point of view, with wide marshy valleys and round-topped hills (fig. 3). Kirkestind, 5120 feet, which lay six miles to the north of our base camp, looked the most interesting and we laid plans to explore this group from a nearer vantage point. While pitching our first camp at Altevatn we met a Norwegian Army sergeant who, inside ten minutes, managed to convey to us by sign language that there was no magnetic declination around Altevatn and that there was an artillery range on the hillside in the direction which we shortly intended to explore. He also told us the times of firing. To our surprise, a Lapp from the nearby
Lapp encampment could speak English and we learned from him that he owned six thousand reindeer, which made him quite a rich man, and that he wintered his herd in Sweden and spent the summer at Altevatn.

The journey of six miles from our base camp at the west end of Altevatn to within a mile of Kirkestind was a gruelling one. We were carrying 70 lb. loads through thick willow scrub, across marshes and then over a steep ridge into Luotnavagge and the trek took us two days. We pitched our camp at the foot of Kirkestind on a moraine which formed one of a number of small islands in a large rapidly melting snowfield, through which walking was very wet and slushy. The weather, being hot and sunny, brought out the mosquitos, which plagued us incessantly in spite of liberal applications of the mosquito sticks which we had brought from England. Later on, we did find temporary relief from mosquitos with a Norwegian oil called "Finn Oljen".

During the following four days both Maddanipa and Kirkestind, the highest mountains in the area, were climbed. The climb on Kirkestind was repeated and a round of shots taken from the summit with photo-theodolite and compass (fig. 4). The many cairns we could see on the surrounding mountains added to our conviction that the area was not as unexplored as we had hoped. More or less continuous low cloud and rain prevailed and two attempts at surveying were thwarted. The surrounding
mountains were uninteresting from a climber's point of view. Snow conditions were unfavourable due to the warm weather and the rock that was vertical enough to encourage climbing was wet and badly weathered. To the west of Kirkestind, just north of Setermoen and 20 miles distant, lay a more interesting group of mountains, by name Istind. They had a more Alpine character, with sharp ridges and fine peaks, and it was our intention to move to this area after a fortnight at Altevatn.

On 16th July, four days after setting up our advanced camp near Kirkestind one of our party fell. Our plans, for that day, were to split up into two pairs. While Fawkes and Baxter were surveying on Maddanipa, the other two, Hodgson and Gorb, would try to put up a rock route on the buttress on the south face of Kirkestind. However, the weather deteriorated again, low cloud settled onto the mountain tops and it started to rain, so the surveying was postponed. Meanwhile the two rock-climbers had ascended about 150 feet and then started to descend after heavy rain made things difficult. About mid-afternoon, while abseiling to avoid 50 feet of treacherous slimy slab, a piton came out and Hodgson fell a clear 50 feet onto a steep scree slope, fracturing both legs, one arm, hip and teeth. There followed thirty hours of grinding rescue work. The extreme length of time before Hodgson was admitted to hospital was due to the rough country. The rescue team, engineers from a construction camp at Inset, 9 miles away, arrived fifteen hours after the accident at 6 o'clock the following morning, bringing
with them a nurse. Overnight, Hodgson was made as comfortable as possible; ice-axes were utilised as makeshift splints and a flysheet was erected over him. The nurse took over from us in everyone involved in Hodgson's rescue and subsequent stay and performed miracles (fig. 5). Never before had we been so happy and relieved to see a nurse. At 9.30 a.m. we started back, down the steep, large-bouldered scree slope, across the soft snow of the valley and up over the ridge carrying out a semi-surfaced job. The helicopter crew, who saved us much agony, were very thankful to see the nurse at Narvik hospital. The eleven Norwegians from the construction reserves took over from the most tired. The stretcher with recovery and although extremely busy, good great pains to explain to us the extent of his injuries and his subsequent progress. Thanks should also be extended to various people who visited Hodgson swathed in bandages and blankets was heavy, very awkward to handle and needed seven people to manage it successfully. Nine hours were thus spent in manhandling the stretcher down the valley towards the Norwegian construction camp at Innset.

We were still only about two thirds of the way to the ambulance when to our relief, for we were apprehensive about crossing the wide river (fig.7), a Norwegian Air Force helicopter, sent for and determined Hodgson himself, who remained conscious in the morning, arrived and took the injured man directly the practically the whole time and thus was able to give valuable forty miles to Narvik hospital.

In our exhausted state, we were very thankful for the warm hospitality shown to us by the local people. After a night spent with them we moved back into the mountains, collected our equipment, said goodbye to our rescue team and the nurse and returned to Narvik to find Hodgson in excellent hands.

Although beginning to feel the effects of his injuries to a much
greater extent and his rather rough passage during his rescue,
convinced the 'mysteries of mountain climbing'. The non-
forest condition was much better than we expected.

