

SPITSBERGEN 1960

D I A R Y O F J O H N F R A S E R

PREFACE

John Fraser graduated in Civil Engineering at Edinburgh University in 1957, after which he worked for two years with Messrs. Mott, Hay & Anderson. In 1959 he left his post as an Assistant Engineer on the Forth Road Bridge to do Research at Imperial College. His enthusiasm for an outdoor life was quickly manifest and during his first summer vacation here he took part in an expedition to Spitzbergen. In an article he wrote for the Imperial College Exploration Review in February 1961 he described its beginnings:-

"About nine months ago, four members of this College found themselves in possession of a considerable pile of camping and climbing gear, enough food to keep one man alive for the best part of a year, the loan of several surveying instruments, a bank-balance of some hundreds of pounds - all the wherewithal in fact for an expedition to Jan Mayen Island - but, suddenly, without any means of actually getting there. Two courses of action presented themselves in this dilemma: we could seek Alternative transport to Jan Mayen, or we could try re-routing the expedition somewhere else. The third course of inaction was, mathematically speaking, the trivial solution.

So, while persevering in the attempt to get to Jan Mayen, we also began to think of going to Spitzbergen, or Svalbard as the Norwegians call it. What could we usefully do there? There was no time to plan a programme of glaciological work there, such as we had hoped to carry out in Jan Mayen. Careful planning, involving reference to previous work, is an essential pre-requisite to glaciological research. However we were told by Mr. W.B. Harland of Cambridge that there was a

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piece of work as yet undone in Spitzbergen, which involved land surveying. When he explained what it was, it seemed just the sort of well defined problem which we could most usefully tackle at this short notice: the triangulation of a peninsula in Vestspitsbergen, the peninsula of Dicksonland.

Thus it was that instead of seeing the huge white cone of the Beerenberg loom over the horizon ahead, it was the long grey coast of Svalbard that greeted us "

The insight into John's personality afforded by his diary of the Spitzbergen Expedition is a lasting reminder of the great loss we suffered when he was tragically lost on June 25th, 1961, in an inshore accident at Jan Mayen Island while on the University of London Beerenberg Expedition. Among the four others who perished were Peter and Martin, two of his companions on this Spitzbergen Expedition.

We are most grateful to his parents, Mr. and Mrs. T. Fraser, for permission to reproduce the diary.

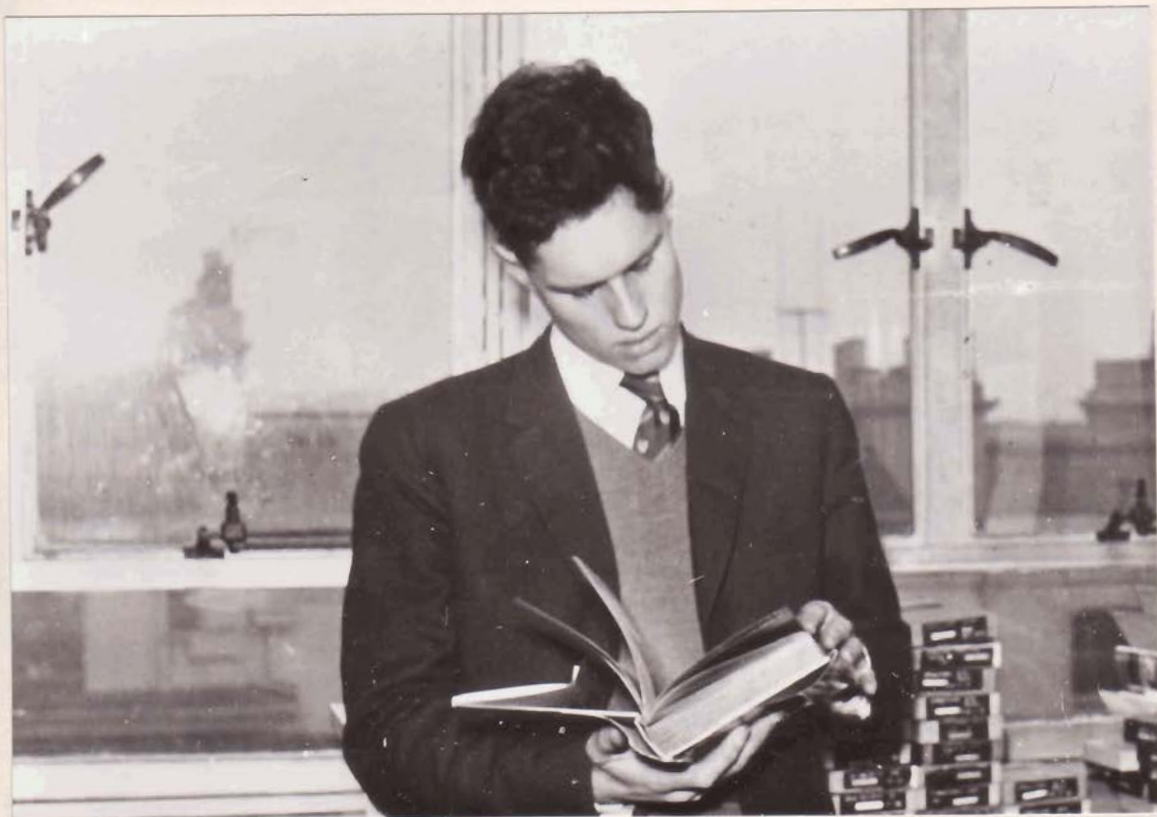
**Extract from letter written by John Fraser to his parents
on 13th June, 1961, while on his way to Jan Meyen off
which island he was lost on Sunday, 25th June, 1961.**

"Pete and I left Inverness Harbour in the pilot's launch and went on board when the pilot came off, just off Fort George. I woke the next day in time to see the Orkneys. Fair Isle was just visible to the north, and it took all day to leave it down on the southern horizon, by which time we were running past Shetland. Conditions were very good—sun, blue water and not too rough. Sunbathing parties were held at various sheltered spots around the deck.

"I have a bunk in a cabin amidships, which is noisy but steadier than the fo'c'sle where some of the others are. There is a tiny messroom under the bridge where nine of us can squash in and eat, listen to the B.B.C. or to Dave Thomas's stories of the Caucasus, etc. The tenth member is an unfortunate who is permanently sea-sick. The crew say that they have rarely known these seas to be so calm. There are about seven of them, only one of whom speaks reasonable English. This one is a young student, working in the summer. However we manage to communicate with the others in English, German and signs.

"Yesterday the trip seemed more like a Mediterranean cruise than an Arctic expedition. We were sitting in the sun until supper-time at eight o'clock. I have now finished most of my sewing jobs but have discovered some darning which needs doing. My pocket on the anarak is now the envy of all. One thing that struck me yesterday was the way in which we could see the sky right down to the horizon—something very unusual on land, with hills, buildings and trees to clutter the place up. I imagine it is also unusual at sea to get visibility good enough for this.

"At sunset, Martin was telling us about a green flash, visible for half a second just after the sun vanishes under the horizon. So the bridge was crammed with eager photographers, who gazed intently at the sun as it dipped, very, very slowly. They were unrewarded."



John Fraser at work in the
Civil Engineering Department at Imperial College



Dicksonfjord - looking S.W. from Ganger Rolf

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D I A R Y O F J O H N F R A S E R

Monday, 4th July

Final preparations were made, rushing round Imperial College at high speed and a hasty departure taken at 1.15 p.m. Geoff and I travelled north on Kavli's lorry with the equipment while Pete went by train via his home. Trundling northwards at a steady 30 - 40 m.p.h. we made Bawtry by 7 o'clock and looked round for digs. Eventually we arranged digs for the driver while we slept in the lorry, to test our air beds, save money and save the trouble of finding digs to take three. After a convivial evening with the driver we climbed into bed, tied the door back as he had instructed in case the police came by, and were out till morning.

Tuesday, 5th July

An uneventful run to Newcastle where Charlie the driver gave us tea at his place before going on to the quay. He was four months married and seemed to be thriving on it. We were looking round the quay for Pete when we met for the first time a still rather damp Martin, soaked by the Newcastle drizzle. First now we wanted to find someone to inform of our arrival and we saw various individuals about this who began to organise the unloading. A gang of dockers arrived and clustered round our truck and enquired if our kit was going as cargo. We said "Yes", but they said "Well they thought it would be accompanied luggage and if so they certainly couldn't touch it. That was the baggage men's job." Pete said "All right, shall we unload it ourselves?", and they said "Oh no, someone has gone to check up and make sure it is cargo and then we'll do it." He was quite offended at this improper suggestion of Pete's. Sure enough when the man came back

and reassured them that our stuff was indeed cargo they did unload it - only to finish by warning us that the Venus never took cargo on Wednesdays. To this we could only say that this was some cargo she would take. After all this, we went off in the lorry to the YMCA at North Shields where we spent the night.

Wednesday, 6th July

Up early and off to Newcastle, making the final preparations before meeting Martin and joining the airport 'bus. Before takeoff the 'plane's loud-speaker system furnished various details of the 'plane and the flight and then we were off, cutting steeply upwards through the grey cloud bank blanket which turned white as we rose, and then silver, as we broke through into the dazzling sunshine above the clouds. Lunch at this altitude was an unusual treat, even if it did keep sliding back towards one's lap. Afterwards we all had a good look at the maps and photos Pete had brought from Cambridge. When we reached Norway and looked down on the green patchwork of fields, dotted with white houses, my first impression was that there were no villages; the houses were scattered everywhere over the land. Later this week a Norwegian told us this was because the feudal system never reached Norway.

We touched down at Stavanger, but were soon off to Bergen, flying over many islands. It did not take long to pass through the airport and soon we were rolling along a Norwegian highway, past woods and rugged low hills. It didn't feel as foreign a country as France, partly because it was like Scotland in a way. Bergen was quite a long way and proved to be a fair size when we got there. When we got off the 'bus we hung around aimlessly for a few minutes, not sure quite how to set about getting to the Youth Hostel. Then a Norwegian came up and directed us and we walked through the town, past the quay to the funicular which takes you up to near the hostel. It is a nice building, set amongst trees and you can walk round the hill to see a superb view of the town. We

sat looking down on it after supper and talked of F.I.D.S. and ice-packs, ships and glaciers, till turning in, while the Northern sky was still quite light.

Thursday, 7th July

Down into Bergen by funicular. We had a little shopping to do and wandered about the town looking at the shops and the harbour and the buildings. Touristy, but nice. There was a great feeling of just waiting, and I felt anxious to get going on the next stage of our journey, and disinclined to investigate Bergen properly. The Venus arrived with our kit and we saw it transported to the Midnatsol. Eventually she began to fill with passengers and at long last at 10.15 p.m. we sailed. Then quickly below and to bunk.

Friday, 8th July

It was a beautiful morning as we sailed through the clear water past sunlit islands and with glimpses of snow mountains far to the east. Magnificent country to explore in a small boat, sailing from island to island and climbing hills here and there. We sat on the upper deck, feeding from our 'boat crate' on lifeboat biscuits, peanut butter and honey. We reached Alesund at 11.30 a.m. and while the others saw to the unloading of the equipment I sat baking on the quay guarding the rucksacks and writing postcards. Then we went off and had an expensive Norwegian lunch in a cafe overlooking the harbour, a lovely situation. For the remaining two hours we wandered round the town which is built on several interconnected islands. It is a beautiful place, especially on the waterfronts, which have lots of fascinating corners. The warehouses are built right down to the water, where the fishing boats chug around knocking out smoke-rings from their funnels with a metallic noise. All too soon we had to leave on the boat for Aandalsnes. This was another beautiful sail, between islands and

then twisting into the fjords towards high mountains. A Norwegian sitting beside us turned out to be a most interesting character. He was a historian, a headmaster of a school, and kept up a continual flow of interesting and informative conversation. We discussed education, literature, and Norway. At Molde I was impressed by the clean sweep of sea with flat wooded islands lying in front of a backdrop of blue mountains, exciting shapes. Some yachts were out sailing on it. We went on up the fjord towards Aandalsnes and Pete and I began to discuss the possibility of doing a climb if our boat were to be delayed. A peak rather like Tryfan attracted our attention. We didn't realise that these peaks were the famous Ronsdal and quite something, in the climbing way. The sky darkened as we got further up the fjord and the sun in the west gave a strange yellow light which emphasised the gloomy shadows in the hills and cast a pallid glow on the gathering clouds overhead.

Fantastic jagged ridges and soaring pinnacles appeared in the south, the aptly named Trolltind. A problem confronting us when we landed was how both to get to the Youth Hostel before closing time and also to unload our kit and find when the Svalbard boat was due to sail. Our Norwegian friend kindly offered us a lift to the Y.H. so we managed to find that the boat sailed at noon next day and see the kit into the shed before piling into a large American car, equipped only with sleeping bags and toothbrush. Our arrival in this luxurious means of transport caused quite a stir. The warden stood in the porch shaking each of us by the hand as he entered, before showing us to our room. It was a very nice modern timber building. We had a rather scrappy meal of Xmas pudding, tinned plums, Fruitarian cake and crispbread - the only food we had managed to snatch up at the pier. When he heard that our destination was Svalbard, one young German was openly scoffing at the idea of camping there - perhaps he thought our

Equipment was just what we had on us then. Wrote more postcards, then into bed.

Saturday, 9th July

We had hoped to catch the 'bus to Aandalsnes at 7.00 a.m. but, since we did not wake until a quarter past, we had to walk it. Our fuel supply was already on board, we found, so all we had to do was to transport the equipment from the shed to the ship. This we managed by borrowing a trolley from the railway station. But, once on the quay, by the ship, we foresaw that everything would have to be man-handled up the rickety gang-plank, along and down into the fo'c'sle. However, this difficulty was resolved by borrowing the grab which was unloading the coal from the hold, and this lifted everything up on deck, whence we stowed it down below.

Before the ship sailed, we had time to look round a bit. The mountains were most impressive and looked tremendously exciting, with mists drifting slowly entwined about the peaks. Even the lower hills looked wild and unexplored, somehow, with virgin forests covering their steep flanks. We sailed at 3.00 p.m., a final sort of departure, it seemed, somehow - more exciting when a ship sails than when a train leaves a station. Soon I climbed into my bunk for a rest. When I next went on deck, we were out in the open sea.

