

was blowing, and it was overcast. In the afternoon Marr, Davies and I set up one of the pyramid tents on the snow patch outside the house to see that it was in order.

Thursday, 14 September. Ashton and I went over to see the Weddell seal and its pup on the bay ice this forenoon, it being calm and sunny, and I took some more still and moving pictures of it..... I developed the latest of my Leica films in the afternoon..... There was a slight snowfall later on in the day..... Final preparations are being made for the forthcoming trip, scheduled to start, weather permitting, next Monday.

Friday, 15 September. Marr and Davies hauled the dinghy up out of the ice in the boat harbour, in case it may have to be used to fetch us on our return from the sledging trip..... I spent the greater part of the day making photographic prints..... The weather was dull and moderately cold..... Several long code messages came through from Port Stanley on the subject of arrangements for the forthcoming season; the Colonial Office has not been able to find a suitable ship to take us to Hope Bay, and suggests that the "Fitzroy" might take the stores to Deception, whence they could be ferried across to Hope Bay by the SCORESBY in several trips; two or three members to remain at Base A during next summer, after which it is to be vacated and left unoccupied; one member and two volunteers from Stanley to spend the summer on Signy Island, South Orkneys. The Governor of the Falklands rightly pointed out that the scheme of ferrying the stores from Deception to Hope Bay by the SCORESBY was impracticable.

Saturday, 16 September. A violent westerly gale blowing all day. Preparations for the sledging trip are continued. In the evening I sewed a small pair of slippers out of sealskin; the sole is formed on a wooden last to draw it up at the edges, and the upper is cut out of one piece. Am working also on a second larger pair.

Sunday, 17 September. West wind still blowing strongly, but barometer rising and sun breaking through. Davies and I went over to the penguin rookery for skiing practice, the latter also to try out a new brake he has invented for the toboggans; the loop of rope which acts as a brake is held out forward by a line which passes along a ski stick, the end of which is held in the hand and serves to guide the toboggan; on coming to a steep downhill slope the line is released and the rope brake is carried backwards underneath the toboggan and takes effect. It was found to work satisfactorily..... The strong west wind of the last few days has driven large quantities of broken pack and brash ice into the bay of Port Lockroy and the curve of Peltier Channel..... Up on the penguin rookery I found broken fragments of lichen (*Neuropogon* and *Umbilicaria*) lying on the wind-swept surface of the snow; they must have been transported either by the wind or birds, and I consider the former the more probable.

Monday, 18 September. It was fine today, calm, although overcast, and so we made the final preparations for the *departure* departure on the sledge trip to be undertaken by Marr, Davies, Taylor and myself. The two sledges, one with the recording wheel, were loaded with two tents, rations, sleeping bags, cooking outfits, surveying equipment, etc., before lunch, and in the afternoon we got into the canvas sledging harness

put the sealskin covered skis on our feet, and dragged the sledges each with a load of over 500 pounds over the sea ice onto the penguin rookery. There the going was so steep that two men could not drag the sledge up, and we had to double up, all four pulling one sledge up to the top, and then returning for the other. Farrington came over and gave us a hand by pushing and guiding the sledges from the rear. When we had both sledges up below the steep snow bank leading up to the glacier, we offloaded them, and carried the stuff piecemeal on our backs up onto the glacier, then reloaded the sledges, lashed them down, and left them for the night in shallow trenches dug in the snow, in case a gale should spring up in the night. Then putting on our ordinary skis, we skied down the rookery and back to the base for supper and a night's rest.

Tuesday, 19 September. We started off on our skis after breakfast to the rookery accompanied by Ashton; the weather was not promising, a strong easterly wind freshening all the time and plastering us with drift snow. When we got up onto the glacier, it was almost a blizzard, and after a consultation, we decided to turn back, postponing the commencement of our trip until an improvement set in; so we returned to the base. In the afternoon the wind dropped, and snow fell fairly heavily; I put in some skiing practice on the slopes from the top of our island down to the sea ice.

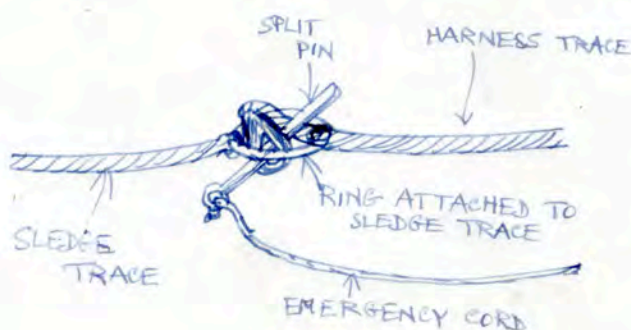
Wednesday, 20 September. The weather was clear this morning, with a slight southerly wind. Marr, Davies, Taylor, Ashton and I skied up the rookery to the place where the sledges had been left, and putting on truger and the canvas harness, started pulling one of the sledges up the glacier, with Ashton at the rear guiding the sledge. It was a stiff drag. The weights of the sledges and their loads were 680 lbs. and 670 lbs. respectively, and they sank deeply into the soft freshly fallen snow. At the survey flag of the 1st May we stopped to read the sledge meter and take some compass bearings, then pulled on to near the summit of the glacier opposite the Ridge Mountain. After we had been there a few minutes resting Back and Farrington came up on skis to join us pulling one of Davies toboggans with two empty boxes and the lunch on it. We put on our skis, which were loaded on top of the sledge, and skied down again to the second sledge; the running was slow on the soft deep snow but quite pleasant. Again we put on truger and harnessed up, this time with Farrington also pulling in a light toboggan harness, and Ashton and Back at the rear. The sun shone brilliantly on us as we sweated up the 460 feet to the top, the distance being about one mile. At the top we again took the altitude (610 feet above sea level), the temperature (-5.5°C) and some compass bearings. It was warmer up here than down below, an example of what meteorologists call an inversion. We had lunch after Back had returned to the Base. Farrington then went back also. Marr, Ashton and Davies then unloaded all the spares and duplicate material off the sledges, making a cache of them in a shallow pit in the snow at this spot. Meanwhile Taylor and I skied off towards the buttress of Ridge Mountain, intending to get a sample of the green rock which we had seen there on 1st May, but we came to some obvious crevasses, and not being roped together, decided not to risk it, and returned to the sledges. The dumping of the spare material lightened the loads (including the sledges) to 460 and 455 lbs, respectively. This done, we returned to the Base on skis, arriving back there at 1700 hrs.