At this point we would like to record our deep gratitude
for our rescuers, the police, the Red Cross and the
people involved in Hodgson's rescue and subsequent stay
in Narvik hospital. The eleven Norwegians from the construction
crew who joined the rescue party, worked like trojans. The

nurse we all admired very much for her pluck and stamina in
Alpine Club not long ago, "if your mystery not to imply
carrying out a man-sized job. The helicopter crew, who saved
nothing which you cannot understand, but in the older
and younger generation, we were very thankful to see. The surgeon at

Narvik hospital was responsible for the injured man's splendid
recovery and although extremely busy, took great pains to explain
non-climbers! and also 'a handcraft' in the old guild
to us the extent of his injuries and his subsequent progress.

Thanks should also be extended to various people who visited
the casualty while in hospital, especially the Norwegian Army
Captain and his Scots wife who also lent their house to Hodgson's

in the words of the Times, 'the wordly alternative of an
parents so that they could be near him. In no small measure

'his boon and a horrible death'. 'It is magnificent!',
the success of the rescue operation benefited from the courage
in a leading article cried, 'but is it life? Is it duty?
and determination of Hodgson himself, who remained conscious

Is it consequence?' The members of the club answered in
practically the whole time and thus was able to give valuable
advice whilst we manoeuvred him about.

Here I quote from a report to the Goldsmiths' Company,
compiled by P. E. Fawkes;

"It is at times like this that climbers have to face
the regrettable fact of causing considerable trouble and
anxiety to others. But accidents do not prevent them from
pursuing the 'mystery of mountain climbing'. The non-
mountaineering public is apt to regard this sport as an
irresponsible way of getting into danger, and so
endangering the rescue parties who go out to help, but
we might as well all stop driving motor-cars or playing
rugby. As Raymond Greene said on the centenary of the
Alpine Club not long ago, 'I mean 'mystery' not to imply
something which you cannot understand, but in the older
sense of a 'religious truth' divinely revealed, especially
one beyond human reason' (that anyhow will appeal to
non-climbers!) and also 'a handicraft' in the old guild
sense, like the 'mystery' of the goldsmith! At the time
of the Matterhorn disaster the Alpine Club was violently
attacked for encouraging a sport which offered its followers
in the words of the Times, 'the equal alternative of an
idle boast and a horrible death'. 'It is magnificent',
'a leading article cried, 'but is it life? Is it duty?
Is it commonsense?' The members of the club answered in
effect that even if it was neither duty nor commonsense it
was life, and they went on climbing.'

On 25th July, after having spent three days in Narvik
making arrangements for the injured man, during which time we
were assured that he was in good hands and progressing well,
we set out for the Storsteinfjell Massif, about twenty-five miles
the long winters. These small farms and houses, with their
S.E. of Narvik (Map 2), with a month's supply of food.

Storsteinfjell was recommended to us by the British Vice-Consul in Narvik. The guide book 'Rock Climbs in Arctic Norway' describes the area as one of the most isolated mountain ranges in Arctic Norway. It consists of a long ridge with many peaks, adjoining the Storstein glacier. To the west of it lies Kuinarccokka, which is another interesting mountain, whilst to the south is the Ippočokka-Ippvarre group. The rock is granite, the rock faces are very steep and climbing is good. Although there is still unfinished work of an Alpine character, there are very few peaks left which could prove to be first ascents. Jack Ramsden and his party visited the area in the early summer of 1956 and made about fourteen first ascents, mostly around the Ippočokka-Ippvarre group, which, he considers, may well have been the last big area of unclimbed peaks.

The journey by bus and ferry up the beautiful Skjomen fjord and Skjomen valley was a memorable one (figs. 8 & 9). Frostisen, a peculiar glacier of 37 square kilometres, 3500 feet above sea-level, lay on our right as we chugged up the fjord in perfect weather. On our left were the long series of vertical granite slabs of Kongbakkstind and Samnestind. Having transferred from the ferry to the bus, we travelled a winding dusty track along the bottom of the narrow valley, passing on either side very small farms which suffice to maintain the people during the long winters. These small farms and houses, with their
green and carefully tended fields, were never situated far
from the fast flowing glacial river, from which, during
the summer, the men fish at all hours of the night and day.
Towering above us, on both sides, were long, steep, glacier-
jagged summits of Storsteinsfjell. From the sea, thirty miles
worn slabs, down which gushed streams from the retreating
glaciers, like rivers of cotton wool, to form a silent slowly shifting
sea of snow which gradually broke in huge waves over the mountain
we travelled at night while establishing our new base-camp,
Nordelen. This was a bad case for the coming weather; for
six miles away at the head of Nordalen, a valley opening out
from the end of Skjomdalene (map 4). After three days of arduous
trips with heavy loads over very steep and wild ground we finally
occupied our base camp on 29th July. This base was sited at
an altitude of 1600 feet by the side of the river Nordelva
and was decided to climb one year at the head of the snow-field.
(fig. 10), where the valley flattened out in its upper reaches;
in front there we could still see no break in the weather, we
thus it was a convenient base to support high camps in the
area to return to base and take stores up to the other side of
Ippočokka-Ippoverre group, Kuinarčokka and Storsteinsfjell.
The valley for a week’s climbing in Storsteinsfjell. And so,
Two days later, we had consolidated this camp, sorted
out provisions for a week and moved up onto the Unnarvepsvarre
matt had turned into rain, leaving the tent to face the elements
snowfield (fig. 11), hoping to climb as many peaks as possible
alone in the Ippočokka-Ippoverre group.