Sunday, 10th July

A grey day, punctuated by food, strolls on deck, work and reading. I finished off my post-cards and letters. We four were the only inhabitants of the lower deck, and we were able to spread out luxuriously in these Spartan surroundings. The strangeness of it all struck me; there we were, eating and writing and talking in perfect comfort, and we could have been



Martin, Geoff and Peter moving stores at Aandalsnes



The collier Ingerfern at Aandalsnes

anywhere. But there was Arctic sea rushing past, only ten feet away. Out on deck it all seemed more real, but not completely so.

For me, the late evening was enlivened by an argument between Pete and Geoff, which started when Pete said that Martin would never go further South than Fuchs, unless he flew over the South Pole. This made Geoff deny that you could possibly be further south than the Pole by flying over it. Soon they were at it hammer and tongs. They simplified the problem by "considering it as a thin lamina", agreed that, "mathematically speaking, south is negative north", introduced definitions galore of polar axes, sign conventions, and polar co-ordinates, only to scrap them as they were superseded by more advanced ("rigid") definitions. **Vector Analysis** was conjured up, to "resolve into two directions at right angles". "The motion of a body along a great circle of constant longitude."

By this time I was aching with suppressed laughter, but better was to come. "If I lie on my back in the equatorial plane, facing north, at the centre of the earth, this defines the direction of north..." "...but you have neglected the east-west parameters!" "If you say that, you should have no logical objection to an east pole and a west pole. **The whole point** precisely is that a point on an axis is more than just a point at that point in space." "Yes, but you must give it the correct rotational direction about that axis, as that axis is translated at the given velocity relative to datum." **The conclusion** reached by Pete was that if he flew over the South Pole he was south of it, and if he fell out of his 'plane, he fell north. Geoff was also south, but in his sad predicament he fell southwards. **At this** stage I was foolish enough to comment on the amusing aspect of this argument, by now forty-five minutes old. A mistake, since the two protagonists boiled up at this challenge, and I was engaged myself. Extrication was possible only by fleeing to bed.

Monday, 11th July

A day begun with hourly looks out of the port-hole in a vain attempt to see the Lofoten Islands. The day brightened as we came in to bunker at Harstad. Martin and I got a lift into the town where we paid Store Norske Spitzbergen Kulkompani 720 kr. for our passages, and had a look around. The Ingerfem came over to the main quay, and the others joined us. A bookshop and stationers supplied us, surprisingly, with a 1:500 metric scale, tracing and drawing paper, for use on survey work. It was very warm in the sun, and when it shone, the colours were lovely. It was yet another beautiful sail out past many islands, towards a sun which wouldn't set! One island had many fine peaks of a Scottish character, though one in particular had a west face too long and steep to look even slightly British.

At Harstad, we had embarked 40-odd more passengers on the lower deck, mostly miners, with a few women and children. Most of the miners were equipped with crates of Norwegian beer and numerous bottles of spirits, and, before the evening was old, had reached a state of extreme merriment. Though they were quite a hard lot, we were interested to see that none of them ever seemed to become aggressive, and they always remained quite friendly. We had an amusing time conversing with some of them, - I told them many weird tales of Scottish life and customs. One young electrician entered into a solemn discussion of the relative greatness of Churchill and Einstein, which we unfairly complicated for him by introducing Martin as Churchill's nephew. Eventually, to bed, only to be occasionally wakened by drunken noises off.

Tuesday, 12th July

I was getting tired of the Ingerfem by this time. Read, fed, strolled, wrote, fed, bed. Apart from an interlude at 8.00 p.m. when, through the medium of the top-deck steward, we listened to

the B.B.C. news through the loud-speaker on the bridge. The steward was an interesting character, a chief accountant in Bergen, who was doing this for a holiday.

Wednesday, 13th July

A day brightened by the prospect of getting to Svalbard and off the Ingerfem. Longyearben was reached at 9.00 p.m. after several hours sailing past the Spitzbergen coast, bleak low hills, snowfields and glaciers. At one stage we saw an iceberg, albeit a small scruffy one. Longyearbyen, what we could see of it, was a bit of a "hole"; coalmine with its aerial ropeways etc. and a shanty town scattered about nearby. On the quay we found the governor and Odd Skog, who was going to take us to Dickson Fjord in his boat that very evening. We unloaded our gear on to the quay and were informed by Odd that he couldn't possibly take it all in one trip, so we had to divide it into two lots, one, the essentials, and two, the not-immediately-needed. When everything was on board the launch was pretty low especially with three extra people on board whom Odd was taking along the coast a little way. Two of these were a rather drunken miner who sat in the forward cabin snogging with another dubious female. We got rid of them all at the eastern coaling station, where we picked up our own boat. At 12.00 midnight we set off for Dicksonfjord.

Thursday, 14th July

The water was oily calm as we chugged out into Isfjord heading straight for the southern tip of Dicksonland. First things first; we opened our now well-depleted boat crate and ate lifeboat biscuits with cheese and honey. It was a little unreal somehow when we were out in the middle of the fjord; the mountains never seemed to be getting any nearer and we chugged steadily over the glassy water for hours. Birds of all kinds were very numerous



Arrival at Longyearbyen



The Base Hut

and took little notice of us; their presence seemed oddly to emphasize our solitude. Inside the cabin we were entertained by Odd's flow of reminiscence, of Spitzbergen, the War, Britain.

We came off Dicksonland and ran up parallel to the west coast; steep, shattered, and scree covered slopes rose to cloud level. Away to the west lay an impressive array of rugged hills bearing glaciers of considerable size, and almost Alpine in appearance. Ten miles of water lay between us and them - or was it fifteen, or twenty? Odd was speaking of life in Longyearbjen, of the choirs they had, and the evening classes which were run during the long winter months. They were on good terms with the Russians mining coal in Spitzbergen and sometimes had exchange concerts with them.

At one spot on the coast we passed, the vegetation was luxuriant; this verdure was in contrast to the barren slopes on either side of this belt, perhaps 80 metres wide running up the hillside to about 100 metres. By now our voyage was becoming tedious; Martin somehow found a space in the cabin to lie down and was soon asleep, much to my envy. However it was necessary that we should have a good idea of the topography and navigational hazards of the fjord and I paid attention to them. Kapp Wyk with its two cabins was eventually rounded and we were on the last stretch. We had decided from the map to make our base camp near the delta of the Hugindalen and possibly at a trappers' hut just to the south of it. Now Odd said that though it would be impossible to land at the delta it would probably be O.K. at this hut. And so it proved. We came in very slowly and anchored 20 yards off the shore. All the gear had to be ferried across in the dinghies, a task not without difficulties until we got into the way of it. It was arranged that Odd would bring the rest of our equipment as soon as possible, and then he was off and we were

to pitch our tents and get into bed. It was 7.00 a.m. and I wouldn't be home till 11.00.

It seemed like a new day when we got up, sometime in the early afternoon, and set about organising ourselves. The hut consisted of an inner room, about 8' x 7' and an outer store room 7' x 4' into which the door entered. We filled it up with stores. The cloud was still low, hiding the summits but we could form our first impression of the terrain.

Although the hills were not very high, about 2,700 feet, it seemed that they might well pose considerable problems of route-finding. Takefjellet, behind base, was an example. Steep, unstable looking scree slopes curved upwards to a ferocious castellated line of cliff guarding the upper plateau. The cliff bristled with unstable looking pinnacles, and encircled the hill as far as we could see. We had overcome the problem of getting here; now we would have to set about how to travel in this sort of country.

Friday 15th July

I was up and about at 9.00 - the others at 11.00 a.m. We decided that while two of us stayed at base in case Odd Skog turned up with our stuff, the others would ferry some equipment and food to the base of Lykta S., attempt to climb it and get an idea of the layout of the country and decide where to site our cairns. This after lengthy arguments about what should be done first, and where, etc. So Martin and I set off in the boat heading for Kapp Nathorst, me at the helm. It was a quiet day and with small waves, quite suitable for our first essay with the boat.

It was an exciting moment, the real beginning of the expedition proper and we were out on a voyage of discovery. Once

we were out in the fjord a little, the waves got bigger, and I took a course with them directly behind, more or less parallel to the shore. They were moving faster than we were, and helped us on our way a little. The wind was rising quite a lot and the waves growing and at Martin's suggestion I headed closer inshore. As the water became shallower I throttled back and on opening the throttle a little the engine stopped. Martin subsequently found that this was due to a screw working loose. We changed places and Martin started the engine again and we headed out for deeper water. Soon it became really rough: Martin suggested returning to base and I agreed at once. It was now an alarming situation, some of the waves were so big that we had to meet them head-on, and this meant we were moving away from the shore at a slight angle. So Martin tried steering inshore whenever there was a slight lull and we could take the waves at an angle. The biggest waves were perhaps three feet high, little enough in truth, but in this boat with so little freeboard they were quite big enough to frighten us. She rose to them and the bows fell on the next with a great smack. Head to the waves like this was fairly safe so long as the engine behaved, but it did take us away from the shore and it was only by dint of enduring some alarming rolling that we could out in and make up the lost ground. We gradually worked nearer the shore, making better progress now. We chugged towards a group of little black guillemots, sedately riding the waves, and every now and then sticking their heads under water and bringing them up again with a shake. They let us pass quite unconcerned, for this was their element and we were only there on sufferance.

Pete agreed with our decision to turn back, when we reached base. He had been looking through the glasses and had seen us pitching in the big waves quite impressively. We all retired to the hut and had another meal.

Afterwards, it being only 5 o'clock, we decided to climb the hill just to the south of Oxasdalen to put a cairn on and take bearings if possible. Geoff would remain at base in case Odd Skog came. Just behind base, we were walking over round domed patches of hardened mud, cracked into hexagons and surrounded by soft green moss. They looked rather like flat molehills dotted everywhere very close together. Talking about these and discussing the possibility of doing some work both on them and on stone polygons, we moved over the shoulder into the valley, across the stream and up into the corrie. Martin told us that the ice sheet there, which looked like the remnants of the corrie glacier, was in fact formed by percolation of water down through the snow in winter to the ground where it froze.

We climbed out of the corrie by a snow gully. It cut through the ring of cliffs which were strangely weathered like rows of books in library shelves. Then we climbed up a wide snow slope - the other two unaccountably wanting to wear crampons - to the plateau. To our disgust, the summit consisted of a wide expanse of gravel, useless for our cairn. However, quite nearby to the east, the rock changed abruptly and there were plenty of rocks. Here we built S 501, our first cairn. Since the mist was still thick we had no hopes of taking bearings, and set off downhill only to see the sky clear. We doubled back and set up, but had not time to get any readings. This, Martin alleged, was due to an argument between Pete and me, how to level a theodolite, just at the vital moment, but we didn't have any real chance anyway. Back to base bulging with new supplies brought by Odd Skog. Martin sadly disappointed at missing the school-teacher (female) who was on board the launch, bound, with Douglas Robinson for the Scottish Expedition at Brucebyen.

above us, but how to get to it? We discussed going straight up the ridge from the south but rejected this because of a small step near the top which we suspected might consist of rotten limestone. Alternatively we could try going up one of the gullies facing us on the east face; these all looked very loose and at the level of the rock band, might steepen awkwardly. I didn't think they would be too bad though, and we decided to give it a try. The lower slopes were of the usual mossy patches, mud circles and springy cushions of vegetation. Flowers became quite profuse, mostly small white-petalled ones with yellow centres.

As we rose we found ourselves plodding over a heterogenous surface of mud, flakes of stone, small scree and more mud. It seemed that rain would set the lot off sliding slowly down hill, but at present it was surprisingly stable and in fact this way of ascent went much more easily than expected, and less laboriously. The view from the top was superb; the valley between Citadellet and Triungen had beautiful colour contrasts with its areas of red and yellow rock, mottled green and brown valleys, white patches of snow and blue sky above. In the other direction we could make out the shallows in the fjord which were brown from the mud which had been brought down by the three main river systems converging on the great delta between Lykta and Takefjellet. Their valleys were nearly all river in places, wide stony streams at present, but in spring they must be a flowing mass of water from one side to the other. It took quite some time to complete our measurements and during it I was thoroughly bitten by mosquitos operating through my woollen stockings. The bites were nothing at the time but were to swell forth later into an area of red itching pimples. For our descent we used the same line back to the boat, and sailed tranquilly back to base in the light of the midnight sun.

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East over stones all the way; big ones, small ones, and gravel, nearly always arranged in the form of stone polygons, a bank of larger stones surrounding a polygonal area of smaller ones. Sometimes the bands were quite deep, sunk in the ground and if the stones were flat, they always lay on edge. The summit, or rather the highest point in the dome, was in quite a commanding position and we built a suitable cairn on it. After this we made our way back eastwards across the plateau, down over the head of a valley and up to the next snowy dome to the east, which was just a pile of gravel with ice and snow cover here and there. So for its cairn we brought the entrenching tool into play and knocked up a large pile of gravel round one of our flags. It was now 10.00 p.m. "Back before midnight", I said. We almost made it, just ten minutes late. Pete and Martin arrived on our heels and we cooked up a large meal. We told them of what we had seen; our last peak today had afforded a commanding view of the entire southern area, a maze of rolling hills deeply cut by a complicated valley system. To the north and west we had gained some idea of the topography but the map seemed to be inaccurate and it would be difficult to sort out the jumble of peaks, valleys and glaciers. The key to the area seemed to be Odinfjellet; we would establish two men in camp high up in Hugindalen and they would spend five or six days in the area, building cairns, taking compass bearings and making sketches, preparing the way for the subsequent theodolite party.

Tuesday, 19th July

This plan was put into action. We all boated a couple of miles along the coast and back-packed inland, picking up some supplies cached by Pete and Martin on their return yesterday. The wide expanse of delta was impressive, and Lykta soared grandly above it. This would be a testing climb, with the final fortress-like

cliff offering only one attemptable route so far. It was fairly easy walking over springy moss and through boggy squelches of green. The rivers rushing down from the south didn't offer much resistance and by 8.00 p.m. we were encamped on a fine site. After some tea, Pete and Martin set off back. Tomorrow they would go south and investigate eastwards from Kapp Wijk.

