

Monday 6th August. Poor weather today, overcast and with a moderate westerly wind, and it was not considered good enough to start the sledge journey. I utilized the opportunity afforded by this delay to complete the microscopic examination of my lichen specimens, and now have all collected up to date classified in to their respective genera.

Tuesday 7th August. Some slight improvement in the weather, but the sky is overcast and the snow still deep and soft. Taylor and I went for an excursion to the base of Mt Flora in the ~~afternoon~~ forenoon, he on Canadian snowshoes and I on skis. We climbed some distance up the scree slope at the base of the mountain ~~upon~~ the Scar Hills side, looking for fossiliferous shale, but found none. James and Russell took the "Big Boys" team up to Nobby Nunatak relaying some of their load to there. About  $1\frac{1}{2}$  miles away from the nunatak they found the inner lining of the tent which blew away from there on about 5th June. --I put in some skiing practice on the snow covered ice slope in the afternoon.-- In the evening the sledging party had a meeting, at which it was decided to sledge southwards down Crown Prince Gustav Channel until half our supplies were exhausted, then to make for Snow Hill.

Wednesday 8th August. This morning the weather was dull but otherwise fine, so we started off on our sledge journey. There was much work to be done in the way of last minute preparations before we finally got off at 1040hrs. James and Russell started off up the slope with the "Big Boys" team, Davies and Marshall accompanying them and helping to pull. Taylor and I started about 20 minutes later, with Back, Donnachie and Matheson assisting us up the slope. Davies, having seen the others up to Nobby Nunatak, returned to meet us on skis and helped us with the uphill pulling. At the nunatak we took on our full load; James and Russell went on ahead with a half load. With the help of our companions, we got the sledge on past the Pyramid for another two miles or so and on the way met James and Marshall coming back with the empty sledge for the other half of their load. Russell was about a mile ahead at the summit of the glacier with their first half load. Back, Davies and Matheson returned to the base from here (Donnachie had already left us to keep a radio schedule). Taylor and I went on over slightly downhill or level surface, and about 20 minutes later James and Russell overtook us; as it was now 1530hrs, and the visibility poor, we decided to camp here at the top of the slope leading down southward, at an altitude of 1000ft. We had traversed 5.3 miles today. The temperature was -7F this evening

Thursday 9th August. A wind sprang up in the night and soon reached gale force. The storm continued all day, obliging us to lie up. The temperature ranged between -7 and -9F.

Friday 10th August. The wind dropped in the early morning and the day dawned beautifully clear and sunny, with a temperature of -17F. We started off at about 0900hrs, James and Russell going ahead. On the south side of the summit we made good downhill going for about 2 miles; then the slope became steeper, and we had to put the wire drag brakes on the sledges. The last part of the descent onto the sea-ice of the Bay of a Thousand icebergs was associated with some difficulty, as we had to take the sledges over an open crevasse. Having reached the foot, we found ourselves bogged down in soft snow, and had to relay our loads in two journeys out onto the harder surface further on. After a lunchtime halt, we headed S.W. across the bay, passing close by several embedded icebergs; the surface was uneven, and the going was heavy. Russell and Taylor had to pull with the dogs, while James and I pushed the sledges from behind. In this way we made a further two miles or so, and then camped at 1630hrs, all being very tired. The sun went down amid some glorious colour blends. The temperature fell to -28F in the evening; it was calm with bright starlight. Distance covered today 5.2 miles.

Saturday 11th August. Very cold during the night, the temperature falling to -34.6 F. In spite of this, we were able to sleep quite warm in our sleeping bags, but it was very unpleasant to turn out in the morning, with ice formed by the condensation of our breath forming a crust over our anarak hoods and the upper ends of our bags. All utensils had to be handled with gloved hands until we got the pressure stove going and had raised the temperature inside the tent somewhat. Making a start at 0930hrs, we had moderately good going,

although the surface was very uneven with embedded blocks of ice, which were often difficult to get the sledges over. Taylor and Russell took a number of compass bearings from time to time on surrounding features. At 1600hrs we were approaching one of the islands in the bay (later named by us Sphinx Island), and made camp. The temperature was  $-19^{\circ}\text{F}$  in the evening. Distance traversed today: 7.2 miles. Russell later came into our tent and helped Taylor to plot the rays of today's compass bearings.