Thursday, 21 September. The weather was calm and otherwise favorable for travelling this morning, but a thick fog blanketed the landscape from a height of about 300 feet upwards, and it was decided not to shift the sledges any further as it would be impossible to take the compass bearings necessary for the computation of the course followed. The new undisturbed snow made conditions very good for skiing and Back, Davies, Farrington and I put in some practice in the afternoon on the rookery..... I sewed another pair of sealskin slippers in the evening.

Friday, 22 September. Marr, Davies, Taylor, Ashton and I started on our skis up the glacier about 1000 hrs., and ran into fog a few hundred feet up. Picking up the sledges we harnessed up two men to each, with Ashton pushing behind the heavier one, and went on for about a mile up the glacier by guesswork without seeing anything. Then the fog suddenly cleared, and we set a course around the base of Wall Mountain, towards the middle of Luigi Glacier. Back came up on skis, and helped by pushing the second sledge. After making the traverse around the base of Wall Mountain ~~by pushing the second sledge~~ we found ourselves confronted by a steep downward slope. Taylor and I with Ashton guiding the handlebars managed to get the sledge round the contour of the slope onto more even ground; the other sledge, with the rope brake attached, was taken straight down the slope, and on reaching the bottom it suddenly tilted over and sank deeply on one side; it had gone into a crevasse. We came over from our sledge to help, and a 50 foot alpine rope was attached to the trace line; on this line we all gave a heave to shift the sledge out of the crevasse when.....snap! the curved cowcatcher on the front of the sledge parted and broke, and the sledge settled even more deeply into the hole. The only thing to do was to offload it, and this Marr did, secured on the end of a rope; he passed the gear to Taylor, who passed it to me and I made a pile of it well up on the slope. The empty sledge was easily shifted, and we could now see the extent of the crevasse into which it had gone..... a 30 foot deep gulf about $2\frac{1}{2}$ feet across with vertical smooth walls of ice. The broken cowcatcher was temporarily replaced by a piece of rope. It was now 1600 hrs., and Back and Ashton took leave of us and started off home on their skis. Taylor and I harnessed ourselves to our sledge, and started pulling up the glacier, but the gradient was very stiff and the snow soft, and we only did about a quarter of a mile. Marr and Davies came up with their sledge, and we all hitched up to the first sledge containing the survey instruments, and commenced the long steady pull up the glacier. At about 1700 hrs. we were underneath the sheer beetling cliff of Wall Mountain, over 2000 feet high, and found ourselves among large scattered blocks of ice which impeded the progress of the sledge considerably. ~~But~~ Taylor remarked on these lumps, and I suggested that they were probably derived from ice avalanches from the summit of the mountain beside us; we looked up and sure enough, there was a huge hanging glacier of blue ice precariously perched on the top. We now realized that we were in a dangerous position, and exerted our strength to get further up and out of it with all speed; but it was too late. Less than a minute afterwards there was a report like a gun above us, followed by a terrible rumbling like thunder, and from the summit at which we had been looking up a moment before we saw hundreds of tons of snow and ice hurtling down 2000 feet of cliff face to our left. For some time, probably only a second or two, we stood still in our harness gazing in a kind of fascination at the destruction coming down to overwhelm us;

the white curtain dropping at ever increasing speed, with bouncing and hurtling ice blocks dimly seen among it as through a cloud of steam. Some kind of instinct made us throw off our traces and start running, but we had only gone a few yards to the lee of the sledge when it was upon us; ~~the white curtain dropping at ever~~ we threw ourselves flat on the snow. We felt a tremendous gust of ~~the~~ wind blow over us, and everything was blotted out by fine snow forced into one's eyes, one's ears and one's mouth. I covered my face with my hands, and thought of the ice blocks which I had seen coming down; surely it was our finish. Then I became aware that the wind had dropped, the terrible thundering noise had ceased, and one could see again. We had escaped. We picked ourselves up, white from head to foot with powder snow. My hat and mitts had been blown off me and were lying half buried about five yards away. The sledge was undamaged. We lost no time in pulling out of that dangerous place, and finally reached the crest overlooking the Danco Coast. We had had a hard day, and with the added excitement of our narrow escape, we felt exhaustion creeping over us, and were in no sort of shape to go back and pull up the other sledge and then make camp. Marr decided in the circumstances to make a dash back to the base on skis. We ate some biscuits and chocolate, and started off from the crest of Luigi Glacier, 1000 feet above sea level, at 1805 hrs. We slid along at a rapid mechanical pace in the deepening twilight, following the tracks of the outward journey. When we got to the cache on the Channel Glacier, it was almost dark, and we had difficulty seeing the tracks. Past the survey flag of 1st May, we saw nothing, skied on in what we took to be the right direction, and finally reached the sharp snow crest leading down to the penguin rookery. The other two were far behind, and Taylor remained on the snow crest to guide them down to it, while I continued on to the base to prepare them for our arrival. I got back to the hut at 2005 hrs., and the others arrived 20 minutes later. We had a meal of cold meat and tea and turned in, glad to get into our bunks.