Wednesday, 20th July

Back to normal, rising at 9.00 a.m. instead of noon, or later. Our prime objective in the area was a high peak to the west of the one we climbed on the 18th; we thought it might be Odinfjellet. Breakfast was frugal since by some oversight insufficient food had been brought. We walked up the valley towards our peak, debating which way up we should take. The line chosen lay up banks of loose scree which, if they had melting snow patches at their higher ends, were covered in a fluid suspension of gravel stones and mud resulting from the meltwater. Only by stepping on longish stones could one avoid sinking several inches into this goo. We climbed a steep snow slope, cutting a few steps in the ice at its top, and were out on a broad scree shoulder. At the top of this, where it steepened into a snow ridge we paused to look over the east side into the corrie. Great sheets of ice curved down into it feeding the now dwindled glacier it still contained. Continuing upwards the ridge alternated between snow and loose rock and became quite narrow, so we roped up.

The final section, an arete of rotten rock weathered into flat plates, led to a shapely snow pyramid, the summit. It had been our best climb yet. So too was the view, ranging over miles and miles of peaks, fjords and glaciers. Northwestwards lay the great ice-cap with its nunataks; to the north a jumble of peaks which we must sort out. Eastwards we were on more familiar ground; our route of

yesterday stretched out towards the vast fjord plain under the slopes of Lykta and on quite a number of hilltops we could espy examples of the handiwork of the expedition - cairns. Another jumble lay to the south of us, more gently rounded hills these, and mostly fairly low so that we hoped to triangulate this end of the Dicksonland peninsula over their heads from a few high surrounding peaks (one of which we now stood upon.)

Beyond, across Isfjord the mountains behind Longyearbyen glinted in sunshine. We regarded this with envy from under a cloudy sky as our feet slowly froze into ice. Rain was coming our way too, trailing veils of it, drifting up Dicksonfjord. We settled down to the chill task of sketching the panorama, we must do this carefully because T 501 is a vital point. Then we had to take compass bearings which reduced our temperature to an all time low. Still it was warm work building the "cairn".

Though T 501 was good to look at with its snowy crest it meant we couldn't build a proper cairn and had to make do by sticking a flag in the snow, piling snow around it and stamping it into a dense pile. Then down again with all haste to relatively warmer regions - and mosquitos. We were half way down when I remembered that I had taken all the compass bearings with my exposure meter in my breast pocket. Because of the food shortage there was no big meal to look forward to, and this was a bit depressing. After we ate it, we discussed the topography and tried to identify peaks and fit them into the map, but I still felt hungry.

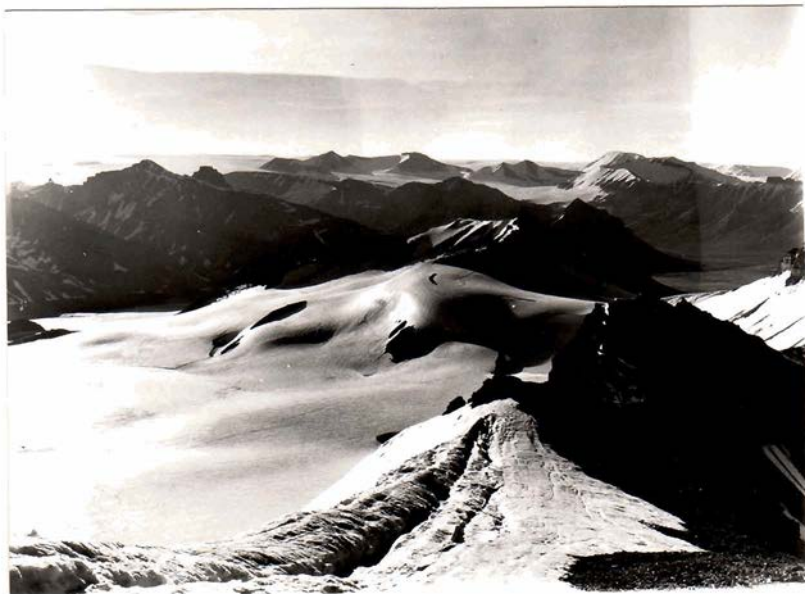
Thursday, 21st July

Mist hanging round the peaks at the head of the valley was a splendid excuse to delay getting up till 11.00 a.m. Breakfast and discussion of plans took us up till two o'clock when the sky

had brightened and the mist had risen. We went up the valley to the meeting of the three waters and successfully crossed two of them in turn dryshod to the western slopes of Storskarven. Treadling the squelches and screes here, we rose diagonally to the ridge bounding the glacier north of Storskarven. Judging from the detached, trance-like way in which I was climbing here I must be getting fit. I mentioned it to Geoff who told me that in his Outward Bound course they had called this 'handing over to George', the automatic pilot.

It was difficult to say looking at it whether this was glacier or only ice-sheet. It was a curious mixture of dry glacier with patches of sodden snow cover here and there. At first I was going to take it as glacier, unroped, but at Geoff's suggestion we put the rope on. It was plain sailing across a huge pile of moraine lying at the foot of another glacier joining ours from the north, and continuous with it. **This pile was strangely isolated**, a ridge 30 feet to 50 feet high lying right across the end of the glacier, which was very much higher than on the upstream side of it. Most of our route lay over the dry glacier type of surface, full of holes, like Edinburgh Rock. The snow cover varied from slush to large ice crystals which lay on the solid ice like scree; they varied from split pea to butter bean size. A strange feature to me was the almost complete absence of crevasses or bergschrand, but Geoff said that it was similar to icelandic glaciers. I think that here there are two annual seasons; in the winter precipitation, which lays down the snow cover, part of which is converted to ice and in spring and summer ablation which removes this snow cover exposing the ice.

After a spot of step cutting on steepish ice we got off the glacier on to the ridge separating it from the Muninbreen to the west. The peaks across the valley were the most impressive we



View down N.E. ridge of T 509



Descent

had yet seen; they rise steeply from the glacier, their faces carved into buttresses and steep, narrow snow gullies which soar upwards, disappearing into the mist. According to Harland's map these are all one ridge. We climbed along a narrow strip of scree at the edge of the now dwindled width of our glacier, above the steep rotten cliffs overlooking Munibreen. Leaving this scree we worked upwards across the glacier, now in mist, and our summit hove into view, an island of rotten rock. We had a little trouble establishing whether it was higher than a snow bump nearby but in any case we couldn't have built a cairn on the latter. A cairn of sorts was contrived from the rotten rocks, a chilly process this in the biting wind which was building up fog crystals on the rocks and us. I wore my duvet for the first time and it proved its worth. No sketches or compass bearings were possible, so we cursed the mist and started down.

It wasn't long before we were out of it, with a magnificent view down the Munibreen to some sunlit snow peaks in the south east. We lingered for quite a long time, hoping that the mist would lift on top and watching the birds which were wheeling about the cliffs beneath us. We had never seen birds so high before. **They** had nests in the cliff and we could see two birds sitting on their nests. They had white under-sides and grey on top with white flashes near the wingtips, and had about 24" wingspan. Eventually we decided that the mist wouldn't lift, in spite of the vague promises of sunshine from away across Dicksonfjord but coming in our direction and we set off. Near Altnafeadh we found a white puff ball about three inches across. I had a bright idea about tidal barrages (?) which kept my mind occupied on the descent. Another spartan meal, stew, plus ten lifeboat biscuits.

Friday, 22nd July

This time we went up the long smooth and fairly low ridge

mouth-east of the Triungen ridges. It was much less difficult than anticipated, crossing the main river just by our camp at Altnafeadh. By applying once again the principle of divide and conquer we reach the north bank dryshod. It was quite a stiff pull up over steepish scree and mud slopes to the first top of the ridge, a mound of greenish rock. The top itself was a tiny grass knoll, well manured with bird pellets. Two snow buntings fluttered around, cheeping agitatedly. Perhaps they were nesting nearby. Though most of the tops were in mist, we had an excellent view of the Hugindallen valley system, and took the chance of sketching its layout in case the weather worsened. The ridge continued gently curving upwards, broad and extremely easy walking, most of it. The surface was mostly hardened mud, hexagonally cracked. At a higher well-defined lump, this time of red rock, we thought the panorama so useful from geological and surveying points of view that we built a cairn of flat splintered slabs. Most of them we found on the slopes a few yards away overlying the mud.

Afterwards we continued up the ridge until we were stopped by towering cliffs of rotten limestone frequented by more nesting fulmars. From here we could see something of the view to the north-west, obscured by mist a bit. More sketches and compass bearings, and we set off down along the ridge again, discussing what we should do next. As we both saw it, the work of cairning in this valley and finding the lie of the land was now finished as far as long range triangulation was concerned. Anything more we could do would be useful only in elucidating the local topography and tying the minor peaks in. We had spent only three days here instead of six, but we thought we should now return to base and discuss everything we had all done. We decided to walk back that night, taking the tent with us instead of leaving it behind because

the most likely course of action now would be one party out in Nathorstdalen cairning, while the other began theodolite work across the fjord. As it turned out we didn't do this, but the tent was invaluable for what we did. **After a meal we struck camp,** leaving the primus and remaining food and began the trudge back.

Saturday, 23rd July

It took about three hours to base where Pete's head popped out of the other tent enquiringly. They were just back from Kapp Wijk, where they had not had very much success on the low hills to the east of there.

Sunday, 24th July

In the afternoon we were all up again having breakfast. Our plan of action was to boat across to Kapp Nathorst and back-pack up Nathorstdalen as far as Aboltoppen carrying two tents, survey equipment and food for eight days.

For this boat trip we had the same perfect weather as last time, again the fulmars swooping about the boat, again the mountains glowing in the sunshine, only this time we knew some of them. Out in the fjord we saw some splashing which at first we thought were seals, then Martin said it must be a whale. Shortly after, three shapes suddenly surfaced away to the south, like islands appearing; more of the shoal. They were a dark brown colour. Once we got our engine started we saw them no more, so perhaps this frightened them off, since they have been much hunted in the Arctic. Kapp Smith was exhibiting a curious mirage effect; it seemed to be floating several feet above the surface of the water. Sometimes the birds ahead of us showed this too. This time we tried landing on the south side of Kapp Nathorst but we didn't keep sufficiently far out when crossing the mouth of the

delta and were almost on the bottom. Martin succeeded in losing an oar overboard. Once this was recovered however we got our own back by pointing out that he was covered in tar. (The boat had been tarred on Saturday; I forgot all about Saturday just now in writing about this.)

Saturday was a cold grey day which we spent in and around the hut. Svalbard looked a dull misty place till in the afternoon Martin called in to come out and have a look south. There on the far west side of Isfjord was a vision of mountains glowing in sunshine under a clear sky. They were beautifully clear with every detail visible, but somehow we didn't think the fine weather was for us, not today anyway.

Sunday, 24th (Continued)

We succeeded in landing on the south side of Kapp Nathorst, rowing in because the motor ran out of fuel. It was rather a different situation from my last row. Bowed under heavy loads we set off round the lower slopes of Lykta and up Nathorstdalen. At first we walked over the usual mossy patches of vegetation, then it became muddier, arid stretches of hard-baked mud, absolutely waterless but everywhere with the mark of water written on the surface. Water trickling, rushing, oozing, for as long as the snow above had lasted. In the spring the valleys must be a fantastic sight. Farther on we had difficulty crossing the river flowing down from Kinamurbreen. It met the main river in a wide delta, a quarter of a mile across, but its stream was concentrated into several narrow channels. Several methods were used to cross this; Pete put on Martin's waders and ferried the rucksacks across; Martin successfully jumped the stream; Geoff took his boots, stockings and trousers off and waded; I, in adopting Martin's method became unstuck on landing and sat backwards into the water. We carried on, now with growing aches and pains and

set up camp on a mixture of moss, gravel and scree embedded in mud overlooking the red river rushing down between Abeltoppen and Citadellet.

Monday, 25th July

The weather being still beautifully sunny and cloudless we planned to continue after a meal up Abeltoppen and Citadellet East or North, the Abeltoppen party with the theodolite and the others cairning. Pete and I took Abeltoppen and began the long trudge up the usual mudstone scree to the east ridge. A wide bank of alto-cumulus had come up from the south and the wind rose, making it very cold if we stopped, so we kept moving pretty steadily. Near the top the ridge steepened and we were on to limestone and the first scrambling we had yet met. On top the view was fantastic, peaks everywhere flecked with snow and ice; westwards the ice-cap dead and colourless except for two yellow patches of midnight sunlight creeping across it. North over Ausfjord the clouds looked torn and ominous but to the south we could see the edge of the cloud bank, moving, we hoped, towards us.

For the first time I really felt in the Arctic. We set to erecting the theodolite and taking bearings. Pete did face left while I sorted out which peaks to shoot, then I did face right. There was a difference of two minutes in the vertical angles, but it was too cold to mess about and we bashed on. It was gratifying to turn the telescope on to a distant summit and see there, one of the marks of our labours. By the time we finished we were frozen, but the clouds were disappearing and we thought to seize the opportunity of doing Gyldenfjellet as well, since this involved only about a thousand feet of ascent from the col west of Abeltoppen.

We shot off down some quite good scree to the col. Once

there I had to go back up some way to retrieve my gloves and was surprised at the rate at which the snow was softening in the sunshine. The ascent of Glydenfjillet was purgatory, finishing up large unstable scree interspersed with low cliffs. **On top it was** again cold and we were glad of our duvets but the situation more than made up for that. Then down, down scree, snow, and mud and scree, to camp, tea and bed. I didn't sleep too well and in fact everyone was up by 3.00 p.m. It was pleasant in the warm sunshine and we pottered about feeding, writing up diaries and investigating the errors found in the theodolite.

Tuesday, 26th July

We struck one tent and with survey equipment and food for three days made our way up to the snout of the Kinamurbreen. We walked up the right bank of the river which had the terminal moraine on its left bank. At the top it flowed from a lake fed by the Kinamurbreen and Manchesterbreen. It was now 1.15 a.m. and the peaks were glowing in the strange golden light of the low sun. Our plan was for Geoff and Martin to climb Sentinelfjellet, take bearings and erect a cairn, while we slept. Then we would do Kinanderfjellet when they returned and slept. However this was amended. Geoff and Martin slept in the tent while we bivouacked nearby. I woke up at 8. o'clock and made porridge; G. and M. set off and we went back to our sleeping bags. I was dozing rather fitfully and eventually got up and joined Pete sitting in the lee of the tent. A large white gull was walking around which we fed and photographed, an ivory gull we thought. It was glorious to bask in the sunshine doing nothing but chat, write a little and survey the tranquil vista of mountain and glacier.