Whilst Gork descended into Skjomdalene to obtain more
paraffin and tobacco, Paske and Baxter placed a food-cache just
established as before with a base camp and a top camp, this time
below Kuinarčokka. During the night the clouds lifted, and
in the Storsteinsfjell Massif. Hodgson’s accident had thus caused
for the first time in five days we once more had a view of the
a fortnight’s delay.
lower slopes of the surrounding hills. This encouraged us to
We reached our new top camp, at an altitude of 4000 feet, at the end of a long hot day (fig. 12). The sunset that night formed a fiery glowing backcloth to the black silhouette the jagged summits of Storsteinfjell. From the sea, thirty miles away, low cloud and mist was creeping up the fjords and valleys, like rivers of cotton wool, to form a silent slowly shifting sea of cloud which gradually broke in huge waves over the mountain ridges. This was a bad omen for the coming weather; for by the morning, our tent was shut in by dense mist and intermittent rain, which stayed with us for the following eight days. Many times we ventured out from our tent, but did not get far. After having spent a day and a half in our two-man tent, the three of us decided to climb a small peak at the head of the snow-field. If from there we could still see no break in the weather, we were to return to base and take stores up to the other side of the valley for a week's climbing in Storsteinfjell. And so, finding no break in the cloud, we went down to base, where the mist had turned into rain, leaving the tent to face the elements alone.

Whilst Gorb descended into Skjomdalen to obtain more paraffin and tobacco, Fawkes and Baxter placed a food-cache just below Kuinarokka. During the night the clouds lifted, and for the first time in five days we once more had a view of the lower slopes of the surrounding hills. This encouraged us to
move back to our high camp. The weather improved a little and we managed to climb Ippovarre, 5000 feet (fig. 13), and a small peak of 1367 metres, just north of Ippočokka. Ippovarre is believed to have been climbed for the first time in 1956, so we were just a year too late to 'bag' a first ascent. Our route lay up the north face of the mountain, just to the right of a large overhanging buttress, then onto the ridge and so up to the summit. The ridge was a fine, sporting one but without real difficulty whereas the climb up the ridge was mainly a scramble over rather rotten rock. Peak 1367 metres was attained by a hard scramble and we could find no cairn on top and, as we are unable to find records of this peak, this may well be a first ascent.

After our two reasonable days, the sun declined to appear again and as the thick mist seemed to be back for some time, we struck camp and moved back from the Ippočokka-Ippovarre group (fig. 15) to our base-camp down in the valley. After two days in base, the weather had not improved, so Gorb and Baxter set out to walk to Narvik, 25 miles away. We had to walk, apart from the ferry, because funds were low. As it was we got to within three miles of Narvik but, being unsure of our position, we caught a bus for the remaining distance. Hodgson was much better, although still having a little trouble with his stomach. His parents had arrived for a week in Narvik so as to be near him and had been lent a house by a Norwegian Army Officer, Kapt. Ludvik
Smaaskjaer, and his Scottish wife. These two people had been visiting Hodgson while we were away and we ourselves were subsequently treated very hospitably by them. As it was, we stayed overnight in their house, had a wonderful bath, visited our tent containing the excess equipment and food, paid another visit to Hodgson and returned to Skjomen by bus. A curious incident came to light in Narvik, which later was found to tie up with things that had been happening, unknown to us, while we were climbing in Storsteinfjell. All our kitbags, left behind in Narvik, had been opened and rather clumsily tied up again. Five or six dozen bars of chocolate were missing, which we put down to local children, and our personal kit-bags were refilled again, partly with macaroni and oats.

On our return to base in Nordalen, with more supplies of sugar, the weather showed signs of improving and we were prompted to move further into the Storsteinfjell Massif with a week's stores. It was August 15th and during our last week we intended to explore as much as possible around Kuinarçokka and Storsteinfjell. With light packs and the weather once more fine, the journey was easy going, and we were able to fully appreciate our first sight of Kuinarçokka, 5000 feet, in its entirety, nursing its glacier over a thousand feet above us (fig. 16). We pitched camp at the foot of the mountain, quite near to a camp belonging to an Oxford University Expedition, one of whose members joined us at dinner that night. Kuinarçokka
right kept us on our toes. By luck, in the darkness, we
provided us with our best rock climb as well as some interesting
snow and ice work. Our route onto the mountain lay through
the ice-fall which descended from two arms of the mountain to
the south east (fig. 17). After first ascending glacier-worn
slabs through numerous small waterfalls, we passed over the
for the first time only the previous year. It afforded magnificent
for glacier snout and thence up into the ice-fall, until brought
all-round views (fig. 21), and particularly of our next day's
objective, the five mile long wide ridge stretching from
feet in height. Suddenly two rending thuds broke the silence
and a long crack appeared in an ice-block towering above us.