~~Sat~~ Saturday, 23 September. Again a fine day, but as there were a number of things to be seen to, we remained at the ~~the~~ base. The crevasse into which the sledge had fallen yesterday had taught us that for eventualities of this kind, it was necessary to have some kind of quick release mechanism whereby one could instantly free oneself from the sledge harness if it should be necessary. Such a mechanism would be even more essential when threatened with avalanches. Finally such an arrangement was devised, consisting of an eye spliced into the harness trace and kept



in position in a ring at the end of the sledge trace by a split pin to which a line was attached, the other end of this line, marked with a piece of red bunting, being fastened to the front of the harness belt. The split pin was held in position by a turn of thin copper wire, and a sharp pull on the line brought it right out, the eye and the ring then falling apart.

Another thing we learnt yesterday was that the special ski bindings for use with sealskin boots were not necessary, the weather not being so cold as to justify them, and the time taken to take them off and on and the lack of control over the ski with them being against their use. Therefore we took them off, retaining the sealskin coverings, but replacing the metal fittings for use with ordinary boots. I tested them out thus in the afternoon on the penguin rookery, and found them as fast and, allowing for the extra weight of the skins, as easy to control as ordinary bare wood skis. In addition they have the great advantage of not slipping back when going up steep gradients or pulling a heavy load..... During the night another Weddell seal had pupped on the ice just off shore by the boat harbour, and was lying with its little one right across the ski track.

Sunday, 24 September. We started out on our sledging tour of Wiencke Island today at 1000 hrs. It was a splendid day, fine, calm and sunny. Davies went on ahead of us on truger, carrying a spare cowcatcher to repair the sledge. On his way up he visited the cache on the glacier and abstracted certain necessary articles, leaving a note written on the snow with a ski stick to let us know what he had taken. We headed round east to the entrance of Luigi (Thunder) Glacier, and at about 1300 hrs., joined Davies out in the middle of its south side. The sledge which had been left here was pulled well out into the middle of the glacier and we had lunch. The four of us ... Marr, Davies, Taylor and myself ... harnessed ourselves to the sledge and pulled it up to the summit of the glacier beside the survey sledge left there. We were all on sealskin skis, which proved very good for hauling. At the summit a thick fog or low cloud suddenly closed in, obscuring our view of what lay to the other side. Marr and Davies went on with the first sledge to make camp, taking compass bearings to keep on a straight route, while Taylor and I waited with the survey sledge at the summit, in the hope that the fog would lift and enable us to take some observations. We waited for an hour, but the fog did not lift, and so we skied down in the others' tracks, pulling the survey sledge and came on the camp about $1\frac{1}{2}$ miles down. The two tents had been pitched on a level snowfield, a few yards apart, and we passed our bedrolls, a ration box, pressure stove, etc. through the round entrance and prepared our supper. We were tired and everything seemed to be hopelessly muddled and cramped, for we had not yet learned the technique of arranging things so as to exist in comparative comfort, as I shall subsequently describe. After our supper of pemmican and pea flour boiled in snow water with biscuits, followed by cocoa, we pulled in the radio box from outside, and connected it up to get the 2100 hrs. BBC time signal and news, which came in distinctly. Then turning into our sleeping bags to get a night's rest, but the unaccustomed environment and hard lumpy snow beneath us did not make for sound sleep.

Monday, 25 September. We awoke from a poor night's sleep and lit the pressure stove to warm up the tent and thaw the hoar frost crystals formed on the inside of the fabric. After preparing and eating our breakfast of porridge and cocoa, we turned out at 1000 hrs., and Taylor and I went on skis back up to the summit of Luigi Glacier, carrying the plane table (we had left the range finder and tripods at the summit the previous evening). The weather was

fine and sunny, with a temperature of about -12°C .; the air clear except for a bank of fog lying in de Gerlache Strait between us and the Danco Coast of Grahamland. Taylor plotted the surrounding mountains on the plane table, while I worked the range finder. We returned to the camp at about 1330 hrs. and had lunch after which we again worked round about the camp with plane table and range finder. Taylor also took compass bearings on various features on the Danco Coast. Meanwhile Marr and Davies had straightened things out generally at the camp, and also mended the broken sledge by putting on the new cow-catcher. We had our supper at 1800 hrs, laid down our bedrolls and brought in the radio to warm up it takes nearly an hour's heating in the tent before it becomes active. With it Taylor received the 2100 hrs. time signal and checked his chronometer. The evening was fine and clear with a half moon. Temperature -14°C .