At 4.00 p.m. we returned to our sleeping bags, awakening with the return of the others at 7.00 p.m. After a meal we set off

over the terminal moraine of Manchesterbreen beneath the camp site on to the dry glacier which led us gently upwards towards Kinanderfjellet. When we encountered our first melt-water stream bridged with snow, we roped up and waded into the slushier section of the climb. Pete led up the left side of the glacier, with our peak sweeping up above us. The snow was deep and soft and after we had climbed some height I took over the lead to find it getting worse, the patchy kind where one step sinks deep while the next one takes the weight. After another change of lead we crossed two small bergschrunds and reached the snow col west of the summit. The ridge was covered with glacier, and crevasses from the glacier on the south side crossed it at a few points presenting no great difficulty however; we concluded that Spitzbergen glaciers were easy, compared to the Alp and Jan Meyen species respectively. The rock ridge, as steeply impressive on the west side, degenerated into scree on the south-east, and we wandered quite quickly up its fairly stable surface. The summit crest was long, narrow and disintegrated. We found that the cairn we had sighted from Gyldenfjellet was in fact a shattered stack of rock which was midway between the two summits and lower than both. We made it our station however as it was adequate for all our purposes.

The weather was still superb, by far the best I had yet had on a summit. If yesterday the scene had been Arctic, today it seemed Alpine. Indeed, but for the ice cap shining in the east we might have been in Alpine Wonderland, although there, we wouldn't have been sunning ourselves at 11.00 p.m.

About half way through taking the bearings I glanced down at the valley to the south east and was surprised to see it filled with a sea of cloud. Soon Kulmdalen to the south-west was filling as well and mist was beginning to stray about in the north. It was an impressive display. We took our round of photographs and

hastened back down the ridge, debating whether or not to attempt to continue to Citadellet North, especially as some of our sights were being blocked by mist. In order to give ourselves a chance to consider the situation we went round the head of the corrie over a small eminence to the coll at the west side. In traversing round this point I struck an icy patch very suddenly, but Pete pulled me up before I slipped more than five feet. Where he was standing, just behind me, was good firm snow. As far as I could see there had been no warning of this which I could have foreseen. Perhaps we had been going so much over snow overlying ice and finding it holding O.K. that we were expecting too much of it. As we came down to the col, mist was creeping over the ridge into the corrie and a mist bow was visible behind us. Had we lingered we might have seen a fine Brocken spectre, but I suggested to Pete that we were best to return down the glacier we knew, so we descended and retraced our line of ascent downwards.

By now the mist was swirling around us in the corrie and the sunlit peaks above were disappearing and reappearing remotely through it. Some of the effects were most beautiful and I expended more film on them. Down at the moraine we looked westwards; dull leaden clouds covered the sky - "just like the Svalbard we're used to" I told Pete. The others had moved our advance camp back to Camp Slippers so we staggered back there and into bed.

Wednesday, 27th July

Much of the previous day's account belongs to this date. In the afternoon we got up and since it was cloudy and obviously unsurveyable weather we enjoyed the luxury of messing about in the tents. Geoff suggested that two of us should leave, going back to base and on south to cairn and investigate the unknown area to the south, inland from Kapp Wyik. Now that the good weather had

broken, there was no need to have sufficient men in Nathorstalen to work the shift system since two could wait and strike when the weather improved. Pete and Geoff had not yet worked together on this trip, so they would be one party. A solemn coin tossing ceremony decided that they would go south while Martin and myself remained. It was of course a British coin which made this momentous decision. When we had said goodbye to the others Martin suggested that we could carry the survey equipment halfway up Citadellet North, for the sake of doing something and to improve our chances of getting up there quickly if the weather improved suddenly. I said that we might as well go fully equipped in case the tops cleared and in fact this happened and we got another round of bearings.

Martin had already ascended Citadellet N. with Geoff but it was my first time. Crossing the river was achieved by Topping's Leap, where it narrowed to a seven-foot gap between two jutting out rocks. Geoff had nearly come to grief here on his return as he had slipped back into the torrent because of mud on his boots. However it was easier on the outward direction and we were soon slogging up the mud slopes above, the monotony relieved only by crossing an outcrop with inward-sloping bedding which had weathered into a huge flight of steps.

The Citadel seemed to have opened its gates to us. At its top the mudslopes converged to form a ridge topped with limestone leading to a snow ridge between Kinamburbreen and the corrie glacier which overlooked Camp Slippers. The ridge curved up to a steep buttress under the summit. We moved up this, kicking steps quite easily at first but near the top there were some patches of really hard ice requiring step-cutting. We gained a little scree platform under the towering buttress, pieces of which we could see lying around in the snow, not to our comfort, and after a bar of

chocolate I relinquished the lead to Martin.

He began edging along the top of the ice with the rock on his left, cutting steps here and there, using embedded stones and occasional handholds on the wall. The position was quite exposed here, the ice slope sweeping down in one curve to the bowl of the glacier hundreds of feet lower. A scree patch stuck out into the snow farther on and instead of crossing the scree as he did before Martin led round beside a rock wall at its foot over snow. The snow here was entirely soft and quite deep and some which he dislodged started a small avalanche. Only the surface layer came off, leaving a narrow white strip which widened and expanded as it hissed down into the corrie and shot across the ice at the bottom. He pushed some more down and we watched it; **it moved very slowly** at first until it reached a steeper convex slope farther down where it suddenly gained momentum and sort of rolled about in waves and widened its path a little. Clearly we didn't want to go that way.

The snow on the far side of the scree patch was soft and banked high against him, so Martin decided to climb the six foot high wall on to the scree and continue over that. I brought my belay up to protect him for this. We were now almost at the short rock patch by which we would gain the main ridge between the two summits. It was very shattered; two enormous pinnacles like squat Indian clubs towered precariously from it to the west of us. Our climb too was rotten, and quite tricky despite the mere ten feet of height. I took Martin's axe while he belayed up, and carefully clambered over the scree on top to the crest.

When we were both up he suggested that we could easily gain the top by climbing the east edge of the little nick in the ridge where we were now esconced. Last time they had gone down the

scree westwards and back again, debating whether to give Cit. N. up and do Cit. E. instead, before they found a roundabout way to the summit. This route Martin proposed, looked as if it would go quite easily and I was surprised they hadn't attempted it last time. The rock looked sound, and in any case wasn't more than a twenty foot pitch. Martin went along the crest into a little right-angled corner which went straight up for a few feet under some perched blocks then mantelshelved out on the flat top of its right wall. I followed and we ran over to the cairn and began frantically erecting the theodolite. Abeltoppen was just about to disappear into the cloud layer. It did. However I managed to get all the other bearings bar Gyldenfj. and T 501. As we finished the mist was just reaching our level.

After debate we went down by the same way as the previous party, off the summit by another little pitch, then leftwards over the scree. However we didn't make for the snow ridge but went straight down to the Kinamurbreen, thinking this might be an easier way back. The scree consisted in large part of coal from a high seam running round the back of the corrie and which made the scree soft, fine, black and very grubby. We roped up, carefully crossed the bergschrund and began splodging through the deep snow down the left side of the glacier.

To the right there was a large ice cliff, free of snow and separated by a big crevasse from the glacier behind it. I was surprised at the quantity of soft snow on this glacier, far more than on Manchesterbreen. In the middle of the corrie we encountered a number of crevasses, both transverse and longitudinal. It was rather tricky because the indications were very poor, a tiny crack being often the only sign visible. Then the snow was sometimes so soft that it was impossible to tell by prodding whether there was a crevasse or not. I decided we must move off

this area of convex surface into a depression on the left and we made a tortuous way through the suspected and proven maze into this and on to dry ice at the edge. Even the dry ice was not altogether plain sailing because it was incredibly slippery. In many cases it was clear black ice, very hard and the overlying dirt instead of acting as an increase to friction seemed actually to lubricate the ice. It was the soft red mud, possibly too smooth and rounded to grip into the ice surface. We didn't want to go slithering into the boisterous meltwater stream at the bottom of the slope. We crossed the stream and went out in a curving line to the middle of the new dry glacier, curving round in easy gradients to the terminal moraine. It would have been too steep to come easily round the western corner where the glacier turned into Nathorstdalen. The remaining problem was to cross the river. We found a series of boulders with the red water foaming in between them. Martin crossed first, refusing the rope but I made certain I had it before starting out. We let it stream out in the water to unkink itself; the drag was quite surprising. Back to camp, soup and bed.

Thursday, 28th July

Again the previous day has pinched a descent from this one. We woke at 6.00 p.m. to the sound of rain rattling on the canvas. Since then it has been a matter of making small events into big ones. I went twenty yards on an expedition to dig some holes in a watercourse to provide clean water. With all the rain the stream behind the tent is red with mud. Through the night, periods of dozing alternated with coffee-making and writing.

Friday, 29th July

I made some stew at 6.30 a.m. and after this was over began some experimental chocolate fritters. These were prepared by

reducing lifeboat biscuits to a paste into which were shredded half a bar of chocolate and half a bar of rum fudge. Sugar and dried milk were mixed in and the result fried in margarine. It was too soggy to coagulate into fritters but when well mixed up became excellent chocolate pudding.

Though still very dull the weather had improved and we set about moving the camp down the valley. It would not be worth while staying on here merely to get the bearings which we had missed on Abel, Gylden and Citadellet North. The main problem in travelling out was how to cross the river. We could go over the Leap but with loads it might be better to wade it somewhere downstream. This we eventually did, finding a ford on our third attempt. After that it was just a grind all the way to the spot we selected on the delta under the slope of Citadellet. We pitched the tent and Martin lay down on his sleeping bag. As I felt a bit tired I did the same. I didn't wake up till 10.00 p.m., seven hours later. Made some food, then to bed again.

Saturday, 30th July

Martin woke up at 1.00 a.m., looked out, saw the weather clearing in the south and urged me to get up and climb Citadellet W. I managed to wangle an extra half hour in bed while he made the porridge, but by 2.00 a.m. we were up and off towards Citadellet assuming that the cloud edge in the south was heading rapidly this way. We had climbed for just half an hour when we stopped and deliberated about the weather. The cloud edge was still where it had been before, showing no sign of approaching nearer, we decided to go back and to bed until there was a definite change for the better. As we walked back patches of sunshine were beginning to creep over Lykta just to the east but I remained adamant and back to bed we went. The next thing I knew

was that it was ten o'clock and Martin was making another breakfast. This time we made better time to the foot of the mountain and scrambled up a steep ravine gouged into the red mudstone by the stream from the shallow upper corrie. It was a place of utter desolation. No scrap of vegetation could be seen amidst the desert of fallen rocks and shifting scree which rose on either hand. The only life was the rushing torrent tumbling impatiently to the sea. We emerged from the ravine into the corrie, where a branch of the stream ran up to the north and became a snow gully breaching the ring of cliffs near the top. We went up on the snow then when it became icy transferred to the scree slope on its right. The higher we got, the worse it became and at the top was an infuriating mixture of disintegrating cliffs and steep scree. Pete and Martin had built a cairn on a stony patch in the western edge of the plateau, although this was lower than the snow dome just to the east. By good fortune they had placed it, working in mist, in just the best position.

The air was exceptionally clear and the sunlight powerful, though towards the end of our observations local cloud drifted up and made things more difficult. On the other hand, I benefited from it to the tune of several photographs. A sea of cloud lay in the valleys to the north and was just beginning to spill over towards us, and cloud banks were gathering around Lykta, so we hastened to descend and get on to Lykta S. before conditions worsened. The ascent had taken us $4\frac{1}{2}$ hours; the descent $1\frac{1}{4}$.

Down in the valley there was a strong north wind, chilling but not cold considering its direction. We made ourselves comfortable in the tent and had a meal. It looked as if a front were coming in from the south, so we would proceed to Lykta S. and Kapp Nathorst and do these stations before the cloud set in. We could also pick up some food left behind by the others, including

we had hoped, so instead, decided to traverse the steep western screes right under the limestone cliffs. The cliffs were about 150 feet high and set at a very high angle. Fulmars were nesting all over them and many were wheeling about in the sky above us. The vegetation just beneath the cliffs was profuse and might be due to the minerals brought in by the bird life. Twice we inspected gullies between the buttresses, but they were rotten with some very steep pitches visible so we pushed on round the base of the cliffs to Martin's previous gully. This we did as fast as possible since I had noticed some stonefalls before.

The scree gully was purgatory. On top the view was once again superb, another variation on a landscape which became more and more familiar with each ascent. An interesting feature was the line of ice-cliffs in Isfjord on its west side where the glaciers pushed into the sea. They must have been one or two hundred feet high.

Monday, 1st August

We were now so tired that the quick and easy scree run down seemed tiresome. Back at our loads any idea of a rest in the sun was eliminated by the shadow of Triungen creeping round us. We picked them up, or rather we each placed the other's burden on his back and made off slowly across the delta. The river from Hugindalen was widely spread into many channels but unfortunately some were just on the wide side for me to jump. Martin splashed through in his waders while I jumped and splashed in the shallows, getting a lift only for the widest channel. In one area there was a great deal of cotton grass, dazzling white in the sunshine.

It took a long time to the shore where we staggered on to the shingle and dropped our loads for another rest. The sky was absolutely cloudless at first and when some low little clouds

formed round Tolstad they looked out of place and soon vanished. Elsewhere the sky was a faultless blue, rather pale but also very hard and brilliant. The hills across the fjord stood out clearly in this harsh light, flat as in an overexposed colour photograph. We rested for some time contemplating the placid sea and mountain-scape, quite still save for the birds flapping busily about; no wind now to carry them in effortless glides.

The shingle beach was quite littered with timber in all shapes and sizes. Much of it was sawn and was one of the few obvious marks of man which we had seen in Dicksonland. The stretch of shore along to hut seemed interminable; we arrived at about 9 o'clock and prepared a large meal of base food before pitching the tent and going to sleep. Back to our little land of plenty again! Geoff and Pete had returned a few hours before us and when I woke they were busy cooking.

They had been impressed by the country around Ibsenfjellen and the inaccuracy of the map in that area. Also they had deduced that the triangulation would require at least another 14 days of pure surveying and were becoming anxious about the possibility of not getting everything done. This was in Pete's mind when he announced to Martin and myself as we creaked into the hut that we must be off up Hugindalen that evening - a suggestion which didn't have the slightest appeal to us. However the weather was still so fine that we agreed that it would be advisable to make the most of it. Pete and Geoff boated up the coast and set off up Hugindalen to Altnafeadh with theodolite, tent and their personal kit and we were to follow with the food next day. After they left, cloud came up with great rapidity from the south and when we went to bed the outlook had definitely changed for the worse.