Sunday 12th August. A fine bright sunny morning, without wind when we broke camp and started off at 0930hrs. We made straight in a south-easterly direction towards what appeared to be a passage between two adjacent islands but when we got closer it proved to be a low col across one large island. We had to unload and relay in two journeys through soft snow over this col onto the sea ice on the other side, leading out of the bay into the north end of the Crown Prince Gustav Channel. Here we had a fine view of the sheer dark cliffs of Vega Island across the channel ahead of us. As we continued out over the sea ice, <sup>and small tornadoes of drift snow were seen swirling about all around us</sup> fluctuating light winds sprang up, one of these went over us, enveloping us momentarily in a cloud of fine drift. Thereafter a steady S.W. wind of about 20m.p.h. set in, sending the drift snow scurrying along the surface of the sea ice. Occasionally we would lose sight of the other team in the drift, although the sun was shining and the sky was clear. As we went on, the wind became stronger and stronger, until it became difficult to get the dogs to lead into it. At about 1430hrs we resolved to camp, and none too soon, for the wind ~~was~~ was now reaching nearly 40m.p.h and obscuring everything with blinding drift. We had a strenuous task setting up first one tent and then the other; at last, by the combined efforts of all of us, with ropes hitched over the peaks of the tents, we succeeded in erecting them after a fashion, with the flaps weighted down with ration boxes and snow, and crept inside half frozen. There was hardly space enough to lie down inside, but we were thankful to have been able to get them up at all. We had covered a distance of 5.2 miles today, and would it have gone further had we not been forced to camp early by the onset of the gale.

Monday 13th August. The wind abated during the night, and we awoke to find it a beautiful calm cold sunny morning, with a temperature of  $-9^{\circ}\text{F}$ . The digging out of the sledges and other equipment occasioned some delay in departure, but we finally got going at 1030hrs with James and Russell leading towards Cape Scott Keltie on Vega Island. Taylor and I had a capsize of our sledge during the first half hour, and had to wait for James to come back and help us right it. Taylor and I then took the lead with our team, the former walking some distance ahead to lead the way, while I went beside the sledge to guide it. The surface of the sea ice gradually improved, and we were able to make good progress. We turned south-west to go round the high beetling cliffs of Cape Corry, which appears to be an island, and made in the direction of two smaller islands situated about two miles to the S.W. of it. Near here, behind a large iceberg, I happened to notice a seal lying on the ice, and James went with the .22 carbine to shoot it whilst the others of us went on with the two teams to one of the islands, where we pitched camp at the foot of the scree slope. Unfortunately after James had shot the seal several times with the revolver, (the carbine having failed to fire), it got away down its hole.--After our evening meal Taylor and Russell went out with the theodolite to take a star observation for determination of our position. The temperature today was between  $-8^{\circ}$  and  $-13^{\circ}\text{F}$ . We covered 10.9 miles today, our best day's travel so far.

Tuesday 14th August. A veering and backing wind started up during the night, and in the morning a good deal of drift was blowing around the camp, with frequent small tornadoes of whirling snow. The latter caused us to give the island beside which we are camped the name of Vortex Island. In the circumstances we decided not to travel. James and I made a depot of about  $3\frac{1}{2}$  days' supplies of man and dog food, paraffin, and some skis, covered with a sledge tarpaulin, in the lee of a large boulder on the scree slope, above our camping site. This island is very high and precipitous, of a chocolate brown colour from a distance, and is composed of a soft agglomerate rock, a reddish brown matrix containing black andesitic stones, and traversed by long black dykes running more or less vertically up the cliffs from top to bottom. We found penguin feathers and excrement on the lower slopes ~~the~~

near the camping site.

Wednesday 15th August. The day dawned calm and clear, and we resumed our journey at about 1000hrs, steering a westerly course in towards the Graham Land coast. The surface of the sea ice was good on the whole, except for occasional pressure ridges which caused our foremost sledge to capsize twice. The lightening of the load had a good effect, enabling us to keep going at a brisk walking pace without having to push behind, except when going over ice hummocks. To our left we passed a high precipitous island composed apparently of the same type of rock as Vortex island; near its summit there is a remarkable monument-like projection of blackish (andesitic?) rock, forming a landmark visible for many miles, both from the north and the south. This feature caused us to give the island the name of Monument island. We made about an hour's halt in the forenoon to take survey observations, and then headed for a high Cape on the mainland coast to which the provisional name of Church Point was given. About a mile beyond this point we made our camp on the sea ice a few hundred yards from the shore. The temperature went down to -26F in the evening. Distance covered today: 11.2miles.

Thursday 16th August. An overcast day, with a slight but cold south-westerly wind (temperature -19F in the morning). We started off at the usual time heading in a S.W direction parallel to the mainland coast, and had a very difficult time in the deep piecrust snow so that in spite of all our exertions (Taylor pulling in man harness with the dogs on the foremost sledge) we only covered three or four miles by lunchtime. After a hasty snack of chocolate, it being too cold to stand about for long, and the ice over our faces making eating difficult, we continued towards a high island lying in mid-channel to the S.W. of us, and as the surface soon improved, we reached it without further trouble by about 1500hrs and made camp at the base of the high dark cliff forming its northern end. We had come 7 miles since the morning.