Silently and quickly we retraced our steps down the glacier
and to the ridge on our right. Here we were repulsed again,
reached the bench and on the ridge by 5 a.m. The ridge
this time by overhangs, so we trudged across the glacier,
and we found definitely the serpent considerably by 6 a.m.,
above the ice-fall, to the foot of a short steep ridge running
after a streamless scramble we reached the ridge and to north east. It was six o'clock before we stepped onto this
ridge, the sun was already setting towards the horizon and
reached high at 10.30 a.m. after an 18 mile march, we tasted
cold wind started to blow in from the sea. We took a chance
but happy that had had the opportunity of cutting a few
on whether we would be able to find an easy way off the mountain
stairs. For we believe that with was the first traverse of
in the dark, and reached the top of the main summit a little
on this ridge. The average level of the ridge was 4500 feet and
over two hours later (fig. 18). The last few pitches were
reddish rays of the sun lighting up the complete Storsteinfjell

In order to climb the rest of the Storsteinfjell
range was very beautiful. The 800 foot climb had been most
mountains we placed a camp further in, at the head of a small
exhilarating; one or two of the pitches were mild severe
glaciers, called 'Koble' glacier by the Oxford University Expedition
standard and a cold wind and a sheer drop of 1500 feet to our
which had been surveying it. However, the tent was pitched in
right kept us on our toes. By luck, in the darkness, we found the only easy way off the mountain first time.

The excellent weather continued to hold and we made the most of it with a good scramble along the ridge Nittedalstind, just west of Kuinarvik. Again, this mountain was climbed for the first time only the previous year. It afforded magnificent all-round views (fig. 21), and particularly of our next day's objective, the five mile long high level ridge stretching from Iversdalstjell to Stornesk (fig. 19 & 20).

Next day, we were away by 8 a.m. and, after a hard walk through boulder strewn valleys and up a steep snow slope, we reached the north end of the ridge by 1 p.m. The ridge was very broad initially but narrowed considerably. By 6.30 p.m., after a strenuous scramble, we had reached the other end. Now climbing was necessary apart from an 80 foot slab. We finally reached camp at 10.30 p.m., after an 18 mile march, exhausted but happy that we had had the opportunity of building a few cairns, for we believe that ours was the first traverse of this ridge. The average level of the ridge was 4300 feet and it had afforded magnificent views, on the one side into Storsteinstjell and on the other into Skjomen and its blue fjord.

In order to climb the rest of the Storsteinstjell mountains we placed a camp further in, at the head of a small glacier, called 'Keble' glacier by the Oxford University Expedition which had been surveying it. However, the tent was pitched in
blinding sleet and snow and the blizzard continued for the next two days, covering our tent which was lashed down with ice-axes and rope, with a drift of snow. It was now time to return to Narvik, and we left this camp without even having put our heads outside the tent-flap, except for necessities.

Having struck our base-camp and carrying large packs and heavy reindeer antlers we strode down Nordalen, in fine weather again, but with a feeling of regret that we had to leave Storsteinfjell itself, now covered in its first blanket of winter snow, largely unexplored.

Upon arrival back in Narvik, we found, to our astonishment, that there had been a hue and cry after us for three weeks; we had been reported missing when our unattended tent outside Narvik was found by the police and searched. This explained why, at our last visit to Narvik, we had found that all our kit-bags had been opened. The loss of our chocolate remains unexplained. An interview with the Police Constable of Narvik explained what had happened. He had given the information that we were missing to the Reuter news agency and reports had appeared in all the big Oslo newspapers and some of the London papers causing unnecessary concern to our families and the College. Although we had not given information as to our future whereabouts to the police when we originally left Narvik, the British Vice-Consul, who had given us advice on where to climb, knew of our plans and Hodgson, in hospital, knew exactly where we were.
Hodgson was now progressing exceptionally well. He had the cast off his left leg, after only five weeks, and his right one was not likely to need an operation after all.

One of our last three days in Narvik was reserved to climb Rombakstøtta, Narvik’s Matterhorn, rising east of the town on to the Narvik peninsula, a silent witness to the famous Narvik battle in 1941.

Kapt. Smaaskjaer and his wife again showed us great hospitality. We each had a glorious bath, meals and two bottles of Brennwein to send us on our homeward journey.