Tuesday, 2nd August

A cold windy and miserable sort of day. We planned at first

to set out after the others in the afternoon, but when the weather persisted there seemed no point in so doing and we put it off till tomorrow. Better to be back in the comforts of base, albeit primitive, than encamped in Hugindalen living on dehydrated food. Also we could do some useful work at base, writing up results and doing repairs, and there would be less food eaten in the camp with us not there. So we stoked up the stove and enjoyed life at a considerably higher temperature than we had been in for quite some time.

Martin decided to bake a cake from a recipe on the side of the flour tin. For an oven he took a large empty can, about eight inches in diameter by twelve inches high and sat it on top of the stove. The temperature he tested by the rate of evaporation of spit. Inside the can he placed a billy with the mix in it. During this process I was lying on the bed on the bearskin and the next thing I knew was waking up feeling I was in a furnace; the air was roasting hot and my legs were being baked by waves of heat radiating from the stove. It was two hours later and Martin had just taken his cake off. When it had been allowed to cool and its exterior decarbonised, it proved to be quite edible, though its consistency varied from cake-ish through dumpling-ish to pure stodge. "A brave first attempt" I commented. The remainder of the day passed without much incident - though we were visited by a family of elder ducks swimming along near the beach, the parents shepherding a convoy of about ten bobbing, rotund youngsters.

Wednesday, 3rd August

Drizzle was falling when I woke, and the dullness of the weather made us disinclined to start early, so we managed to occupy ourselves about the hut till 5.00 p.m. Then we made along

the shore to where the others had left the boat and food and found them there, having come down to collect it themselves and somewhat peeved at our failure to turn up the previous day. We all walked up to the camp and settled in hoping for better weather tomorrow.

Thursday, 4th August

A dull windy day, with lenticular cloud formed over the mountains. Geoff and Pete went out to T 510 in the hope of getting some bearings if it lifted and returned after an hour's cold and unsuccessful wait on the summit. We spent most of our time in the tent. I wrote, and started reading 'Man on his Nature' and went outside only for about an hour, on a botanical expedition. I hoped to assemble various plants in one spot near camp and photograph them all at once.

Apart from the work, in poor weather there is precious little to do in a valley like this. In the evening Martin went for a stroll to get some fresh air before going to bed and came back full of enthusiasm about the weather. So by 11.00 p.m. we were on our way up to T 510 along the Belvedere ridge as before. Crossing the river we solved by constructing two short jetties out into the stream and each of us walked out on one of these carrying one end of an enormous red boulder which we positioned almost half way across; Martin is a great hater of wet feet. The round didn't take too long, but since cloud was clamping down again in the north we didn't go on to T 509 but returned to camp.

Friday, 5th August

While the others climbed T 501 in much improved sunny weather we were asleep in bed. Then it was our turn, and T 509 our peak. We climbed to the glacier snout, (Imperialbreen) by an improved and drier route, then followed much the same line as previously. Now



Tarring the boat



T 501 from Belvedere

the glacier was dry ice everywhere, hard, crisp and in delightful contrast to our previous visit. The first snowslope was also much harder, lots of it with a beautiful firm sandpaper surface - though in places regelation had produced sheets of hard, and as I found, extremely slippery ice - I found myself cutting a couple of steps on a 5° slope! On top we saw what a magnificent view we had missed before.

Saturday, 6th August

The sun was now fairly low in the north-east above the ice-cap and I dashed enthusiastically around trying to photograph some contre-jour effects on snow and glacier. An odd feature on Giyenfjillet was a crazy leaning pinnacle perhaps eighty feet high with two huge holes in it, like a bell tower, through which we could see the glacier surface beyond.

Conditions were perfect - I was almost warm while operating the theodolite. But if only the slightest air blew up we soon knew about it. Only the calmness and the sunshine were making us so comfortable that we spent a leisurely six hours on top, getting bearings on a number of extra, very distant peaks, and making an extra good sketch as well as doing all the usual things. As Martin said to me, - we didn't mind spending an extra hour in such a fine spot when everything was so lovely. However the others needed the instruments and we needed bed so we turned with regret to the descent.

Even now, at 9.00 a.m. the snow was good, it was so cold. Perhaps summer is coming to a close - the misquitos too are now hardly troublesome at all. Low on the glacier we found a well in the ice, a vertical shaft in a meltwater channel with water welling smoothly out, green and mysterious from great depth. We amused ourselves for a moment throwing stones down it. Back at camp the

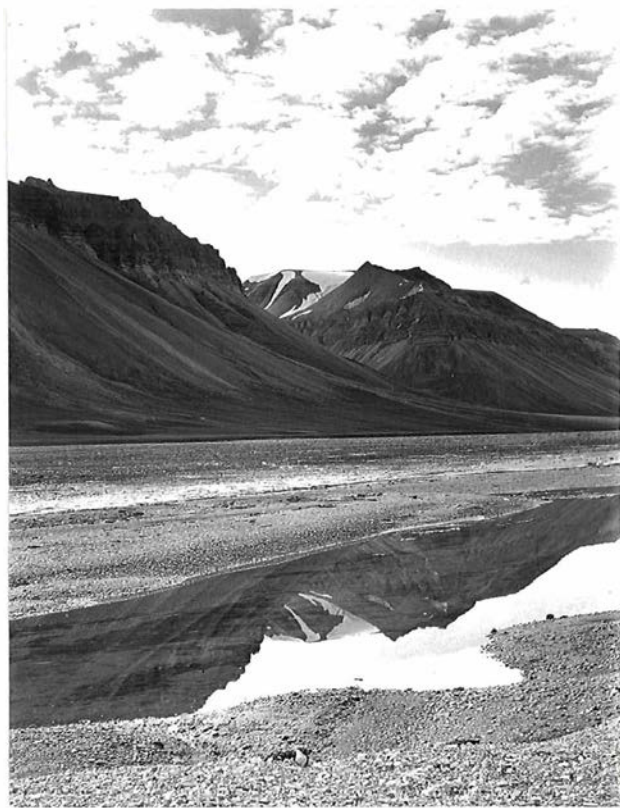
others were still in their lazy pit, but we made porridge for them and they got up and packed their kit. We would carry it back to the boat while they did T 508, S 501 and the Takefjillets, going on to base. But first we went to bed for eleven hours, (after stew and chocolate pud.)

Sunday, 7th August

Day began with porridge, cheese pud. (of lifeboat biscuits, cheese and marmite, fried in marg.) and as much of the surplus food as I could manage, to Martin's astonishment (or envy?). Then we back-packed down the valley to the boat, managed to get her afloat fairly easily in spite of the low tide and chugged back to base. The others were in bed, so after making ourselves a meal we began on the results, computing triangles. It was quite exciting and gratifying when they added up to 180 at first, but this soon became monotonous. Then Pete came in with some mail which had been brought in our absence by Harland who was in Svalbard with the International Geological Congress who were being housed and transported by the Norwegian Navy. The day completed by working out results, idling, arguing, eating, etc.

Monday, 8th August

A dullish day spent in and around the hut, entering results in the big book, doing odd jobs and discussing our immediate programme. Two schools of thought existed about this. One wanted to go round to Pyramiden by boat either before or after Martin left, and the other thought it better to reach Pyramiden overland from a camp at Tredalsspasset. By the first method it might be possible to carry enough supplies to sit out any possible bad weather and make sure of getting the Pyramiden bearings, but the boat journey would be long and easily delayed by bad weather. If we used the second, we could be fairly sure of bagging Pyramiden



S 501 from Base

and Tredalspasset and Ibsenfjellen cairns, all within about a week and probably do Tolstad and Kongresfjellit as well before we had to go south to take Martin to Longyearbjen. These considerations were complicated by unknown factors, like weather, the nature of our reception by the Russians, and by possible changes in our plans for the triangulation which were still not settled i.e. were still argued about.

Other arguments of the day included Hovercraft (again), the relative precision of engineering and pure science and theory of structures as applied to climbing boots. Pete achieved his ambition of making a sail for the boat and spent a happy half hour on the fjord trying it out. This had been the subject of violent controversy, Pete defending his idea as an added safety factor and means of increasing speed.

Tuesday, 9th August

The morning spent in preparation, and we left in the afternoon by boat, going southwards along the coast to the delta of Lycholmdalen. This was my first trip to the south, and I could see that the country here was quite different. The band of hard limestone strata which in the north had resulted in fortress-like cliffs guarding plateau summits had dipped and across the middle of the hills' flanks was formed into great steep shattered buttresses deeply cleft by narrow twisting gullies and scree shoots.

As always, it was farther than it looked and we had been boating for over an hour when we came slowly in to the gravel beach at the delta. The water here was much clearer and we could easily make out the stones and seaweed on the bottom. Where we first attempted to land it was too shallow, but we succeeded nearby and soon had the boat up on the ridge of shingle and more than adequately roped to terra firma. The walking across the delta was

very firm and dry and we progressed rapidly inland. Two big glaucous gulls circled overhead for a while, sounding their alarm note.

The hillside to the south was remarkable for a long line of very regular buttresses with deep gullies eroded between them. The river was confined to one channel here, which was why the delta was so much drier than the Hugin-Nathorst dalen one; it was also much higher above the river. Several valleys entered the delta; we turned north-westwards up Lycholmdalen. It was broad and flat and we made steady progress across firm stream-beds to the point where it split and we turned south-west up a narrow defile. It was a barren spot, nothing but scree on the steep slopes on either side and the rushing river where they met. We wound our way laboriously upwards, near the top finding the valley bottom full of dead ice. Occasionally there were holes in it of great depth with water vaguely heard at the bottom. At the top a glacier fed the stream from the right; we veered left and arrived out on a high terrace, Tredalspasset at our feet. It was a vast stony plain formed by the meeting of several valley systems, its gentle undulations still holding snow in occasional patches. Rounded hills surrounded it, with glaciers flowing from their ice-caps. We debated which route to use tomorrow to get to Pyramiden in order to place our camp accordingly, and decided to swing left into the next valley, which ran north. Camp Gravel was pitched on a gravelly terrace above a stream with dead ice on its banks.

Wednesday, 10th August

As we went to bed, sunlight was streaming into the Tredalspasset, the sky above clear blue boded well for tomorrow. We woke to find the weather changed to dull and misty. We packed up one tent, equipment and food for the survey party who would do Pyramiden;

so as not to be dependent on the Russians, they had supplies for three days. Then we set off up our valley towards T 501 and round Torfjellet. At the top we had to strike eastwards, going down to Minendalen. This was complicated when we saw that there was a band of cliff running round the head of the valley, with the river falling over in a beautiful single waterfall about ninety feet high. The problem was solved by a scree slope on the far side. Farther down the valley we noted some peculiar banks of stone which had accumulated beneath the slopes on either side of the valley. We were unable to explain them either as moraine or scree. They sloped up at about the angle of rest from the valley floor to form a ridge, then fell slightly into the hillside.

It was easy going until the Russian outposts hove in sight and we came down to the river. Pete crossed by jumping, Martin by finding a log and using it as a bridge then as a pole vault and Geoff and myself using the safe method of paddling. We passed a high fenced-in enclosure whose purpose was not clear. It had a few low buildings and watch-towers at the corners and the fence had little red notices along it. It was still some distance along the shore to the mine and we were quite close before we saw our first Russian. The buildings were quite colourful from a distance, blue and yellow and pink. We crossed a hump-back wooden bridge and walked down between rows of large timber houses. Over the porch of each was a big board with a painted notice. One with dates and percentages we surmised might be about their productivity. The music which we had heard in the distance was now much louder and came from loudspeakers farther down. The people hanging around looked at us curiously but didn't seem at all excited at the sight of what must have been a very scruffy quartet. We were surprised at the number of women. Down at the loudspeakers we wondered where to go to find an official to explain ourselves to and settled

on a large yellow building with a flag and red star on it. As Martin remarked, it was like another world, with the, to us weird semi-oriental lilting coming from the loudspeakers contrasting with the lack of any marked activity of the people we passed, with whom we didn't know how to start to communicate.

At the entrance to the yellow building by some notice boards we collared a man and succeeded at least in making him understand that we were English. He led us upstairs, ice-axes rucksacks and all and went off to find someone. While we waited we managed to communicate a little. My watch was twenty minutes slow, I found, but the others were bang on. Martin exchanged cigarettes with our friend. Then our official appeared, an oldish man in a black coat and hat, almost like a parson. He spoke a little, very bad, French. He took us into his office and we explained about the expedition. Our trek from the west coast seemed vastly to impress him. After all this was over he asked us by signs if we would like a bath and when we readily accepted he signified subsequent eating and sleeping. They were going to put us up.

He led us to one of the houses and showed us our beds, then took us to the showers. They were hot and steamy heaven on earth to us and we emerged cleansed, glowing and exhausted. Back to our house to await our guide and mentor. The buildings were interconnected by raised wooden walkways with pipes underneath, presumably to provide good access in the snowy winter. Other novelties were the double doors with their leather draught excluders and the double windows. The central heating was on and the house quite hot.

Our friend arrived and we sat round the table chatting. He was a deputy engineer and had spent two years at Pyramiden. He told us that the mine started high up the hillside, going down into the mountain, presumably following the seam which was $1\frac{1}{2}$ - 2 metres

thick and produced 530,000 tons per year.

Outside, the loudspeakers had changed to some high-powered violin music; I was sorry I couldn't pay full attention to it, but it was a bit distorted. Apparently this was Radio Moscow which was relayed from 6.00 a.m. to 12.00 midnight, more or less non-stop. Our friend told us they had been visited by Simpson from the Scottish expedition at Brucebjen. He was quite intrigued when Martin said he had met him in the Antarctic and spoke of taking us over in a boat. It was meal-time now and our host took us over to the restaurant. We went into a side room which we thought was probably the 'officers' mess'. The door was hung with curtains and our host with a "S'il vous plait" invited us in to the long table for eight persons. It was dominated by three vases with serviettes in them. The three Russians at one side nodded to us then continued to gulp their soup while we seated ourselves and wondered how to begin. The table was covered with plates of bread, ham, egg savouries and meats and we attacked these first. Then soup, with doughballs, was served followed by semolina jelly slice and weak tea into which one put fruit essence.