Friday 17th August. A fine calm sunny day, the temperature rising to zero F in the afternoon. We started off at 0900hrs, and made brisk progress on a good hard surface along the west side of the island beside which we had camped. Before leaving, I took a specimen of the rock of which the northern extremity of the island is composed; it is a foliated shistose rock. The island proved to extend in a series of low humps for about 4miles in a south-westerly direction, and for this reason we named it Long Island; when we finally reached the end of it, we found that it terminated in a low beach-like promontory of sharp stones, many of which had prominent quartzitic veins standing out in relief upon them. Leaving the sledges in charge of Russell, Taylor, James and I walked over to examine this promontory, and climbing up on a knoll about 60ft high, I found a number of lichens of which I collected samples. Then continuing down the Crown Prince Gustav Channel, we headed for what appeared to be a low promontory on the mainland coast, and arriving there, made a halt, which enabled me to climb up onto the promontory and collect some rock samples and lichens. The country rock was of a highly contorted shistose type, and through it, in a roughly N and S direction, ran a dyke-like formation about 12ft wide, of a reddish brown, highly metamorphosed, quartzitic rock. After I had collected a number of specimens, we resumed our journey, passing several very large embedded icebergs, around two of which we saw a number (about 5 and 10 respectively) of seals lying on the ice near the tide cracks. We did not have the time to stop and examine them. We made camp near a large iceberg, having come a distance of 11miles. No traces of penguins were seen either on Long Island or on the mainland promontory visited today.

Saturday 18th August. Another fine day, with a slight intermittent northerly wind which became fairly strong towards nightfall. Temperature fairly high, between +8 and +10 F. We made good progress in the forenoon, heading in a ~~sw~~ southwesterly direction towards a small rocky island lying just off the mainland coast, and reached it by lunchtime. ~~The country rock is similar to that of the promontory visited yesterday, a highly contorted schistose type. The commonest lichen was Alectoria (Subparmelia) minuscula, forming~~ I utilised the opportunity to visit it and collect samples of the rock and lichens. The country rock is similar to that of the promontory visited yesterday, a highly contorted schistose type. The commonest lichen was Alectoria (Subparmelia) minuscula, forming

neat black rosettes. Also found a few small cushions of moss. During the earlier part of the days march we saw a remarkable mirage of lofty extensive ice cliffs to the S.W. of us down the channel; perhaps an optical elevation of the Larsen ice barrier, which must be about 100 miles away from this point. Russell's feet, which were frostbitten some days ago, are giving him trouble, the blisters having burst, and he has to ride on the sledge a good deal of the way.--We made camp behind a large iceberg close to the mainland and James, having seen two seals lying out nearby, went over and killed them with the revolver. We unloaded the sledges, and first I took over our team, then James his, to one of the carcasses, and let them gorge themselves with the warm meat and blubber. The seals appeared to be Weddells and one of them contained an almost mature foetus. The dogs having fed to repletion, we returned to camp, taking some steak and liver for ourselves. Taylor and I then made a repair to our tent (one of the poles of which snapped yesterday evening when being pushed into the snow) with a lashed on ski stick, and erected it, not without difficulty in the freshening northerly wind. Our supper ~~was~~ of fried seal steak tasted very good. Distance travelled today;  $9\frac{1}{2}$  miles.

Sunday 19th August. Again a fine calm sunny day. Starting out at the usual time, we passed within view of Cape Obelisk on Ross Island, where a conspicuous pillar of rock gives it its name, and had a view of Persson Island with Röhss Bay behind it. We headed towards a high promontory of the mainland, probably the entrance to Sjögren fjord. The travelling was heavy in the forenoon over collapsing pie-crust snow, but the dogs pulled well, obviously benefitting from their good feed of yesterday. In the afternoon we found ourselves traversing huge undulations in the ice, and came across some old embedded blocks of glacier ice with morainic blocks upon them. Suddenly we found our course shut by a huge rift or chasm in the ice, about a quarter of a mile long, some hundred yards or more in width, and perhaps 150ft deep. This undulating and rifted ice slopes up imperceptibly into the land ice and downwards into the sea ice off which we have come. We had to change course in order to get round the rift, and after going for another mile or so in the direction of Cape Nygren on Ross Island, made camp for the night, having covered a distance of 10.2 miles. The temperature fell to  $-14^{\circ}\text{F}$  in the evening. Taylor went outside to take an astronomical observation, and Russell booked the figures from inside our tent. At the same time I put an emergency filling into one of James' teeth.