Tuesday, 26 September. Weather still fine, but dull, with a rise in the temperature (-5°C .), and cloudy over the mountain tops. Taylor and I started out at 1000 hrs., pulling the survey sledge loaded with survey instruments, and set a course slightly west of south round the buttress at the north east base of Luigi Mountain, and in the direction of Cape Errera. We were travelling on a fringing glacier at the base of the Sierra du Fief. After travelling $1\frac{3}{4}$ miles, traversing the slope of the glacier at elevations of from 300 to 700 feet. Below us the glacier was heavily crevassed in places, and terminated in ice cliffs going down into the Strait. We stopped at a point where we had a view of the south end of the Sierra as and Cape Renard on the mainland; to our right was the back of the Sierra du Fief, here a jumbled mass of ice falls and sheer rock faces, unapproachable. Below us lay a small snow capped island, Fridjof Island, and several smaller rocky islands, some with penguins visible on them. We ate our lunch and started surveying from here with plane table and range finder. After completing these observations, we reloaded the sledge and started back for the camp. As our route took us near the rock buttress at the base of Luigi Mountain, we thought it worth a visit, and went on skis as far up as the snow slope towards it would allow, then climbed up without skis to the rock outcrop, the altitude of which was about 700 feet above sea level, and collected some rock samples. The rock was of a fine grained basaltic type, varying a good deal in colour. No trace of vegetation was seen. In the morning on our way out we noticed some sea gulls flying high up round this rock buttress; they must have been about 800 feet above sea level. Returning to the sledge, we continued our way back towards camp, and Marr came out on skis to meet us and helped us pull back to the tents, which we reached at 1848 hrs. During our absence Marr and Davies had made a tour of exploration on skis to the north east of our camp, climbing up a small glacier between the Wall Mountain and a small mountain subsequently named Snow Comb Hill; from the top of this divide they had a view to the north of the island and saw an apparently passable glacier route through between the Wall and Nemo Ranges, also a more difficult route alongside the east side of the Nemo Range to the north.

Wednesday, 27 September. Cloudy and foggy today, and so we could not go surveying. In the morning there was a slight thaw (0.5°C above freezing); in the afternoon a west wind sprang up, with slight fine snow, and the temperature dropped to -3.5°C . Towards the evening the

the wind freshened to about 20 miles an hour with drifting snow, and the temperature went down to -8°C . We spent the greater part of the day in our sleeping bags. I labelled the rock specimens collected the previous day. The burner on the pressure stove in Marr's and Davies tent broke, and all attempts to mend it failed, and so after we had prepared the supper on our stove, Marr came over and fetched it for the other tent. Taylor plotted some of yesterday's observations on the plane table sheet.

Thursday, 28 September. During the night a westerly gale raged, and when we crawled out in the morning we headed into a deep snowdrift just outside; the east side of the tents were drifted halfway up. The west wind persisted, dropping slightly in the late afternoon. Temperature -10°C ., later in the day -8°C ., and in the evening -12°C . Again we spent most of the day in our sleeping bags, but after 1700 hrs. the visibility improved, the summits of the Danco Coast becoming visible, and Taylor took a round of theodolite angles on them. During the day Taylor persisted with the broken stove burner, and eventually contrived to improvise a repair by jamming a nail in the enlarged aperture to provide a small escape for the paraffin vapour. At 2030 hrs. he took a theodolite observation on a star, as the sky was clear above; I recorded angles for him, from inside the tent.

Friday, 29 September. The blizzard sprang up again from the west with increased violence today, reaching about 40 m.p.h. in gusts, and so again we lay in the tents all day, and I wrote a letter home. We have plenty of food, but our paraffin is running low and this together with the need for a spare pressure stove, has induced Marr and Davies to intend making a trip back to the Channel glacier cache for these replacements on the first fine day. Taylor worked out his star observation of the previous day.

Saturday, 30 September. The wind started to moderate about 0600 hrs. and by 1000 hrs. had died down to a breeze, with a temperature of -6°C . and rising barometer. The sky was cloudy, but most of the landscape was clear, and Taylor went outside to take a panoramic photograph while I prepared the breakfast. At 1300 hrs. Marr and Davies decided that the weather was fair enough for their trip to the Channel Glacier cache and started off on skis. Taylor took a round of theodolite angles on features of the Danco Coast, I taking them down and making a panoramic sketch to aid in their identification. Shortly after this fog and cloud again obscured the landscape, and we passed the time in the tent playing cards. At 1930 hrs., after we had finished our supper, I looked out of the tent flap and saw Marr and Davies returning down the glacier towing a toboggan, loaded with extra paraffin, spare pressure stoves and various rations. They had had an exhausting trip and were glad of the water I offered them. At the cache they had met Back and Farrington, who happened to be visiting it at the same time to bring up some extra foodstuffs. Farrington also had a telegram for me from home which Marr brought on to me.

Sunday, 1 October. The wind had started again from the east somewhat this morning, but the visibility was fairly good, and after breakfast, Taylor and I set off in a northerly direction towards the small mountain subsequently

named Snow Comb Hill, pulling the survey sledge loaded with instruments, to take a round of theodolite angles from there. We were pulling on truger with sealskin boots, and we had only gone about a quarter of a mile when one of my truger broke, and the bindings on Taylor's ~~also~~ also commenced to give trouble. We therefore returned to camp to get our skis. By the time we had done this the weather had again deteriorated, the wind getting stronger and driving clouds of snow, the visibility becoming very poor, and so we pulled the sledge back to camp to await more favorable conditions. Marr and Davies who had walked out towards the rock butress at the base of Luigi mountain to get some rock specimens, also returned on account of the worsening weather. The temperature was -3°C . all day, with a falling barometer. The rest of the day we spent in the tents.