There seemed to be considerable coming and going of people across the table but perhaps they were eating faster than us. The meals seemed to work on the running buffet principle, for as people left, the places were reset. After I had realised that I had kept everyone waiting and hurriedly finished my tea we went back to our house where we talked with the engineer and a young engineer from a ship who spoke some English. Then he told us to be up at 8.30 (their time - 7.30 ours) for breakfast and we were left to our letter-writing. The beds had only a single sheet and blanket but with central heating this was adequate.

Thursday, 11th August

I woke with vague realisations that Radio Moscow was audible.

Over to breakfast which was similar to the supper, with soup, a sweet of baked macaroni, and coffee. Back in the house we told our friend of our plans. Martin and Geoff would stay until Pyramiden cleared to take the bearings, and Pete and myself would leave that morning, back to camp Gravel.

So we said our farewells, and he went off to work. We had forgotten to ask if we could take photographs so it was a little cautiously we went outside and snapped ourselves on the porch. Leaving the others some food and the tent, so that they needn't be dependant on the Russians for too long, Pete and I set off up the street back to camp. Without the loudspeakers the atmosphere was much less eerie. We stopped casually on the bridge for a photo; a Russian on a nearby porch stared at us but we thought it would be O.K. to take them openly like this. Crossing the river was easier at this early hour, and we were soon plodding up the valley east of Torfjellet, as a change from the route of yesterday. It was a dull day still and we had no hope of much surveying being done at least till tomorrow. Into camp there to cook and eat our miserable pot and argue over the quantity thereof. Thence vaguely into slumbers.

Friday, 12th August

The morning was passed with the usual trivialities. Outside it was dull and we had little hope of the others being on Pyramiden. In the afternoon we went south across Tredalsspasset to reconnoitre the route to Ibsenfjella and to look around. The weather was clearing, with a north wind and we guessed that the others would be out.

We did a casual investigation of the stone stripes and polygons. Taking a stripe of walnut-sized pebbles about six inches wide and sticking above ground level about two inches we found it was about

four inches deep surrounded by clay. A polygon about six feet across contained stones from six inches downwards, mostly smaller and sticking out about five inches. The lower layers tended to become finer, and the clay in which it was surrounded was exerting an active pressure on its sides. At the far side of the pass we took a rough round of photos before returning and going early to bed since we expected the others to be back early in the morning.

Saturday, 13th August

When I stuck my head out it was to see an overcast sky. We estimated that the others would be back before 6.00 p.m. assuming that they had been on Pyramiden until about 1.00 a.m., come down and were camping beyond the mine till about midday. So we passed the time in the usual way. Our argument was whether or not Man is "just another highly developed animal" as Pete asserted. At one o'clock I became fed up and went out for a walk going towards Pyramiden so that I might meet the others or maybe see their camp from above the waterfall. I was wandering slowly along not far out of camp when I spotted them. It was a surprise somehow to suddenly see people appearing in the desolate landscape.

As we all walked back they told me animatedly of their experiences. The Russians had had to throw them out to make room for a Norwegian party, and Ivan, our friend, had been very sorry about it and had presented them with two large loaves and an enormous quantity of butter. Some of this they had brought back "for John" Geoff said. A kind thought, for the bread was excellent. It was brown and heavy though of open texture, and also rather moist and the individual cells had translucent walls. Unfortunately they had been unable to find Ivan later to give him some chocolate.

The cloud had lifted somewhat now, and T 501 was almost clear.

Once the others had gone to bed I wandered out casually and ended up climbing the hill behind Camp Gravel. I could see all our near stations to the north. If we had gone up S 505 after lunch we would have got all the important ones. From the top I got back to camp in five minutes such was the excellence of the scree, quite unparalleled in my experience. Forty minutes up and five down. Then ensued a long argument with Pete in which I said we ought now to ascend S 505 in case the weather improved and he said it wasn't worth it. As he refused to try it till the cloud lifted, we retired to the tent. After a meal at eight we decided to review the weather situation at midnight. My next recollections were of being awakened by someone shoving an enormous mug of porridge under my nose which I did not in the least want. Eventually I ate it (much to the relief of everybody who said they thought I was ill) and began to wake up. Sometime during this I remember reciting the potted biography of Hilaire Belloc as on the back of Pete's Penguin book. It was unpleasant to get up into the cold and put boots and things on. Then once I was up, I saw the cloud drift back over T 501, and we ended up with the same argument as we had had in the afternoon, except now Martin and Geoff participated. It got quite acrimonious and eventually I retired to bed again in disgust telling Pete to wake me when the fifty-fifty chance of good weather arrived.

Sunday, 14th August

The weather was much improved when I woke. Geoff and Martin left for the boat taking a tent and some supplies with them. After breakfast Pete and I left for Ibsen going across Tredalpasset and following the valley at its south end almost to the deep gorge which Pete had crossed before with Geoff. Then we struck across towards the glacier east of the big black buttress of Ibsen. The going had been excellent so far, quite the easiest I had yet come

across. It was easy too climbing gently up the dry glacier. Ibsen towered on our right, steep cliffs at the head of the dark screes. Ahead the glacier swelled upwards, bursting at the top of the rise into gaping crevasses while over to the left it hung crazily as a cliff of ice over a projecting spur. We roped for the bulge since it was snow-covered. At the top we met the crevasses but fortunately we didn't want to cross them because we could escape to the right on to the rock. **This involved crossing** the end of a big crevasse but as it was fallen in there was no difficulty. A short easy rock pitch at the far side carried us up on to the escarpment. Pete rushed on for the summit; he had bet Geoff that we would make it in under three hours and there were only ten minutes left.

It was cold on top and we wasted no time in setting up. It was interesting to see our familiar points from the other side. South of us glistened the Ibsen ice-cap, out of which flowed the glacier we had ascended. The cap rose gently to the skyline, blocking most of our view to the south. As we tramped back to Camp Gravel the clouds from the west overwhelmed the blue sky and we did the last mile through falling snow. Our hopes of continuing to do S 505 were dashed; indeed our chances of doing it tomorrow seemed slim.

Monday, 15th August

Woke to see sunshine on the tent canvas. Low mist up the valley was clearing as we crossed over to S 505 and climbed up the dry glacier to the S.W. flank of the N.E. ridge. Then up small, but very loose scree to the top, two steps forward and one back. Our view to the north was only as far as the S 501 - Pyramiden line, clouds obscuring the farther north. Accordingly it was a quick round and we were quite glad since a cold wind had sprung up. We

went down along the N.W. ridge then a swift descent treading the screes took us back to camp in less than twenty minutes from the top. After a meal we packed up and moved off down to the boat. Half an hour from the boat we found a cairn erected by Geoff where he had found my lost yellow mug. When we came to mounting the motor on the boat again we found that it would not swivel on its mounting. Eventually we managed to free it, though it was still very stiff. The fjord was quite rough, the north-west wind blowing up quite big waves, the biggest I had been in since our very first trip. However now we knew the boat better and I was much happier with her performance in the seas. The journey was cold, and became rather tedious, so we were greatly cheered at the far end to be greeted with cups of steaming Horlicks.

Tuesday, 16th August

The day was spent in and around base, doing maintenance work like washing clothes. Results were booked, Geoff had drawn out the triangulation and I wrote some of the report. After a large evening meal I bet Geoff and Pete that I could still eat an Xmas Pud before 10.00 p.m. This I managed with only seconds to spare.

Wednesday, 17th August

A beautiful clear sunny morning. Now we were back to a normal day and night routine, which is advisable because the light at midnight is getting rather poor. Martin and Geoff crossed the fjord and took bearings from Tolstad. Pete and I continued our messing about at base. In the afternoon I conceived the idea of cooking a large really high-class meal for the others. The menu read as follows:

(See next page ...)

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(See next page ...)

GRAND HOTEL, DICKSONLAND

M E N U

Mercredi le 17^e aout 1960

Soupe aux Champignons

Petit Morceau de Tuna au Ryvita au Margarin

Viande de Cochon Rehydrolisee, Frite

Legumes Assortees

Grand Potage de Macaroni, Maitre d'Hotel

Specialite de la Maison - Gateau Dicksonfjord

Deuxieme Dessert - Grande Surprise

Biscuits - Fromage

Le Cafe

oOo

THE TOASTS

The Queen and the King	Mr. Peter Smith
Special Mentions	Mr. John Fraser
The Gillette Razor Company	Mr. Geoffrey Topping
The South Pole	Mr. C. Martin Smith
Our Supporters	Mr. Peter Smith

them we found they were loggers, even grubbier than we were. On we went to the Kapp Wjik hut, where we landed Geoff and his supplies. He would stay here while we went to Longyearbjen with Martin. This we continued with straight away, chugging steadily down the coast. I discovered that my Vito camera had developed a fault in the shutter release and spent some time trying to repair it with two pocket knives. Just before we reached the Saunedalen hut we noticed a darker area of sea ahead and to our astonishment it proved to be rougher water. A short halt to investigate the hut and refuel then we were off on an attempt on the serious section, across the main fjord to Longyearbjen. Once we were out away from the lee of Kapp Thorsden the sea was much higher and we turned back. The shore was lined by low cliffs here, but we found an inlet cut by a stream and ran the boat into it. Above there was an excellent camp site, somewhat windswept but a fine vantage point for inspecting the fjord. (Camp Wave). That night we saw the loggers out in the fjord, coming back for shelter.

Friday, 19th August

It was still windy and dull in the morning. I strolled along to Kapp Thorsden to look at the sea to the east. It was running high. I found an old notice board in German dated 14/7/14 which might have been a stake claim. Meanwhile Martin had wandered north and had seen through the glasses that the Norwegians were anchored near the hut. He proposed that we should go to them and ask for a lift for him, and Pete and I could come over in our boat, if and when the weather cleared.

So we got his stuff together and boated up the coast to their boats. When we looked at first there seemed to be nobody on board and we went off to look in the hut. As there was nobody there either, we assumed they must be sleeping somewhere on board and

hadn't heard us, so we thought to hang around a little until they woke up. Quite soon we saw signs of activity and went out to speak with them. After some discussion between themselves they agreed to take Martin and we all sat in their cabin and talked, mostly in German which one spoke very well. Then Pete and I went back to Camp Wave and transferred it along opposite the logger to let Martin sleep nearby. They didn't intend to start till next day. We got organised and made our stew, entertained the boy from the logger-boat and were preparing to settle in for the night when two Norwegians arrived and said they were leaving their logs and going back without them and that they would tow us across. We gladly accepted this offer and helped them to tow the logs into a lagoon formed where the river entered the sea.

Saturday, 20th August

Just after midnight we set out for Longyearbjen on board one of the loggers, towing our boat behind. The engine was a big cylinder type which was started by roasting it in a great roaring jet of calor gas. It was quite rough out in the fjord and we made slow progress, sometimes throttling down for the extra large waves, which usually came in threes. At half-past-three we arrived and transferred all our stuff to our boat before going up Adventfjord a bit, in search of a camp place. This attempt was in vain, since we soon grounded on mud, and had to return to a shack we had noted, a filthy place, where we passed a few hours in sleep till the morning.

We breakfasted quickly on lifeboat biscuits and cheese then went into town. First we called at the Governor's office, where we collected some mail but before we could arrange transport we had to see the Store Norske people. So we walked along the road going inland up the valley to a group of buildings on the north-east side.

The surroundings were quite mountainous, with steep glaciers pouring down ahead of us. The place was extremely ramshackle, with disused ropeways and buildings, left derelict and overhead wires running haphazardly everywhere. At the Store Norske office we met a very helpful student working there who told us about the shipping situation. Martin could go next Thursday to Voda east of North Cape and sail right down to Bergen. We would catch the Ingerfern on the 7th - 9th September and go with her to Harstad. From the office we got a high speed lift in a landrover to the Post Office, where a phenomenal amount of money was spent on postcards. It was a lovely building inside, in the modern Scandinavian style, obviously a community centre. Then we called at the shop, a tourist shop then full of passengers from the Lyngen which had arrived that morning, and bought some extra film for the photo-theodolite. Back to the boat where we all had a tin of plums, then Martin took his stuff up to the Store Norske office while Pete and myself sailed along the coast, pitched the tent, had a meal and wrote mail. There was cliff running right along the coast, but quite near the town a gully breached it and we could climb up (in bare feet since Wellingtons slipped on the slime) and pitch the tent on the grassy slope above. Just after four o'clock we struck camp and went to see the Governor's Assistant, to fix up about transport from Dicksonfjord. He showed us the "expedition's room" where we wrote our missives till about half past six. Two members of the Norsk Polarinstitut were staying there who had been at the Kapp Wijk hut.

At seven o'clock we headed the boat out towards the north headland of Adventfjord, rounded it and continued along close to the rocky coast. In Adventfjord the wind was south-east and even in that short fetch had piled up some quite big waves, but here we were in fair shelter. We decided to camp for the night and chose

the spot where the stream met the coast, again a case of the stream forming a breach in the cliffs, which here were steep, loose and very unstable. We came in over clear water floating high above deep forests of seaweed and came in to a steeply shelving beach consisting in large part of coal shale. Above the river we discovered a beautiful level shelf ideal for our tent. Behind us the river tumbled steeply down from a grassy corrie. The stew was boiling when we noticed a boat coming along the coast; it turned and came in to our beach. The two Norwegians on board said they had seen our tent and had come to find out who it was. They were out to hunt birds, starting at midnight when the close season ended. We had an interesting talk with them, and gave them some of our curry stew. Like some Svalbard-ians we had already talked to, they were very keen on the place, especially in winter. They agreed with us that the weather was moderating and suggested that we try starting across the fjord at about three next morning. When they left we returned to our discussion of the weather, and biscuits.

Sunday, 21st August

As the sea became less and less rough, we decided to attempt a crossing forthwith. Camp Coal was swiftly struck and the boat loaded. At first we intended to make for the point to the north so that we could see how the sea was running before committing ourselves far out, but it was fairly calm so I steered right out, towards the Billetfjord instead. The time was 12.20 a.m. Twenty minutes later we got out of the lee of the point in the full force of the waves coming from Tempelfjorden. They were quite big and I had to turn the boat more to the north to avoid being broadside on. We smacked into them throwing up lots of spray, sometimes rolling alarmingly in the troughs, and I suggested turning back to Pete. However he thought it would go and we carried on. Shortly

afterwards we changed places as it was very tiring at the helm. The waves seemed to be coming more from the east now, and we were going almost straight up the fjord, not moving towards Dicksonland at all. We should have run up the coast more before striking out.