Monday 20th August. The fine calm sunny weather continues; temperature  $-26^{\circ}\text{F}$  in the morning, rising to  $-6^{\circ}$  in the afternoon. We started off in the direction of Sjögren fjord on the mainland coast. We soon found ourselves traversing very undulating and irregular glacier ice, obviously a protruding glacier tongue, dotted here and there with morainic boulders, some of which extended in scattered lines for miles out into the channel. As we opened up the fjord, we saw that about four large glaciers pour down from the highland plateau into it, and it is no doubt the pressure set up by these against the sea ice that has caused the formation of the ridges, chasms and undulations which we have been encountering. We are obviously on a long glacier tongue protruding into, and confluent with, the sea ice. To avoid this bad terrain, we changed direction and headed out eastward towards Persson Island, going for some distance over bare glassy glacier ice. In the evening we were still on the undulating icefield, and camped in a place where there was sufficient snow cover to pitch the tents, having travelled a distance of 9.3 miles.--As we were finishing supper, James and Russell picked up on the radio the news that the Japanese was was over.

Tuesday 21st August. We are remarkably fortunate with the weather--another fine sunny day, calm, with temperature rising to zero F in the afternoon. In the forenoon we headed across the channel towards Persson Island in order to get away from the rifted undulating glacier tongue, which projects out for miles from the mainland; then after some time, we turned S.W. again and headed for Cape Longing, now visible as a promontory with high dark cliffs. After travelling for an hour or so, we found our way barred by a line of gigantic blocks of pressure ice thrown up in fantastic formations, and reminding one of the concrete "dragons teeth" of anti-tank emplacements. Taylor went forward on snowshoes to reconnoitre, and found that there was a deep rift or crevasse about ten feet wide between the blocks. He roped

himself to Russell and went forward over a snow bridge, which he found to be safe. I then took our foremost dog team and sledge across this bridge, and James followed with the other sledge. After this we came onto a good smooth even surface, and our further progress towards Cape Longing was rapid and unimpeded. We covered 14 miles today. The temperature rose further to plus 5F in the evening.

Wednesday 22nd August. Overcast in the early morning, but calm, and so we began to strike camp as usual, but just before we were about to take the tents down, a moderate N.W. wind sprang up, and as the sky to the north and west looked ominous with dark ragged clouds, we went back into the tents to smoke a pipe and await further developments. The temperature had risen very sharply during the night, and for a short period this morning it actually stood above freezing point. After about an hour, conditions were no worse, and so we decided to start off. The surface was good, and we headed on towards Cape Longing, crossing several slight but quite perceptible undulations in the ice. Gradually the wind veered round to the S.W., and began to blow more strongly, raising flying drift, and we decided to stop and make camp. All four of us were needed on each tent, but we have now evolved a technique for pitching a tent in a high wind, and got them up quite satisfactorily. It was now 1300hrs, and we had covered 4 1/2 miles.--Russell came into our tent in the afternoon to plot observations.-- Our sledging rations, of which we could only eat a part during the first week or ten days of our journey, now prove to be only just sufficient to satisfy our hunger; I suppose that by now we have burnt up all the fatty reserves in our tissues, and so now need more for the production of energy and warmth.--About 1400hrs the wind died down almost completely.

Thursday 23rd August. A fairly strong N.W. wind blew all night, but it dawned calm, clear and bright. Taylor resolved to leave the camp standing today, and for us to split into two parties and go to reconnoitre up to and around Cape Longing, with sledges loaded only with sleeping bags and collecting materials. The first party consisting of Taylor and Russell, started out with the "Big Boys" team, heading for the channel which appears to separate Cape Longing from the mainland. They encountered three large rifts in the ice of this channel, and Taylor had to go forward on snowshoes, roped to the sledge, to find safe routes across. After crossing the third rift encountered in a distance of about three miles, they left the channel, and struck up onto the slopes of the land ice, reaching the summit of the shield-shaped mass at an altitude of 1320ft feet at 1420hrs. From here they had a fine view to the south, Robertson Island and the Seal Nunatacks being clearly visible; "Cape" Longing appeared to be an island and was delimited from Cape Sobral, which appeared to be part of the mainland, by a fjord. They made a rapid descent on their return, and reached camp at about 1600hrs, having gone a total distance of 15 miles.--Meanwhile James and I went with the "Chromosomes" team and a sledge with sleeping bags, shovel, ice axe, and collecting materials straight towards the high stratified cliff on the N.E. side of "Cape" Longing, about 3 1/2 miles away. Most of the distance was over a flat smooth surface, and we were able to ride on the sledge, but about half a mile from the cliffs we came into heavy pressure ice in humps and rifts, and James had to go ahead to find a way for the dogs. Finally, about 1/2 of a mile from the cliffs, it became too bad to take the sledge any further, so we upturned it and left it and the dogs, proceeding on foot. We had a rough scramble over huge ice blocks and down into a maze of chasms before we finally got to the scree slopes at the base of the cliffs. Immediately I saw that the rock was sedimentary, of sandstones, mudstones and shales, and soon after I found some indistinct fossil impressions of plants on a piece of shale. I remained on the scree to examine and collect, while James set off to climb to the summit of the cliffs via the snow slope on the N.E. side of them. I collected samples of all the different kinds of rock which I could see in the scree and then climbed up to the base of the cliffs, which have a very conspicuous and regular stratification dipping at an angle of about 15 degrees to the S.E. At the base of the cliffs, directly above the scree slope, I found indistinct plant fossils in situ in a greenish grey band of slaty shale about 6 inches thick. It was perfect collecting weather, calm, sunny, and comparatively warm (about +7F). At about 1500hrs, James descended to rejoin me, and we made our way back to the dogs and sledge. Returning to camp by a slightly different route, we steered our way by a compass bearing in the deepening twilight, while a full moon, flattened and ellipsoid, rose above