Monday, 2 October. It was perfectly calm this morning. There had been a fairly heavy snowfall during the night, and the fresh snow lay about a foot deep. A thaw had set in ($+3^{\circ}\text{C}$), and the barometer was very low but steady. The visibility was poor but improving hourly, until again after lunch fog closed in, spoiling our plans once more. I went for a run on skis on the sloping part of the glacier to the north of the camp, and found that sealskin covered skis glide quite satisfactorily even on wet thawing snow. Marr and Davies came into our tent for a chat before supper and we listened to the radio. In the evening an easterly wind sprung up and increased in intensity during the night until the following day.

Tuesday, 3 October. A full easterly blizzard was raging, and continued all day at a speed of 30 - 40 miles an hour. We only left the tents once on unavoidable business, which was extremely unpleasant, as one almost immediately became covered from head to foot with fine driving snow. We spent the day reading, talking and playing cards..... One effect of the warmth inside the tent is to produce a subsidence of the snow floor towards the centre of the tent, so that we find ourselves lying in our sleeping bags on a slope, and tend to gravitate during the night away from the sides of the tent, to a position hard up against the ration box in the middle of the tent.

Wednesday, 4 October. The easterly blizzard continued all day with a temperature of -8°C . We ~~sp~~ spent the time practising the Morse code, reading and playing cards. In the evening, while preparing supper, I had the misfortune to upset a saucepan of boiling water over my feet, scalding them severely. I immediately applied Vaseline to them and dressed them with lint. The water had soaked right through my sleeping bag, and this presented a serious problem until Taylor solved it by kindly lending me a spare outer blanket which he was using to lie on, and fetching in his caribou skin robe from the ~~tent~~ sledge as an additional covering. With these and after taking some aspirins I slept quite warmly and comfortably, discarding my soaked outer bag, using the inner one to lie on and sleeping in the dry one lent me by Taylor, covered over with the fur robe..... Our wooden cased thermometer was accidentally broken by some one kneeling or treading on it in the snow outside, where it had been lying attached by a string to the tent flap.

Thursday, 5 October. All day long the blizzard went on blowing from the east, although not quite as strongly as yesterday. In the evening the barometer commenced to rise slightly. My feet are feeling better now, at any rate the pain in the ~~on~~ has gone. We are getting very tired of lying in our tents all day long, listening to the incessant beating of the wind against the tent fabric and the hiss of the drifting snow. I will take this opportunity of describing such a day as this in the tent. At about 0730 hrs. we awake and light the pressure stove to warm up the tent. Then we extract ourselves from our sleeping bags and open up the flaps of the entrance to have a look at the weather, and to fill the cooking pots with snow, large clean blocks of which are kept stacked within reach on the right hand side of the entrance. After putting one pot of snow onto the stove to melt, I open the ration box lying between us, and take out what is necessary for the preparation of the meal tins of oats, powdered milk, salt, sugar, margarine, cocoa or coffee powder, enamel plates and mugs, and spoons. When the snow has melted, I add the oats and make porridge, which is turned out into the plates and eaten. The second pot of snow is put on to make the cocoa or coffee, after drinking which we replace the tins and utensils in the box to get them out of the way. By this time it has become necessary to leave the tent, and we get on our sealskin boots, windproof trousers and coats with some difficulty in a lying or sitting posture, and creep out into the open. The worse the weather is the shorter our stay outside. For lunch we often used to have Marmite dissolved in water (hot) in our mugs, with broken biscuits added, and eaten with a spoon; also often a chocolate bar. Our third and last meal of the day was at about 1800 hrs., when, unless we opened a tin of some ready prepared food like beef and carrots, I made a pemmican mush out of snow water, pemmican, pea flour, margarine and canned bacon. The pemmican comes in seven pound tins, and is a hard brown substance of the consistency of beef dipping, with quite a pleasant meaty flavour. The peaflour serves to thicken the mush to a palatable consistency. This dish is followed by mugs of cocoa, and the utensils again put away in the box. We used to bring in the radio box from outside each evening to get the time signals and news, but soon realised the inconvenience of this proceeding with the snow that was brought in each time, and now keep it permanently in the tent beside the ration box between the two sleeping bags. Taylor has improvised a loudspeaker by putting the earphones in an empty tin biscuit box, suspended from the peak of the tent by a bootlace. (Tapes are sewn across the inside apex of the tent to support clothing and boots hung up to dry.) The weather prevents any attempt to air the sleeping bags, but despite their remaining closed all day they remain perfectly dry inside; the outside of the outer bag, however, becomes quite damp underneath from condensation of water vapour given off by one's body and penetrating out through the bags until condensed by meeting with the cold layers of material lying on the snow floor. This dampness caused us concern at first, until we realised that it was the normal state of affairs and did not get any worse, being kept at bay in the outer part of the sleeping bag by the warmth radiating outwards from one's body. I used to

sleep with full indoor clothing on, flannel trousers and woolen jersey, with a piece of sheepskin tied across my back where I am apt to feel the cold, and in very cold weather with an inner duffel anarak in addition. I never suffered from cold at nights, but in really cold weather I think it would be necessary to use an additional third sleeping bag. These bags by the way are made of balloon fabric stuffed with eiderdown; the inner one is smaller and fits inside the outer. Underneath the bags comes a layer of Sisalcraft paper, which we found to get rather wet and mushy and could probably be improved upon, and a *large* ~~bag~~ sheepskin which provides valuable insulation against the cold striking up from below. All this is finally enclosed in a canvas envelope which protects the sleeping bag from drift snow when it is rolled up and taken outside. Davies had waterproofed his canvas cover with linseed oil and found this to be a mistake, for the water vapour from the body, normally passing through the bags and porous cover and escaping, was trapped and condensed on the inner side of the canvas cover, making it unpleasantly wet; one should *remember* that the body gives off *daily* some 20 *daily* ounces of water from the skin..... We would usually turn into our bags and blow the candle out about 2130 hrs.