By now I realised that as long as the waves grew no worse we would be quite O.K. Big though they were and even breaking in places we had still not shipped any water, and the spray lashing our faces was more spectacular than dangerous. When we had gone for an hour into the waves, we turned and ran with them, diagonally towards Kapp Thorsden. The motion was quite exhilarating, the big waves swelled under our stern heaving us forward in bursts of speed, passed under and left us rolling in the trough with the Atco still plugging away valiantly. Usually we made diagonally across the waves quite easily, but for big ones had to turn stern-on to the approaching wave. Behind us our wake was an erratic track twisting and swaying behind us as the waves rolled beneath it. All would be well if the motor continued to produce it; I didn't fancy the oars much in that sea.

Again we changed places; the vibrating handle of the motor was extremely tiring, and the steering was quite heavy with these following waves. Slowly the shore of Dicksonland drew nearer. We decided to land north of Kapp Thorsden in order to refuel, and steered towards what appeared to be a boat drawn up on the shore. When we made our landfall there, we saw it was the hulk of an old wooden barge. We didn't delay long now, since the waves were beating strongly on the shore, threatening to swamp us. However we managed to push off again and were soon making very good progress towards the point. It felt almost like a speedboat when the big waves thrust us forward, and Pete thought we might be making twelve knots then. The wind was rising and the waves growing. Sitting at the helm my left hand on the gunwale was

constantly dipping in the water, so our freeboard was little enough.

Soon we rounded the point, and got into calmer water, though a big swell still persisted to help us forwards. I relinquished the helm to Pete. We had done it. I brought out the chocolate and we celebrated our safe passage. Though I must have been cold before, I hadn't noticed under the nervous tension of the crossing, but now I began to feel a bit chilly. It was pleasant though to relax as we chugged speedily along the coast still helped by the swell. At 04.20 hrs. we arrived at the Kapp Wjik hut, where Geoff, not at all surprised to see us, made a nice hot brew, and we tumbled into bed. Got up vaguely in the morning and staggered about for a few hours, reading the newspapers before returning to bed. My right hand still felt stiff from the motor handle.

Monday, 22nd August

Nothing much was done by all. We found a large tin of oatmeal in the store and this was used to bake oatcakes. The baking was done inside a square flat tin with a round lid as the oven, this containing a cut-down 1 lb. lifeboat biscuit tin seated on some pebbles to raise it off the bottom. The mix went into the small tin and the oven put over the stove for an hour or so. If the mix were too wet, the result tended to resemble baked porridge, if it were dry it seemed more like oatcake, though according to Pete it became in this case simply baked oatmeal. I felt enervated and too lethargic to do anything much, especially in the evening. Read the M.G. Weekly sent from home, but could hardly concentrate on even this. Pete felt much the same.

Tuesday, 23rd August

A bright breezy day, so we decided to bash up Kongresfjellet

as soon as the low cloud lifted from it. The waves were still quite big from the S.W. wind. During the night we had had to get up and drag the boat from its clutches farther up the beach. During the morning I strolled along the beach to Kapp Wijk, taking photos of the birds. Near the hut there had been for several days a large plaintive glaucous gull which Geoff thought might be the mate of one which our two Norwegian characters had shot and left beside the front door. Today it was regularly flapping heavily into the air from downwind, cruising sedately several feet over my head, wheeling round and banking in to land again, forty yards away. This afforded me several excellent photographic opportunities. It was a bracing walk, along the narrow shingle spit with the choppy blue sea on the south side stretching off to the distant green ice-cliffs of the where it met the sea. The sky was clouding as I returned to the nice cosy hut, to be met by the aroma of baking oatcakes.

Wednesday, 24th August

Weather worse again, dull and rainy. Pete and Geoff rebuilt the stove on more efficient lines by filling various spaces with stones and erecting baffles so that the flames didn't go straight up the chimney. I cut firewood, then baked some bread on the stove. In the storeroom were several bags and casks of flour, and also a tin of dried yeast. I made up a mix of this, which I baked in the same way as before. However the yeast may not have been yeast in the tin, or something went wrong, because the bread didn't rise. On the outside it formed quite a realistic crust, but the interior consisted of a damp heavy mass which Pete likened to porridge. The day passed placidly with baking, arguing, eating etc. It felt rather as if the expedition were over somehow. This long spell of bad weather showed us how lucky we were to have got most of the work over, before Martin went. It was nice though to be



Kittiwakes at K. Wijk



Loading the boat near Ganger Rolf

spending it in a warm and commodious hut like this. It seemed to be designed for both winter and summer use, with double windows and two ante-rooms to be passed through, before reaching the living room. Put the porridge on to pre-cook before going to bed. Only one portion now, Pete and Geoff both having returned to Scott's paste.

Thursday, 25th August

Weather still cloudy, but fine enough to permit us to try Kongresfjellet. It was an easy-angled walk up earthy scree slopes to the cairn, I managed a fairly complete face left round, but Pete was lucky to get face rights on the main stations. We waited for some time in the mist and snow for it to clear, Geoff singing happily to himself and skipping about meanwhile, but it was no good. We packed up and made a swift descent to the hut and Olympic Dinner. The wind had got up and was driving some of the biggest waves we had had yet on to the beach, an excellent reason for postponing our return to base. I looked for icebergs which might have drifted across the fjord but was disappointed.

Friday, 26th August

The fjord was calm when we woke, and we had a pleasant trip back to base, stopping off at Kapp Smith to investigate the hut there. It was like ours, only even smaller, and more dilapidated. After a meal at base I went along the beach launching various logs into the water, which I then went out for in the boat, returning with five in tow. Some we intended for firewood, but others were cut up and used for a slipway for the boat. I tried pulling the boat up this single-handed, using a pulley system of ropes and carabiners, but couldn't manage. Pete and Geoff meantime had cut each other's hair, with slightly odd results.



Looking W. from Ganger Rolf



Plane tabling on Ganger Rolf

Oxasdalen for T 508 enjoying the change to sunshine instead of the usual. Found a large cavity in the ice sheet at the top of the valley with a vertical back wall and overhanging front roof of ice in the side of the sheet next to the rocks. Weather deteriorated as we slogged up the ice-slopes to T 508, now covered in soft powder snow, not deep. Once we got to the top the trouble was that there was only work for Pete on the plane table, so Geoff and I just messed about, giving him conflicting advice. The weather improved just as we left, and we had quite a sunset effect over Tolstad on the descent. I discovered that my exposure meter was dead. After supper the sunset was much finer, our first real one here and everyone took photographs of it. Then Pete and Geoff set to, on the boat and gave the bottom a second coat of tar.

Tuesday, 30th August

Too good to be true, sun again on the tent. After all we had said about having had all the good weather for the summer and that winter was near, this fine spell was very unexpected. A pity we should have to use the boat, but Geoff and I would have to, to go back to re-do Kongresfjellet, and take the photos we missed before. Pete went to plane table up Hugindalen meanwhile.

We had an easy run south along the now familiar coast and beached the boat on the north side of the Kapp Wijk peninsula. The beach was a wide expanse of shingle and we pulled the boat right up to be clear of the northerly waves as the tide was rising. We had brought some supplies to be left in the Kapp Wijk hut but thought it better to carry on there after our climb, if the weather was still O.K. since the motor was making sick noises. Near where we landed were the remains of a Norsk Polarinstitut hut and camp, including a vast number of empty whisky bottles. We made off across the undulating gently rising moorland towards our summit.

In the hillside of Heimenfjellet a river had cut a steep gorge and set of waterfalls, one of which was crowned by an arch about thirty feet across. We could not see if it consisted of ice or rock. Lots of geese were flying about near here. We both felt a bit lethargic and only after a number of stops did we eventually scramble over the final rocky capping layer on to the plateau. Conditions were perfect and we spent a leisurely time doing all the necessary. It was 8.15 p.m. before we started down again. Then we went round to the hut in the boat; it seemed to take ages to cover what had not seemed a great distance from the top. We left ten gallons of paraffin, two tins of Ryvita, one of Complon and ten pounds of sugar, and took some oatmeal and two bars of dates we had left before. Then out on the water again, getting a bit fed up with it, and not relishing the long journey back. The motor sounded very sick and faltered alarmingly just as we were rounding the Kapp again, but it recovered and went on. The weather was still quite perfect; a sky absolutely without cloud is rare, but we had it then. The sunshine had disappeared, leaving only a golden glow in the northerly skyline, soon merging into the pale, almost colourless blue of the sky overhead. Then if the eye travelled right through the zenith, descending to the south, it turned green, through yellow to a broad band of red extending across the southern skyline. Then under this another band of grey-blue - perhaps the night further south? - and then the pallid mountains far across the sea.

I was in an unappreciative mood, however, tired, cold and starving, in no mind to be glad at being in such a fine situation. The birds were very active around us, and we saw a skua, a black hunter pursuing a gull, following its twists dives or turns till they were both out of sight. A seal, too, poked an inquisitive head from the water to inspect us, and at Geoff's whistle sank

under again, curiosity satisfied. Now there was no sign of the big flock of eider duck we had seen before in the distance, hundreds of them flapping fiercely about in the water; Geoff said they were in a moulting stage and unable to fly.

At long last, in to the familiar beach. Crouched in the prow, it seemed to me that the water was unusually clear, and we floated in over patches of seaweed and sand about ten feet under at this low state of the tide. Pete had a meal ready, another of his curries. It had been cooking since 11.00 p.m., four hours ago.

Wednesday, 31st August

Nothing of great importance done today, as we decided to take the chance to catch up on our personal tasks. Mine was laundry. Beautiful weather again, fine clear warm and calm - of course it is warm only when there is no wind when air temperatures are around 5° C. We had a stone-throwing competition on the beach. The sunset was exceptionally fine and at midnight we were all dashing about taking photographs looking towards Lykta. It threw a black reflection towards us across the ruddy-tinged water.

Thursday, 1st September

This is the beginning of the end, packing begun. I took the photo theodolite up the hillside to finish off a film and took five exposures going from 90° to 210° east of Tolstad. Some clouds appeared in the south and insidiously worked up the fjord, so that by evening the sunshine was replaced by the familiar cloudy weather. That night was our darkest yet. Big argument about whether or not thoughts were abstract, and if it was possible to think about non-material things.

Friday, 2nd September

Packing finished, labels written, destinations painted on

crates etc., all in rather dull weather. I washed, in preparation for our impending visitors. Pete had a big bonfire of all kinds of rubbish.

Saturday, 3rd September

Day of waiting Number One. Dullish weather so sat in hut. Probably made bullet pud.

Sunday, 4th September

Day of waiting Number Two. Ditto.

Monday, 5th September

Day of waiting Number Three. Ditto. Also made and lost two wagers. Argument again about whether the mind is mechanistic. We had a kind of running wager about when the Norwegians would arrive, with an Xmas Pud. as prize. I had twelve noon till midnight unsuccessfully. Now as the Pyramiden tent was down and packed I was sleeping on the bearskin in the hut. Finished Sherrington's book but will have to re-read. Continued with 'Sons and Lovers'. Date bullet pud.

Tuesday, 6th September

Day of waiting Number Four. Still dull. Made my big bet, about surviving in London on the Expedition Diet. Strange to be sitting in this hut in Dicksonland - could be anywhere. Enormous argument in the morning, about whether or not our Atco motor could pull a seventy-five ton barge at two miles per hour. Also discussed expeditions, food, etc. Odd when I break with the intense world of Lawrence's in England to go outside into Dicksonland. Then I look up the long valley across the fjord; it is there all the while and none of us will ever be there.

Wednesday, 7th September

Day of waiting Number Five. Dull, strong south wind again. Are they coming at all? Cut firewood. Today discussed, didn't argue, though Smith did his best.

Thursday, 8th September

Day of waiting Number Six. Big discussion after breakfast, developing the theory of cuddle factors. This was quite well advanced when Pete went outside and noticed a ship down the fjord. Thereupon we set to and completed preparations and were sitting waiting as she sailed up the fjord to a little way beyond us before stopping. It was some time before she eventually turned and steamed towards us. The mystery was resolved when they told us later that they had been looking on the west side of the fjord, couldn't see us, and radioed back to Odd Skog in Longyearbjen. The Nordsyssel came to about 200 yards off the shore and we ferried the kit out in the boat. Our 'third nignog', the Governor's Assistant we had dealt with in Longyearbjen, was on board. He was a tall gangling creature who seemed to have inadequate control over his limbs. He showed us in to the saloon, all french polish and cushions and there we reclined watching our familiar Lykta receding into the distance.

The ship tried cutting straight across the shoal at the mouth of the fjord, which we had always carefully avoided even in our little boat, so it was no surprise when she suddenly cut engine and turned sharp to port to avoid it. On the way out they had tried to land a stove at the Kapp Wijk hut but it was too rough then. But now it was better, and our boat was used, Pete going at the engine. One after another Norwegians piled on board till there were five of them on it. As they went off they all looked like a group of men sitting in the water, as the boat was barely visible.



Camp Wave



The arrival of Nordsyssel

Once this mission was completed, the journey to Longyearbjen was quite short and we passed the time talking to the third nignog and having tea. We went to bed that night in the Expedition House.

Friday, 9th September

Spent the morning getting our arrangements made. Met Olav Versvik, one of the hunters we met at Camp Coal, and he invited us to the Mess that evening. We spent it in his room with some of his friends, carrying on some quite complicated conversations - no language difficulty at all. Afterwards when everybody else had gone off he showed us his slides.

Saturday, 10th September

Final arrangements made, food, paraffin and petrol disposed of to Olav and his pal and Odd Skog. At about 8.00 p.m. we left Longyearbyen on our last boat trip, across to the loading wharf. It turned out to be quite an exciting little trip, since the wind was very strong and even in the short fetch available had knocked up some quite big following waves which made the steering extremely heavy to handle and tried to sweep us broadside on. We beached in the lee of the Ingerfem, unloaded, and dragged the boat along to its resting place beside the other Cambridge boats. Then over the soft coal dust carpet under the rumbling coal loader to the pile of our equipment which we set about loading. Then to bunk on board.