the flat horizon of the frozen sea to the East. We were about ~~about~~ 200 yards to the west of the correct course when I saw the camp to the right of us, and we had an interesting half hour's talk before supper, exchanging notes and information about our discoveries.-- Russell took some astronomical observations later in the evening.

Friday 24th August. Another fine day, and we started off on a course westwards towards Cape Foster, the southernmost tip of Ross island. The surface was good for the greater part of the way, and we took it in turns to go ahead for two hours each to lead the way. In this way we made good progress, 18.2 miles by the time that we pitched camp at 1700hrs. We would have made even better mileage had we not during the last hour of the march got into soft snow in the lee of Cape Foster.

Saturday 25th August. Weather continues fine, cold calm and sunny (-17°F in the morning, rising to -4°F in the afternoon). After about an hour's floundering through deep soft snow, we gradually came onto a harder surface as we headed for the east side of Lockyer Island, and by the time ~~time~~ we changed course for Cape Hamilton on Ross Island, it had improved considerably. Taylor and I took turns to go ahead on showshoes in the forenoon, and after lunch, James and Russell took the lead. Towards the end of the day, as we passed close by the vertical red-brown cliffs of Lockyer Island, the surface became very good indeed and we made 17 miles by the time we pitched camp slightly beyond Depot Point on Ross Island. The northern rocky part of Snow Hill island is now clearly visible ~~from~~ ahead of us, about 18 miles away.

Sunday 26th August. A S.W. wind sprang up in the morning, and has been blowing great guns all day, shrouding everything in an impenetrable white veil of flying drift. We only left the tents once, about lunchtime, when the "chromosomes" team got their tethering cable loose by pulling out the ice axe at one end; having got them back again, we fed them, and returned to our sleeping bags in the tents.

Monday 27th August. The wind kept up during the night, but by the ~~time~~ morning had abated considerably, so that we were able to go out. It was arranged that Taylor and I should go on with our team in an attempt to make Snow Hill that evening, while James and Russell tried to find Nordenskjöld's depot at Depot Point opposite our camp. Taylor and I therefore loaded our ~~with~~ sledge and started off. It was sunny, but a fairly strong S.W. wind was sending drift snow scurrying along the surface almost in the direction in which we were going. The ice surface was good until about 1400hrs, when we ran into a broad belt of uneven hummocky ice which caused the sledge to capsize several times. The drift was now blowing so thickly that during most of the time, the point on Snow Hill for which we were making was hidden from view, but finally the hilly northern part of the island loomed up before us, and Taylor went ahead to go up onto the shore. The sea ice was here for the most part bare and glassy, and it was difficult to manage the dogs and sledge on it. At last we came around the small ice spit which delimits the little bay at the head of which the Nordenskjöld hut stands, and we got our first glimpse of it, on top of a little scree hillock about 100 yards from the shore. Leaving the sledge and dogs on the edge of the sea ice, we went up to investigate, and were disappointed to find the hut in a bad state of disrepair, with the windows gone and deep snow and ice lying inside. Articles of all kinds lay around inside and outside the hut, half embedded in snow and ice. We went back to our sledge, and lost no time in finding a fairly level spot on the hard snow by the shore on which to pitch our tent as the wind was blowing fairly strongly, and it felt bitterly cold (actually about -11°F). During the night the temperature went down to -29°F.