So ended our expedition; it did not go exactly according to plan, but it was nevertheless interesting, exciting and unforgettable.

The highest mountain in the area, Kirkestind, was climbed twice in very wet snow; so was Haddenippa. Neither mountain had such to reclassify it, and it was apparent from these summits that the surrounding mountains could offer very little more. However, 20 miles away, in a north westerly direction, lay a group of mountains called Istdind. These appeared to be far more interesting but, unfortunately, we were not able to explore them. They are quite close to a main highway, so that it is unlikely that they would prove to be first ascents, but new routes could be guaranteed.

Aurasteinfjell and its adjacent mountains have been
MOUNTAINEERING NOTES

described in the account of the expedition, is already

Of the two districts the expedition visited, Storsteinfjell was by far the more interesting from a mountaineering point of view. Altevatn, although its mountains were thought to be unclimbed, was found to be quite well populated. The weather was in progress with the necessary construction camp and we were able to explore only the more accessible area as a gunnery range. The lake, according to a local game-keeper, was a summer retreat for fishermen and certainly there were a number of huts on the shore and one or two rowing boats being used for fishing. The mountains although quite high were rounded humps, and the little rock that looked climbable was unsound.

The highest mountain in the area, Kirkestind, was climbed twice in very wet snow; so was Maddanippa. Neither mountain had much to recommend it, and, it was apparent from these summits that the surrounding mountains could offer very little more. However, 20 miles away, in a north westerly direction, lay a group of mountains called Istind. These appeared to be far more interesting but, unfortunately, we were not able to explore them. They are quite close to a main highway, so that it is unlikely that they would prove to be first ascents, but new routes could be guaranteed.

Storsteinfjell and its adjacent mountains have been
described in the account of the expedition. As already stated there is much fine rock and the potentialities for new routes will last for years. Unfortunately, just recently the last of the virgin peaks have been ascended and it may well be that this range was the last big area of unclimbed mountains in Norway. The weather we experienced there was bad and we were able to explore only the more accessible mountains. These included Kuinarckoka, one of the highest, and the five mile Stortind ridge, of which we may have made the first traverse.

As a stop-gap, Stormsaas was chosen as a suitable area for us to explore: it was, incidentally, a very good one. The mountaineering exploration was continued irrespective of the weather permitted, but work with the photo-theodolite was abandoned because we were now reduced to three people and had only three suits at our disposal. In any case it was known that the area had been explored and climbed, and as it turned out, the weather would have been an insurmountable obstacle.

In all, eight mountains were climbed and a long ridge traversed, entailing many miles of valley walking.

Not the least valuable part of an expedition lies in the experience of organisation which it entails. All of us have experienced to some extent one of the most acute problems
CONCLUSION

Achieved its purpose, which was principally mountaineering.

It is pertinent to consider whether the expedition

exploration with, secondly, the recording of photographs

with a photo-theodolite in case a map should be needed by

a future expedition to the area.

It was very unfortunate that an accident occurred

so early on, depriving us of one of our number and causing

a disruption of the work of the expedition in Altevatn.

As a stop-gap, Storstein was chosen as a suitable area for

us to explore: it was, incidentally, a very good one.

The mountaineering exploration was continued insofar as the

weather permitted, but work with the photo-theodolite was

abandoned because we were now reduced to three people and

had only three weeks at our disposal. In any case it was

known that the area had been explored and climbed; and

as it turned out, the weather would have been an insurmountable

obstacle.

In all, eight mountains were climbed and a long

ridge traversed, entailing many miles of valley walking.

Not the least valuable part of an expedition lies

in the experience of organisation which it entails. All of

us have experienced to some extent one of the most acute problems
of making an expedition "work"; the problem of preserving
harmony among the members of a party. We have broadened
our experience of the outside world; we have seen part
of another country, another sector of the human race and
how it lived - the small crofts of Skjomdalen, the expanding
town of Narvik, and the sophisticated capital of Sweden.