Friday, 6 October. The blizzard reached an estimated velocity of 40 - 50 miles per hour during the night, roaring and beating against the tents. These stood the strain excellently, showing no signs of any tendency to lift or shift. In the morning light we could see the shadows of the drift snow racing up and round the outer tent fabric like dancing snakes or flames. It continued thus all day, abating slightly towards evening.

Saturday, 7 October. The wind dropped during the night and in the morning it was more or less calm, with fairly good visibility. Taylor therefore decided to get on with the surveying. When I examined my feet I found large blisters upon them, and it was decided that I had better stay around the camp until they go down. The others took the survey sledge in a north east direction to a point on the side of the small mountain about $1\frac{1}{2}$ miles away, and from there took a round of theodolite angles etc. I spent the time doing odd jobs at the camp, such as shovelling away the snowdrifts from the tents, filling up the pressure stoves, airing bedding and preparing supper.

strong Sunday, 8 October. Bright and fairly clear this morning, but with a *strong* north east wind carrying drift snow along the ~~ice~~ surface. After breakfast, Taylor took a theodolite observation on the sun, I noting the times and angles. Marr and Davies went off with a steel tape to the station from which these observations were made yesterday, measuring as they went the distance between there and the camp for use as a baseline in plotting the positions of the features observed on the mainland. Meanwhile Taylor and I set out for the small mountain, Snow Comb Hill, located about $1\frac{1}{2}$ miles north east of the camp, pulling Davies' toboggan loaded with the range finder and my rucksack containing lunch and collecting materials. Taylor was on sealskin skis, and I walking in sealskin boots, my feet not being sufficiently healed to use ski boots. We went up the small glacier between Wall Mountain Range and Snow Comb Hill, then round to the right, where a gentle snow slope led up to an outcrop of rock extending down from the summit. The sun was bright and the wind

strong and cold. At a point about 1100 feet above sea level, where the snow slope became steep, we left the toboggan, and climbed up on foot to the rock outcrop. I was at a disadvantage owing to my not having hard boots on, and we could only examine the lower parts of this slope, at a height of 1200 feet above sea level. The rocks were found to be of two distinct types, a light greenish grey granitic rock and a dark grey fine grained basaltic type. On both of these types, lichens occurred, notably Neuropogon, Alectoria and Umbilicaria, also several crustaceous species. We threw down pieces bearing lichens, and collected them up in the rucksack on our way down again. It was of interest to note that in spite of the strong freezing wind, the sun's rays were melting the snow on the dark rocks, on which drops of water were present. Returning to the toboggan with our collection of specimens, we took some observations with compass, clinometer and rangefinder, also noting the altitudes by means of the aneroid barometer. We then returned to the camp, getting there at 1700 hrs.

Monday, 9 October. It being fair and calm this morning, although with poor visibility, we decided to break camp. All the instruments, specimens and everything else not immediately necessary for use at the camp were loaded onto the survey sledge, and hitching ourselves to it, we dragged it up to the summit of Thunder (Luigi) Glacier in about an hour; the snow surface was hard and even, very good for sledging. Coming down on our skis back to camp, we had some lunch and then, as the weather was keeping very good, struck camp, and loaded everything onto the second sledge. The snow had become so firmly packed over the outer tent flaps that it took some time to get the tents free. When we took up the ground sheets we found that the snow floor on which we had been lying had been thawed out by the heat of our bodies into shallow troughs where our sleeping bags had been. This sledge was heavier than the other, but we dragged it up to the summit of the glacier fairly easily. Marr and Davies took this sledge down the other side, and Taylor and I took the survey sledge. There ~~was~~ some fog on the summit of the glacier, but it was clear 100 feet or so lower down. The snow surface being so hard and smooth, we had to brake the sledges with three ropes under the runners during the descent. Reaching the lower part of the glacier we turned right round the base of the Wall Mountain, until the increasing uphill slope made it necessary for us to leave the survey sledge there and all get together pulling the other sledge up another $\frac{3}{4}$ mile or so onto a fairly level part of the glacier some 300 feet higher and well away from the base of the mountain. By this time we were all pretty well exhausted, and decided to camp there, which we did at 1945 hrs., leaving the survey sledge to be fetched the following day. We prepared supper with what stocks of food there were remaining and turned in at 2200 hrs. /was

Tuesday, 10 October. The weather was calm and foggy, except lower down near sea level, and continued so all day. Marr and Davies set out with us to where we had left the survey sledge, and we all pulled it up to the camp; Then they set off with the toboggan for the cache about $1\frac{1}{2}$ miles away, and fetched back some stores which had been brought up and left there during our absence luxuries such as tea and jam which are much apprec-

iated just now. The cache had been visited from the base the previous day, and a long radio message from the Secretary of State and the Governor had been deposited there; it stated that a suitable ship had been found to take our party and stores to Hope Bay next season. This ship is the EAGLE of 550 tons, and is to come down here direct from Newfoundland, bringing an additional member of the staff, Capt. Marshall, a zoologist, and also some husky dogs for sledging. Sub. Lieut. Lockley, whom I knew at the Museum in peace time, is coming to occupy Base A together with Layther and Smith. It being necessary for Marr to attend to this business immediately, he left us after lunch and set off on skis for the base, intending to return the day after tomorrow. He will send Blyth up tomorrow to take his place. Taylor and I gave him some telegrams to send off to our families.