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Tuesday 28th August. A bright, calm, cold day (-15 to -25F). After having our breakfast we went up to the house, and entered it through one of the windows, coming into a cabin with two bunks in it having the names of the former occupants: "Gösta Bodman" and "Erik Ekelöf", carved on them. Snow lay in drifts and mounds everywhere inside, and we had to use a shovel and a hammer to uncover articles. We found nothing of any importance; empty bottles, rusty tins, kitchen utensils, etc. Going up into the loft, which had been used as a storeroom, and was also half full of snow, we found nothing of note except some candles, a camera tripod and parts of an oil lamp; a case of packets of baking powder, a tin of mouldy tea, and other odds and ends. Two penguin skins had been hung up on a roof tree to dry. Leaving Taylor to investigate further, I took my hammer and collecting bag and set off up the steep scree slope at the back of the hut. The whole of this part of the island is a monotonous cocoa-brown colour, and is cut into steep hillocks and ravines, all covered with loose stones and friable brown silty ~~very~~ soil; here and there on the hillside project wall-like basalt dykes, some of them of considerable height, which have been exposed by the weathering away of the soft clayey sandstone rock into which they were originally injected. At a height of about 200ft I found a large sandstone boulder bearing the lichen Lecanora Mons-nivis, which I was looking for, Snow Hill being the classical locality for it.; later I found better specimens of it only a hundred yards or so behind the hut, on loose pieces of sandstone. The sandstone forms big rounded outcrops about 300ft up, and in it are embedded nodules of reddish stone, which, when cracked upon, often prove to contain fossil gastropods and ammonites. I collected some of the best specimens that I saw. On another hillock which I visited in the afternoon I found numerous casts of a large bivalve mollusc in the soft clayey sandstone. Apart from Lecanora Mons-nivis and a Caloplaca associated with it, I saw no trace of vegetation whatever; the rocks and stones are singularly barren of plant life. Perhaps this is due to the rapid solifluction which is obviously taking place here; both the strong winds and the streams of summer water down the gullies must be eroding away the terrain fairly rapidly.--Meanwhile Taylor had collected together a few relics to take back with us.--At about 1515hrs we sighted James and Russell coming with their team over the sea-ice about a mile away, and we helped them to pitch their camp, after which they went up to inspect the house. It was a disappointment to us all to find it so derelict and delapidated.--James and Russell had found Nordenskjöld's depot on Ross Island, and brought with them a selection of the foodstuffs (dried apples and prunes, tea etc.); most of them being still in good condition.

Wednesday 29th August. The day dawned calm, cold and clear (temperature -13F.). Before we started off I took two barrel staves from near the hut to make into emergency snowshoes later on if necessary, and at the same time Taylor went over to a spot about 100ft above the shore on the E. side of the little bay and collected a specimen of Caloplaca elegans which he had noticed there the previous day. We started off in a northerly direction, alongside the high cliffs of Snow Hill, making for Seymour Island. The surface was mainly glassy ice, over which the dogs drew the sledge rapidly and easily, Taylor walking ahead to lead the way. After an hour we changed over, I walking ahead in the direction of Cape Bodman, at the northern end of Seymour Island. This island is lower and less precipitous than Snow Hill, but is composed of the same kind of brown friable rock, worn into countless hills and ravines; it is all remarkably snow-free. After a short halt for lunch, we rounded the high cliffs of Cape Bodman, with the conical mass of Cockburn Island a conspicuous object out across the sea ice a few miles away. At Cape Bodman we changed direction, heading round it eastward into a wide bay, at the head of which we drew up onto the land and made camp on a snow ~~pl~~ platform just above the shore. When we got the tents up, Taylor and I made the pleasing discovery that there were several holes in the fabric of ours, due to friction on the sledge against the edges of a metal-bound box, and there was nothing for it but to get out needle and thread and sew a couple of patches over them--~~is~~ difficult work with freezing fingers at a temperature of -18F. After supper Taylor went out to take a star observation, which Russell booked from inside our tent.