Sunday, 11th September

Breakfast began just after we cast off. We spent most of our time on deck as we went down Isfjord, looking back on Dicksonland and surveying from close quarters some of the mountains we had so often gazed on from afar during the previous weeks. Soon we were out in a bigger swell and I began to succumb, and was laid low before lunch.

Monday, 12th September

Laid low.

Tuesday, 13th September

Laid low.

Wednesday, 14th September

In to Harstad at midday. Arranged travel for me to Bergen via Oslo in an attempt to catch the Leda on the 19th.

Thursday, 15th September

Left Harstad by 'bus for Fauske.

The other two left on the coastal boat but since this would not connect with the Leda at Bergen on the 17th, I continued by land. 'Buses and ferries to railhead at Fauske. Overnight to Trondheim.

Friday, 16th September

Trondheim - Oslo. Overnight to Bergen.

Saturday, 17th September

Failed to get on Leda. I tried various subterfuges, e.g. walked up the services gangplank only to be repulsed by a large sailor who directed me to the passenger one. **Tried walking up** the passenger one, marching up to the officer taking the tickets and asking where the purser's office was. **This I thought would get me** on board, and once on I was as good as in Newcastle. However he wouldn't let me on without a customs card, so I was reduced to going to the ticket check point in the usual way, where they said to "wait over there" in case there was someone who didn't turn up. They all did. I went off in disgust to the Y.H.

Sunday and Monday, 18th and 19th September

Tramped the streets (and hills) of Bergen. Visited Art Gallery (Edward Marsh and J. C. Dahl), Aquarium (assorted fish, crabs, shrimps), Historical Museum (medieval wood-carving, gallon-sized beer mugs), Maritime Museum (dugouts onwards).

Wednesday, 21st September ⁶

Sailed (with the others, who had caught up) on Leda. Met Scottish Physiological Expedition complete with wives and child.

Thursday, 22nd September

Arrived Newcastle 7.00 a.m., London 4.00 p.m.

SUMMARY OF EXPEDITION

All work finished - triangulated about 250 square miles and did a little plane tabling.

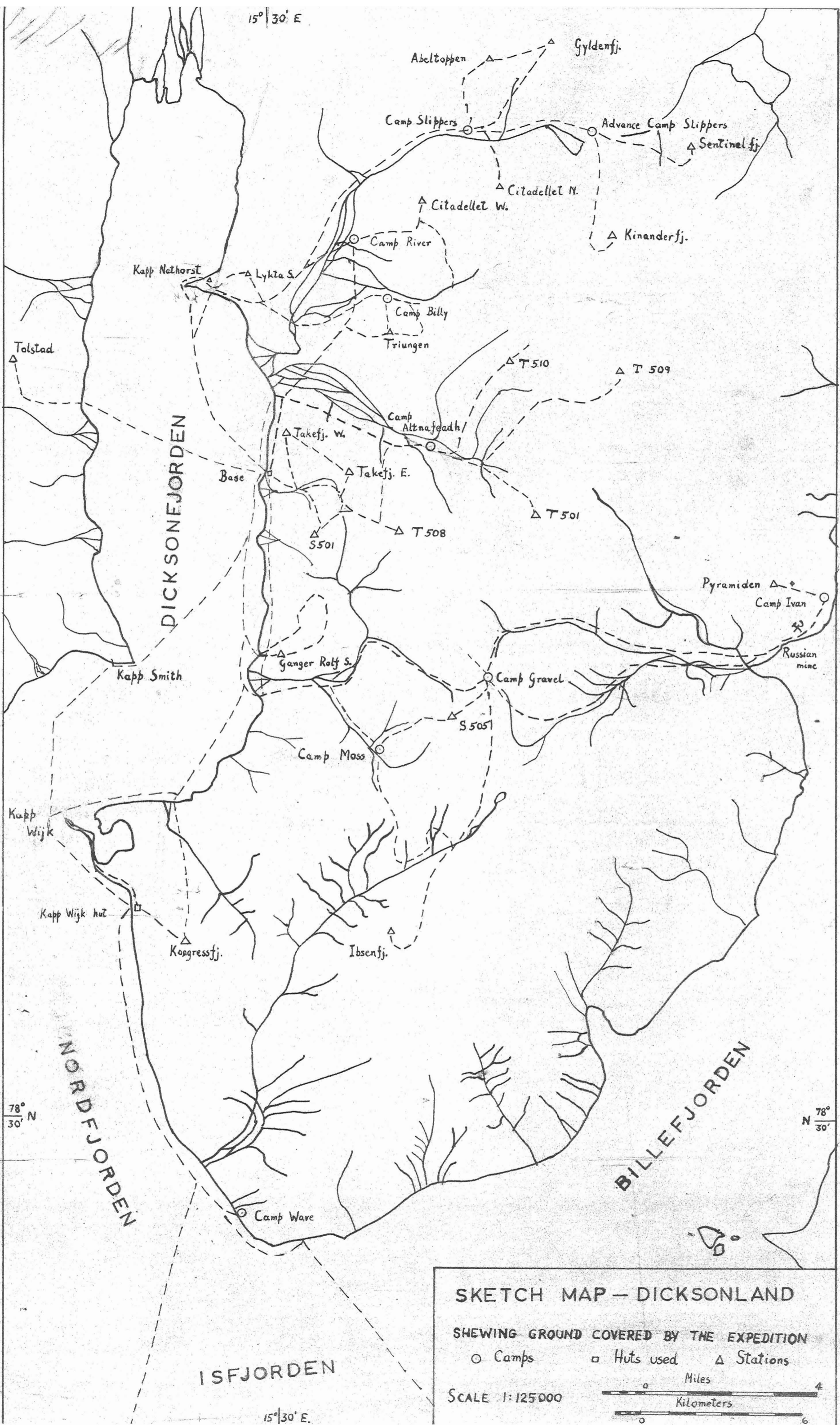
Svalbard a good place, though Dicksonland not typical and in fact less interesting than most.

Took about two hundred photos, colour and monochrome. Both cameras and the exposure meter developed faults. I exposed my last colour film by pulling on a thread tied to a lever in the shutter.

Time in field - two months. Time away $11\frac{1}{2}$ weeks.

Unpleasant to be back again in traffic, of all things.

I am not so sure that I will "enjoy the amenities of civilised life with more than the usual zest." What about the amenities of uncivilised life?

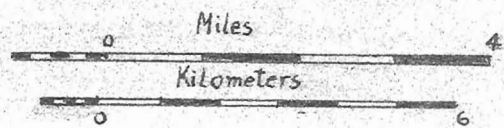


SKETCH MAP — DICKSONLAND

SHEWING GROUND COVERED BY THE EXPEDITION

○ Camps □ Huts used △ Stations

SCALE 1:125 000



SVALBARD

1: 2,000,000

0 50 100 Km.

80°

79°

78°

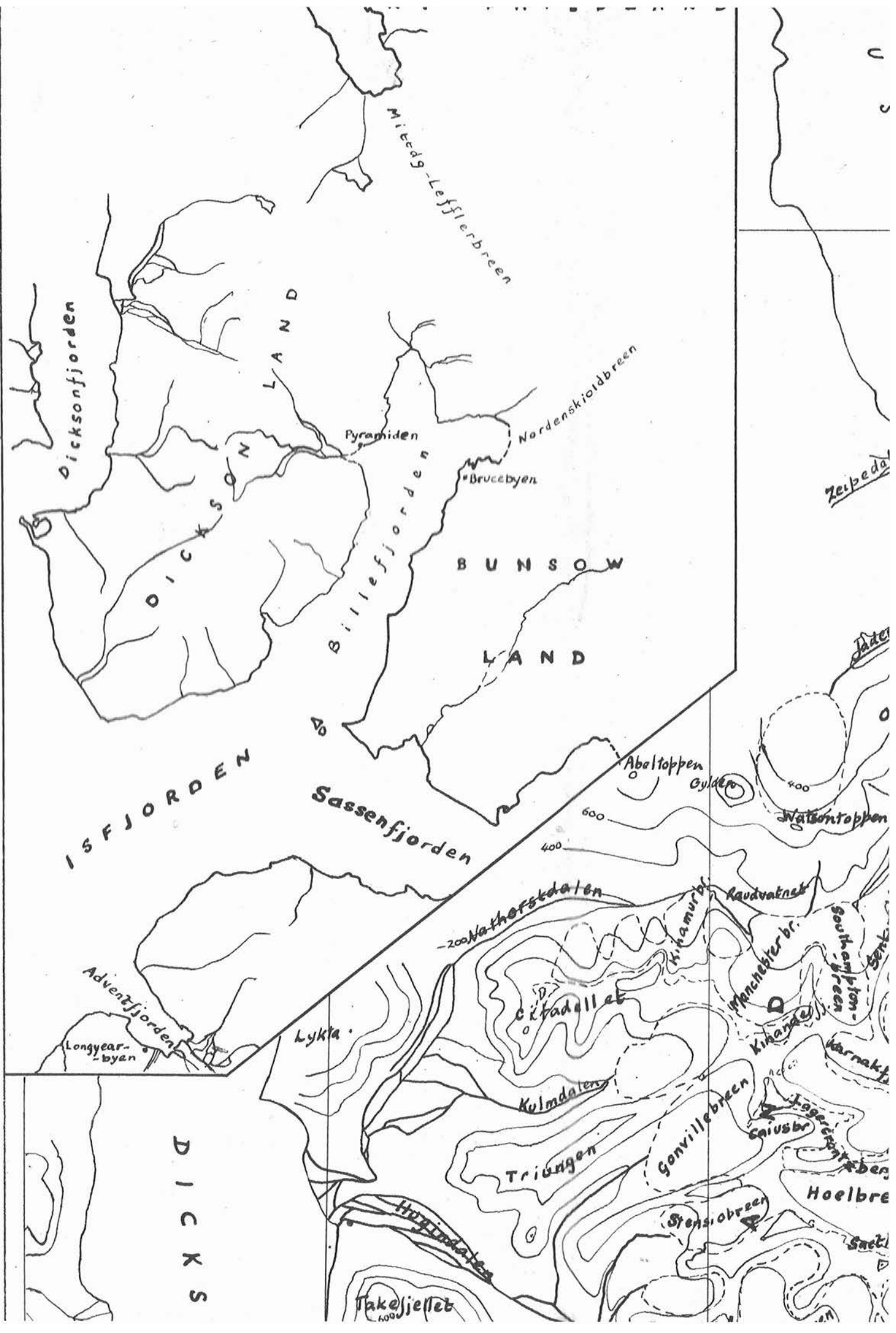
77°

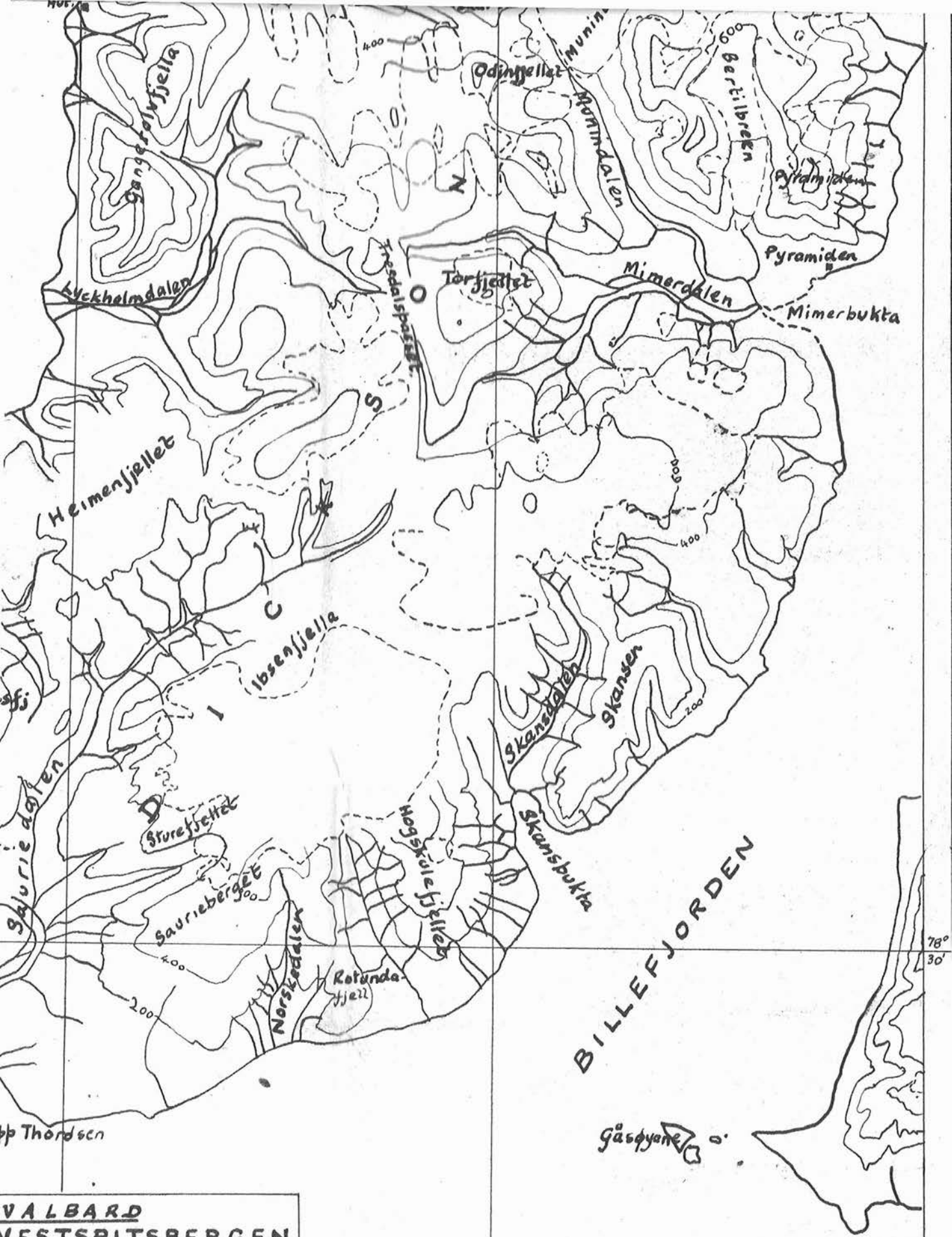
15°

20°

25°







VALBARD
VESTSPITSBERGEN
 Harland's 1949 map.

Scale 1:125,000