Wednesday, 11 October. Calm and warm (at or above freezing point), with slight snowfall and a good deal of fog. After breakfast the three of us, Davies, Taylor and myself, harnessed ourselves to the survey sledge and pulled it in a northeasterly direction up onto the crest of the glacier (the Channel Glacier) and down the other side to where it terminates into the Neumayer Channel; a distance of about 2 miles. There at a suitable camping site, we left it and returned in the thickening fog to camp, where we found Blyth waiting for us; he had come up together with Back, who had then returned. Blyth took charge of cooking arrangements, and served us up some greatly relished omelettes and hash. We had intended to move camp to the new site in the afternoon, but the fog and fresh snowfall obliterating our tracks made this inadvisable, and we remained in the same camp for the night.

Thursday, 12 October. A fairly strong westerly was blowing in the early part of the day with heavy snowfall and rather poor visibility. In the evening the wind died down and the snowfall ceased. The weather was not good enough for moving camp. Marr did not come up from the base, and so, Blyth is staying with us for another night.

Friday, 13 October. Although the weather was foggy and there had been heavy snowfall during the night, we decided to strike camp and move on to the north end of the Channel Glacier where we had left the survey sledge. Our sledge was loaded up with the two tents, four bedrolls, food, etc., and we made a small cache of superfluous foodstuffs on the site of the camp. Harnessing ourselves to the sledge we commenced to haul it up the slope, Davies, Taylor and myself being on sealskin skis and Blyth in sealskin boots. The snow was about $1\frac{1}{2}$ feet deep, and the hauling was a punishing task, the sledge sinking in so deeply that it was acting as a snowplow; even the skis sank six inches into the snow. We had to stop for a breather every 100 feet or so. Eventually we got it up over the crest, but even going down the other side we had to pull, where the day before yesterday we had had to put rope brakes on the sledge. We pitched camp about half way across the glacier overlooking the Neumayer Channel, with Lion Island and part of Brabant Island visible in the distance. After a cup of tea, and a rest in the tent, Taylor and I decided to go back with the toboggan to this morning's cache and bring along the rest of the foodstuffs. When we set off a cold wind was blowing from the west, and it

was snowing fairly heavily. Davies overtook us on the way, skiing to the main cache to get some foodstuffs there. At this morning's cache we loaded everything onto the toboggan and set off again to return to camp. Even this small load was hard to pull on the soft snow. As we travelled, the fog increased, and visibility diminished to about 50 yards; we had to take frequent compass bearings to keep on the correct course, and even so we were heading about a quarter of a mile to the north past the camp when I happened to catch a glimpse of it when the fog lifted for a moment. Davies had arrived back shortly before us, having also had difficulty in finding his way. Blyth had in the meantime been busy and brought us over a much appreciated dish of sausage meat, potatoes and scrambled eggs. We turned in early as this had been one of our most exhausting days.

Saturday, 14 October. All day there was a cold south west wind with driving snow and very poor visibility. We stayed in the tents, enjoying some of the tinned delicacies brought ~~over~~ over from the cache yesterday.

Sunday, 15 October. A fine day, although not completely clear over the mountain summits. There was a slight south westerly wind, which abated later on in the day. After breakfast Taylor and I went on skis, and roped together with joined sledge harnesses, we travelled towards the northernmost headland on the north side of the bay, a point overlooking the Neumayer Channel and subsequently called Blyth Point. We carried collecting materials and a flag to set up as a survey mark. The distance was about $1\frac{1}{2}$ miles, and part of the way we had to traverse a steep slope of about 40° , passing just underneath some large crevasses. Open crevasses were also numerous on the lower part of the Channel Glacier below us. Arriving at the point, some 700 feet above sea level, we planted the survey flag, and took a photograph looking northwards up the channel, which was almost open except for a little brash ice. From here we could see ~~the~~ south west round the other side of the Noble range, and decided to visit a rock buttress there, about a mile away and 300 feet higher up. This buttress runs down almost from the top of the range steeply to the place which we were making for, and below that takes on a more gentle slope with easily accessible rocks and stones emerging from the snow, and obviously only recently exposed by the spring thaw. We examined this lower part, and found there a rich lichen flora, the chief components being Neuropogon, Umbilicaria and a number of crustaceous lichens; also on one rock two tufts of Ramalina lugubris. Taylor noticed some feathers in one place showing that this locality is not altogether unfrequented by birds. We spent about two hours making a collection of lichens and rock specimens, and taking photographs. We did not have time to climb up to the upper part of the buttress. Returning, we skirted round the hillside to join up with our outward tracks, and as we came in sight of the camp we saw Blyth and Davies coming out in our direction; on seeing us they returned to the camp, having set out to see if we were alright, as we had been away longer than expected. In our absence Back and Farrington had visited the camp bringing a telegram for me, a typewritten copy of the Governor's recent message and Marr's reply to it; and some bread and cakes from Berry. We got back at 1600

hrs. but they had returned before that. In the evening I dried off the lichens on a tin lid over the pressure stove and put them in dry linen bags.