Thursday 30th August. On this memorable day, Taylor and I left the camp at 0800hrs and headed across the island on foot in an easterly direction through a low valley which runs right across it, in order to look for Norden-skjöld's depot in Penguin Bay and also to collect fossils and botanical specimens. We walked for about 1 $\frac{1}{2}$  miles through the valley between the brown hillocks cut up by numerous ravines and white gullies, and consisting, like Snow Hill, of a friable brown soil derived from the decomposition of the soft sandy rock. Before we got to the other side of the island, I parted from Taylor in order to climb up onto the 700ft plateau at the northern end of the island. On the way up, on steep west-facing slopes covered with half embedded erratic stones and boulders, I found three lichens at a height of about 500ft, namely Lecanora (Mons-nivis?), a Caloplaca associated with it, and a yellow Acarospora of the chlorophana group. Also at one place I found numerous large fossil bivalve shells weathering out of the soft crumbling rock. The summit of the plateau proved to be quite bare of vegetation, at any rate in the part which I traversed. I then made my way down to the east shore to join Taylor, but seeing no sign of him or of the depot, concluded that he had probably gone further south, so I continued in this direction along the top of the coastal cliffs, and in doing so found a number of interesting fossils-- a Zeuglodon tooth, belemnites, fossil wood, etc. Having gone about 1 $\frac{1}{2}$  miles, and still seeing no sign of Taylor, I went down onto the sea ice and returned in the direction whence I had come in order to get back to the camp by lunchtime, as prearranged. When I got back I was met by James, who told me that Taylor had not yet returned. Russell had already harnessed up the "Big boys" team in order to go over to Penguin Bay, and half an hour later he and James started off, leaving me at the camp, where I finished the repairs to our tent. Shortly afterwards, Taylor arrived, having walked right round the northern part of the island and covered a distance of about 12 miles. Towards the north end of the island, he had found a cairn marked with a pole, at the base of which was a letter written on 7. November 1903 by two members of the Argentine Relief Expedition who had landed there from a gunboat "Uruguay"; it was in French, stating that they had been there on that date and had found under the cairn a paper with the signatures of Anderson and Sobral; apparently this is the cairn originally set up by Larsen in 1893. Taylor had not found any trace of the depot. After spending a short time examining the vicinity of our camp, during which I found a large ammonite and a fossil bivalve embedded in the soft crumbling rock, Taylor and I waited in the tent for the others to return. At about 1700hrs they arrived with their team, and delighted us with the news that they had located the depot, away to the south of the bay where Taylor and I had been searching for it. They brought back with them on the sledge a quantity of loaf sugar, canned corn beef, dried beans, rice, and a case of bottles of a liquor called "Hesperidine de Bagley", which we thawed out and sampled, and found to be a kind of orange bitters. They also found a small tin canister sealed with adhesive tape and obviously containing some document; the opening of this will be deferred until we return to the base. Temperature -18F today.

Friday 31st August. When we turned out this morning it was calm and dull, with low cloud, but the lower parts of the north end of Ross Island were lit up by the sun. Soon, however, the cloud bank descended to ground level, and Taylor had just sufficient time to take a compass bearing off the N.E. end of Cockburn Island before dense fog came down and visibility was restricted to about 100 yards. We set out with Taylor walking ahead and taking his bearing every now and then with a prismatic compass which he carried in his hand, while I followed with our sledge, keeping an eye on the bearing by the large aero compass mounted on the handlebars. James and Russell followed with their sledge a short distance behind. In this way we "flew blind" for 3 or 4 miles, and then Russell took over and led the way. About midday the high peak of Cockburn Island loomed up ahead out of the limbo of fog, and we skirted round the shore slopes to the N.E. side, where we made our lunchtime halt. I went up onto the scree slope to make a collection. The lower slopes of this part of the island are used as a rookery by Adelie penguins and cormorants, numerous nests and bodies of the former being present. Huge blocks of a blackish conglomerate rock lie on the scree slope, having at some time or other fallen from the cliff shelf above. The matrix underlying the scree slope consists of a soft bedded sandstone, the scree itself being formed of loose basaltic stones. Lichens were fairly plentiful on these



stones and on the large conglomerate blocks from 20 to 60ft above sea level, mainly an association of Caloplaca elegans and Xanthoria lichnea, both very brightly colored. Many of the conglomerate blocks bore small brown pustular excrescences which I took at first to be the lichen Staurothele, but which proved on closer examination to be a mineral concretion which mimicked that lichen almost ~~completely~~ exactly. Prasiola crispa was fairly abundant near the penguin nests. No fossils were seen. Having made a ~~vv~~ collection, I returned to the sledges, and we continued our journey through the fog, which had temporarily lifted during our halt. Just before we stopped for lunch a warm ~~vvvvvvvv~~ N.W. wind came in a few gusts which raised the temperature to +18F, shortly afterwards we saw the fog rolling in on us again from the S.W., and when it reached us the temperature dropped to -8F, and it began to snow slightly. We continued through the fog until 1615hrs, when, as the S.W. wind was increasing, we made camp.--We covered a distance of 11½ miles today.