<table>
<thead>
<tr>
<th>Item</th>
<th>Vitamin</th>
<th>Protein</th>
<th>Carbohydrates</th>
<th>Fat</th>
<th>Ash</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ora</td>
<td>31.4 I.U.</td>
<td>2.1 g</td>
<td>3.4 g</td>
<td>1.4 g</td>
<td>2.5 g</td>
</tr>
<tr>
<td>Mincola</td>
<td>27.0 I.U.</td>
<td>1.4 g</td>
<td>2.0 g</td>
<td>1.0 g</td>
<td>1.1 g</td>
</tr>
<tr>
<td>Marmalade</td>
<td>24.0 I.U.</td>
<td>1.1 g</td>
<td>2.2 g</td>
<td>1.1 g</td>
<td>0.9 g</td>
</tr>
<tr>
<td>Chocolate</td>
<td>163</td>
<td>4.6 g</td>
<td>7.8 g</td>
<td>5.4 g</td>
<td>3.7 g</td>
</tr>
<tr>
<td>Sugar</td>
<td>102</td>
<td>3.5 g</td>
<td>6.2 g</td>
<td>7.5 g</td>
<td>3.2 g</td>
</tr>
<tr>
<td>Syrup</td>
<td>81</td>
<td>4.0 g</td>
<td>5.6 g</td>
<td>6.9 g</td>
<td>2.2 g</td>
</tr>
<tr>
<td>Milk</td>
<td>124</td>
<td>1.2 g</td>
<td>17.2 g</td>
<td>12.0 g</td>
<td>6.6 g</td>
</tr>
<tr>
<td>Cream</td>
<td>124</td>
<td>0.5 g</td>
<td>6.5 g</td>
<td>5.1 g</td>
<td>3.2 g</td>
</tr>
<tr>
<td>Cheese</td>
<td>147</td>
<td>2.6 g</td>
<td>23.2 g</td>
<td>14.5 g</td>
<td>2.5 g</td>
</tr>
<tr>
<td>Dried Milk</td>
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<td>1.4 g</td>
<td>25.8 g</td>
<td>10.3 g</td>
<td>7.0 g</td>
</tr>
<tr>
<td>Tofu</td>
<td>80</td>
<td>0.9 g</td>
<td>3.1 g</td>
<td>1.0 g</td>
<td>3.1 g</td>
</tr>
<tr>
<td>Dehydrated Meat</td>
<td>89</td>
<td>0.7 g</td>
<td>1.0 g</td>
<td>5.6 g</td>
<td>10.0 g</td>
</tr>
<tr>
<td>Oatmeal</td>
<td>38</td>
<td>2.4 g</td>
<td>20.4 g</td>
<td>8.4 g</td>
<td>2.8 g</td>
</tr>
<tr>
<td>Jam</td>
<td>71</td>
<td>1.3 g</td>
<td>10.7 g</td>
<td>2.15 g</td>
<td>2.8 g</td>
</tr>
<tr>
<td>Yeast</td>
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<td>1.4 g</td>
<td>175 g</td>
<td>0.15 g</td>
<td>3.1 g</td>
</tr>
<tr>
<td>Jell</td>
<td>1/3 pkt</td>
<td>2.5 g</td>
<td>1.8 g</td>
<td>0.5 g</td>
<td>0.5 g</td>
</tr>
<tr>
<td>Coffee</td>
<td>1/3 pkt</td>
<td>1.5 g</td>
<td>2.5 g</td>
<td>0.5 g</td>
<td>0.5 g</td>
</tr>
<tr>
<td>Soup (pkt)</td>
<td>160</td>
<td>1.5 g</td>
<td>150 g</td>
<td>0.5 g</td>
<td>0.5 g</td>
</tr>
<tr>
<td>Fruit juice powder</td>
<td>126</td>
<td>0.3 g</td>
<td>12 g</td>
<td>1.1 g</td>
<td>4.9 g</td>
</tr>
</tbody>
</table>

Total: 465.I

Certain items, for instance Special Bar, Nation HF/3, were kept for emergency purposes only, whilst other items, which were not used, have not been included in this list.

The quantities in the table give the amounts of each food actually consumed. In point of fact the amount of food actually taken, 500 lb, was considerably in excess of the amounts indicated, due to our numbers being reduced early on during the expedition.
The food consumed by the expedition is indicated in the following table:

<table>
<thead>
<tr>
<th>Item</th>
<th>Calories / oz</th>
<th>Calories / man day</th>
<th>Protein</th>
<th>Fat</th>
<th>Carbohydrate</th>
<th>Vitamin</th>
<th>Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oats</td>
<td>111</td>
<td>2.3</td>
<td>256</td>
<td>5.2g</td>
<td>3.8g</td>
<td>28.5g</td>
<td>.31 I.U.</td>
</tr>
<tr>
<td>Biscuits</td>
<td>116</td>
<td>7.7</td>
<td>893</td>
<td>4.1</td>
<td>2.9</td>
<td>29.1</td>
<td>.20 m.g.</td>
</tr>
<tr>
<td>Margarine</td>
<td>218</td>
<td>2.2</td>
<td>480</td>
<td>-</td>
<td>26.5</td>
<td>-</td>
<td>495.0 I.U.</td>
</tr>
<tr>
<td>Chocolate</td>
<td>163</td>
<td>4.6</td>
<td>773</td>
<td>7.7</td>
<td>54.4</td>
<td>87.4</td>
<td>11.0 I.U.</td>
</tr>
<tr>
<td>Sugar</td>
<td>108</td>
<td>3.5</td>
<td>378</td>
<td>-</td>
<td>-</td>
<td>47.3</td>
<td>-</td>
</tr>
<tr>
<td>Syrup</td>
<td>81</td>
<td>1.6</td>
<td>130</td>
<td>0.16</td>
<td>-</td>
<td>32.3</td>
<td>-</td>
</tr>
<tr>
<td>Milo</td>
<td>124</td>
<td>1.2</td>
<td>149</td>
<td>16.3</td>
<td>13.0</td>
<td>81.6</td>
<td>.54 m.g.</td>
</tr>
<tr>
<td>Horlicks</td>
<td>124</td>
<td>0.5</td>
<td>62</td>
<td>5.8</td>
<td>7.3</td>
<td>8.9</td>
<td>14 I.U.</td>
</tr>
<tr>
<td>Cheese</td>
<td>117</td>
<td>2.5</td>
<td>292</td>
<td>7.1</td>
<td>9.8</td>
<td>-</td>
<td>380 I.U.</td>
</tr>
<tr>
<td>Dried Milk</td>
<td>138</td>
<td>1.8</td>
<td>243</td>
<td>10.8</td>
<td>11.0</td>
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<td>432 I.U.</td>
</tr>
<tr>
<td>Macaroni</td>
<td>90</td>
<td>0.9</td>
<td>81</td>
<td>1.6</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Dehydrated Meat</td>
<td>89</td>
<td>0.7</td>
<td>150</td>
<td>3.0</td>
<td>5.6</td>
<td>10.0</td>
<td>10 I.U.</td>
</tr>
<tr>
<td>Dehydrated</td>
<td>Vegetable</td>
<td>85</td>
<td>204</td>
<td>8.4</td>
<td>-</td>
<td>26.6</td>
<td>22.8 I.U.</td>
</tr>
<tr>
<td>Jam</td>
<td>71</td>
<td>1.5</td>
<td>107</td>
<td>0.15</td>
<td>-</td>
<td>26.4</td>
<td>3.0 I.U.</td>
</tr>
<tr>
<td>Kendal Mintcake</td>
<td>125</td>
<td>1.4</td>
<td>175</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Salt</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Coffee</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Soup (pkt)</td>
<td>90</td>
<td>1/3 pkt</td>
<td>30</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Special bar</td>
<td>ration HF/5</td>
<td>160</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Fruit nut bars</td>
<td>100</td>
<td>1.5</td>
<td>150</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Lemonade powder</td>
<td>-</td>
<td>1.13</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Nut Pemmican</td>
<td>176</td>
<td>0.3</td>
<td>53</td>
<td>1.1g</td>
<td>4.9g</td>
<td>1.1g</td>
<td>-</td>
</tr>
</tbody>
</table>

Total: 4651

Certain items, for instance Special Bar Ration HF/5, were kept for emergency purposes only, whilst other items, which were not used, have not been included in this list.

The quantities in the table give the amounts of each food actually consumed. In point of fact the amount of food actually taken, 500 lb, was considerably in excess of the amounts indicated, due to our numbers being reduced early on during the expedition.
The following firms supplied food free of charge:-

Anglo-Swiss Food Products Ltd.  | Soup
Bovril Ltd.  | Breakfast Cereal
Cerebos Ltd.  | Pemmican
Glaxo Laboratories Ltd.  | Salt
Huntley and Palmers Ltd.  | Dried Milk
Horlicks Ltd.  | Canned Rich Cake
Kavli Ltd.  | Horlicks and Special Bar Ration
Nestle Co. Ltd.  | Prime Spare Ration
Quaker Oats Ltd.  | HF/5
Robert Wiper  | Cheese
Scott and Bowne  | Milo and Nescafe
Tate and Lyle Ltd.  | Oats and Macaroni
Wm. P. Hartley Ltd.  | Kendal Mintcake
Transport  | Vitamin Tablets

In addition the Ministry of Food supplied dehydrated vegetables free of charge.

The following firms supplied food at reduced prices:-

Cadbury Bros. Ltd.  | Chocolate
Carr & Co. Ltd.  | Life-boat Ration Biscuits
Reckitt & Colman Ltd.  | Instant Potato and Lemonade

Mapleton's Nut Food Co. Ltd.  | Fruit-nut bars and Nut
Van den Berghs Ltd.  | Pemmican

In addition the Ministry of Food supplied dehydrated meat at cost price. Philip Morris & Co. Ltd. and W.D. & H.O. Wills supplied cigarettes free of charge.

Core Ltd. supplied personal clothing at much reduced prices.