Monday, 16 October. It was a fine and calm day, but low clouds were obscuring the mountain tops, and prevented much survey work from being done. In the forenoon Taylor and I measured a baseline of 500 meters east of the camp with the steel tape, and from the ends of this base Taylor took theodolite angles on Noble Peak and on the point to the north where we set up the flag yesterday. In the afternoon Marr and Farrington arrived on skis from the base towing a toboggan with extra foodstuffs. After a chat they returned at 1530 hrs. and I accompanied them to the summit of the Channel Glacier and then came back to camp.

Tuesday, 17 October. Today was sunny and fairly clear, especially later on, the temperature being about $-5^{\circ}\text{C}.$, but with a strong cold north east wind blowing all the time and carrying fine drift snow like sugar along the surface. After breakfast the four of us hitched up to the survey sledge, Taylor and I on sealskin skis, Blyth and Davies on sealskin boots with truger (the latter having worn a blister on one of his feet). We set off in a northerly direction for Blyth Point, following the route prospected by Taylor and myself two days ago. The sledge dragged badly until we discovered there were lumps of snow frozen hard on the runners, and scraped them off with a knife. When we came to traverse the steep slope round the crevassed base of Noble Peak, the sledge began to sideslip badly and there was danger of it taking charge and pulling us all down with it in a rush straight down the slope. Blyth and Davies tried to keep it going in the right direction while Taylor and I hauled it, but we could not make much headway. Finally we offloaded it and carried the instruments on our backs round the slope to a more level place, making several journeys, and then returning for the empty sledge. We reloaded the sledge and took it down the slope to the flag station at Blyth Point. There Taylor and I commenced taking observations, he taking panoramic photographs and a round of theodolite angles and plotting features of the landscape on the plane table, while I recorded the angles and worked the rangefinder. Davies and Blyth meanwhile excavated a pit in the snow in which to shelter from the biting wind, but the drift snow blew in onto them and melted on their dark clothing in the sunlight ~~making~~ making them uncomfortably wet. Later when they were running about nearby for exercise, they both went through into crevasses, but luckily saved themselves from going right through. We continued work here until about 1800 hrs., then loaded the instruments back onto the sledge and pulled it up the slope. Here most of the load was again taken off, and carried round the steep traverse, following later with the empty sledge. Davies went on to the camp to prepare supper, and Blyth, Taylor and I reloaded the sledge and dragged it back to camp where we arrived at 2000 hrs. Blyth soon produced an excellent hot stew for us all, and for my own part, I do not remember ever having enjoyed a meal more.

Wednesday, 18 October. The weather was similar to yesterday's, bright and clear with a strong cold north east wind. Taylor and I went out in the morning and took a round

of theodolite angles from the camp, also a panoramic photograph, while I booked the results and worked the rangefinder. This completed the survey work to be done here, and after lunch we broke camp, leaving one of the sledges with one tent, two bedrolls and all the extra rations, the folded tent being fastened in an upright position to serve as a landmark. The remaining baggage was stowed on the survey sledge, and at 1500 hrs. we started homewards hauling the sledge and the toboggan back up the Channel Glacier. The pulling was fairly easy, the snow being well wind packed. At the summit we found the view to the southwards very clear, and we stopped for some time to take some photographs. Then we moved on to the main cache, from which Davies took several articles. Arriving at the survey station 1st May, we all walked down the slope on foot, braking the sledge with ropes. Two members of the base, Back and Farrington, were seen on the penguin rookery, but they did not see us, and returned to the island. We left the sledge on the sharp snow slope above the rookery, and came on to the base, bringing the toboggan loaded with various things needed at once at the base. It was very pleasant to arrive back, where a warm welcome awaited us after an absence of 24 days.

Thursday, 19 October. I found it difficult to sleep last night in a proper bed and felt tired today. It was a bright sunny windy day, and both on our island and the penguin rookery, the snow has been melted considerably since we went away, and many more rocks have emerged. It is as though we went away in winter and returned in spring. During our absence the others have done some spring cleaning in the hut, and it looks very clean and homely now..... We heard yesterday on our return that the SCORESBY is leaving Stanley to come here at the end of this month, and is bringing Flett, Howkins and Matheson to visit us, the former to stay, and is taking Marr up to Stanley on her return for conversations with the Governor on arrangements for the coming season. Ashton will also go with her as far as Deception, where he will stay for about a month working on the prefabrication of a small mess hut to be erected immediately on our arrival at Hope Bay, pending the completion of a proper hut..... There was an extremely low tide in the afternoon, one of the low spring tides, and Marr, Taylor, Ashton and I went out on the exposed rocks west of the boat harbour and gathered various specimens, putting them into a bucket of sea water. They included a small fish, shrimp-like amphipods, a sea urchin, sponges, worms, etc., also some algae, a diatom, and a Verrucaria (Lichen) apparently *V. mucosa*. I spent the evening sorting, packeting and ~~taba~~ labelling the lichens collected on our sledging trip.

Friday, 20 October. An easterly blizzard all day, with a temperature of 25° to 29°F. Taylor and I spent a busy day indoors, he working out his surveying results, and I preparing, cataloging and packeting up the lichen specimens. Two radio messages came through, one from Flett thanking us for the invitation to come down to stay with us, the other from the Colonial Office stating that two extra surveying personnel have been found: Capt. Russell and Sub.Lt. James to join our staff at Hope Bay.

Saturday, 21 October. Weather calmer and bright at times, temperature 17°F. I finished the work on my specimens