Various firms required reports on their products, but the most interesting part of our diet was the dehydrated meat and vegetables supplied by the Ministry of Food. These were cooked in a pressure cooker and formed a substantial part of our daily rations. A report on our experiences with these foods has been forwarded to the Ministry of Food.
APPENDIX 2 - Equipment

Camping: -
2 Meade Tents
4 Sleeping Bags
1 Greenland Pyramid Tent
4 Air-beds

Cooking: -
2 one pint Primus stoves
1 half pint Primus stove
1 Rover Canteen
1 Set of Billies
1 Pressure Cooker
1 Small Canteen
2 Water Buckets
1 Can opener
Primus Spares
Funnel

Climbing: -
2 Full Weight Nylon Ropes
1 Three-quarter weight Nylon Rope
100 ft. Nylon Line
12 Kit-bags
Pitons
1 Piton Hammer
5 Karabiners

Transport:
4 Pack-frames

Sundries: -
Fuel-cans
Candle Lanterns
Candles
Air Bed Pump
Puncture Repair Outfit
Ball of String
Insect Repellant
Matches
Polythene Bottles
Polythene Bags
Tent Fabric
Tent Repair Outfit

The surveying equipment, for the loan of which we are indebted to the Royal Geographical Society, consisted of:-

1 Camera and Tripod
2 Prismatic Compasses
2 Altimeters

Cora Ltd. supplied personal clothing at much reduced prices, for which we are very grateful.
APPENDIX 3 - Summary of Expenditure

<table>
<thead>
<tr>
<th></th>
<th>Receipts</th>
<th>Payments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>£ s d</td>
<td>£ s d</td>
</tr>
<tr>
<td>Donation from Imperial College Exploration Board</td>
<td>55 0 0</td>
<td></td>
</tr>
<tr>
<td>Donation from the Goldsmiths' Co.</td>
<td>50 0 0</td>
<td></td>
</tr>
<tr>
<td>Personal Contributions @ £25 per member</td>
<td>100 0 0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>205 0 0</td>
<td></td>
</tr>
<tr>
<td>Fares</td>
<td>122 9 4</td>
<td></td>
</tr>
<tr>
<td>Food</td>
<td>24 13 1</td>
<td></td>
</tr>
<tr>
<td>Equipment</td>
<td>17 7 0</td>
<td></td>
</tr>
<tr>
<td>Photography</td>
<td>7 6 11</td>
<td></td>
</tr>
<tr>
<td>Maps</td>
<td>1 5 6</td>
<td></td>
</tr>
<tr>
<td>Postage &amp; Stationery</td>
<td>1 11 7</td>
<td></td>
</tr>
<tr>
<td>Additional travel in Norway</td>
<td>13 0 0</td>
<td></td>
</tr>
<tr>
<td>Sundries</td>
<td>2 5 11</td>
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<td>194 18 6</td>
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<td>Insurance</td>
<td>5 0 0</td>
<td></td>
</tr>
<tr>
<td>Credit</td>
<td>5 1 6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>205 0 0</td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX 4 – Acknowledgements

Primarily our thanks must go to the College Exploration Board and the Goldsmiths’ Company for their financial assistance in the Expedition. We are most grateful.

The College Supplies Department were of great assistance in the organizing of the expedition.

Individual members of the Exploration Board were very helpful and gave us much valuable advice.

We would like also to acknowledge the assistance provided by the firms listed on pages 9 and 10. For the loan of surveying equipment we are indebted to the Royal Geographical Society.

Our sincerest gratitude we extend to all those who were involved in the accident, especially Jorunn Lysbakken, the nurse; Aage Irgens, the leader of the rescue party; Borg Junnson, the surgeon at Narvik Hospital; and Kapt. Ludvik Smaaskjaer and his wife who gave us the warmest hospitality.
Map 1. Showing Journey from Gothenburg to Narvik.
Map 2. Showing the relationship between Athwatis, Storstainsjell and Narvik.
Scale: 1 : 1,000,000.
3. Sketch map showing the area north of Altevatn.
Scale: 1:200,000
Fig. 1. Arrival in Stockholm.

Fig. 2. Living off the Land.
Fig. 3. The West End of Altvatn.

Fig. 4. From the Summit of Kirkhestad, looking to the East.
Fig. 5. Hodgeson and Nurse Lyebakken

Fig. 6. The Rescue Party
Fig. 7  A Difficult Crossing.

Fig. 8  Skjomen
Fig. 9 Skjomdalen.

Fig. 10 Base at Nordalen
Fig. 11  Ippočokka-Ippovarre Group.

Fig. 12  Ilpočokka from Camp I.
Fig. 13 Ippovarre from Camp I

Fig. 14 Cwm between Ippocokka and Peak 1367m.
Fig. 15. Kuinarčokka.

Fig. 16. Kuinarčokka from Löšivatn.
Fig. 17 Ice-fall on Kuinarčokka

Fig. 18 South-east ridge of Kuinarčokka from summit.
Fig. 19. Stortind from Nikkižokka.

Fig. 20. Stortind Ridge from Nikkižokka.
Fig. 21. ‘Sleeping Queen’ from Nikkizokka.

Fig. 22. On the Summit of Rombakstotta.
Fig. 23. Storsteinsfjell Massif from Kumarkokka

Fig. 24. Rombakstötta