Saturday 1st September. The fog persisted all day, except for clear intervals of a few minutes duration, when the coast of Ross Island to our left and Cockburn Island behind us loomed up dimly. The glass was falling rapidly, and in these circumstances we decided not to travel. Russell and James came into our tent, and the former assisted Taylor in plotting the survey results up to date, while I put another emergency filling into one of James' teeth. We did not feed the dogs today, as supplies of dog pemmican are running low. One feels sorry for the hungry animals; when we break camp in the mornings and harness them up to the sledge, they immediately make for the tent site and greedily devour any scraps of refuse left lying about; human excrement they look on as a delicacy, and even eat their own.

Sunday 2nd September. Again foggy this morning, but as it was calm, we struck camp at the usual time and started out, Taylor leading the way by compass bearing. A quantity of soft snow had fallen during the night, and the going soon became very heavy, until at last towards noon the dogs were hardly able to keep the sledges moving. I put on snowshoes and man harness, and pulled together without dogs, while Taylor went beside the sledge. James and Russell soon found it necessary to dump half their load and relay. In this way, we made another mile or so, and then, as a cold S.W. wind had sprung up and seemed on the increase, we pitched camp at about 1400hrs. Ironically enough, the wind died down and the fog lifted considerably shortly afterwards.--During the forenoon we passed a very small rocky islet, and near it we saw several snow petrels (Pagodroma nivea) flying, the first birds that we have seen during our journey. The temperature between -4 and +1F today; we covered a distance of 4 miles.

Monday 3rd September. The fog cleared during the night, and this morning it was calm and fairly clear, with a temperature of -14F. We struck camp and headed northwards in the deep soft snow. We soon found that we were making very little headway, and the dogs, sinking in up to their bellies, got very little purchase for pulling, while the men without skis or snowshoes at the rear end of the sledges often involuntarily brought them to a halt through their inability to get their legs in and out of the snow quickly enough. Taylor was going ahead on snowshoes, hailing in man harness to help the dogs; after some hours of exhausting labour, we had only progressed about a mile, the second sledge following exactly in the tracks of the first in order to take advantage of the more compacted surface. Growing exhaustion compelled men and dogs to make a halt every 50 yards or so. This deep soft snow is obviously due to the proximity of Ross Island to the S.W. of us, and may extend out for miles into the Erebus and Terror Gulf. The best course open to us is to head out as far as possible away from the lee of Ross Island, towards the south side of Vega Island, whose cliffs are clearly visible ahead of us. James and Russell decided to relay again with half loads, while Taylor and I crawled on ahead at a snail's pace for another mile or so, and finally made camp near a line of small embedded icebergs. The last of the dog pemmican was used up this evening, and we now rely for dog food on the cans of corned beef found at the Seymour island depot; this will keep them going for another two days, during which we stand a fair chance of coming across a seal. More snow petrels and a few sheathbills (Chionis alba) were seen flying near us today.--We think we covered about three miles today, but cannot tell for certain, as the sledge cyclometer is out of order. -The temperature this evening was -27F.

Tuesday 4th September. Very cold this morning-- -40F., and we had to postpone our departure for about an hour, for our feet, in our damp and worn out footgear, were in danger of becoming badly frostbitten. We spent this time looking over the stores, and taking out everything non-essential to leave here in a depot; it is necessary to do this if we are to make any effective progress out of this morass of deep snow in which we are bogged down. Everything not absolutely necessary, even small trifles, was piled up near a small iceberg near the camping site; the theodolite, radio set, cine camera, etc., were left here, and the dump surmounted by the theodolite tripod with a piece of red bunting attached to it to make it easier to pick up the depot from a distance should we be able to return at a later date to fetch it. A round of compass bearings to surrounding features was taken before leaving the depot, in order to precise its position. This done, we started off, Taylor and Russell pulling with ~~the~~ <sup>on the foremost sledge</sup> dogs and James walking, or rather floundering, behind it, while I brought on the second team in the tracks of the first. Our progress was even more slow and painful than on the previous day, and by an irony of nature, the weather was calm and sunny, excellent travelling weather, were it not for the deep snow which engulfed us like a quicksand and kept us in this spot with little prospect of getting very much further by nightfall. Gradually the snow got deeper and deeper, and after a while, those of without skis or snowshoes found our feet coming up covered with saltwater slush; we ~~walked~~ sank in up to our thighs at every step, and at times were crawling along on our knees, hanging onto the handle-bars of the sledge. Eventually sheer exhaustion compelled us to stop, at about 1600hrs, having covered only  $3\frac{1}{2}$  miles. Our paraffin is now almost exhausted and we can use the pressure stoves only for the preparation of food, and not for drying of wet clothing. While James and I pitched camp, Taylor and Russell went off on skis and snowshoes to prospect for an improved surface over which we might have a chance of making better progress tomorrow. They returned shortly after nightfall, having gone on about 2 miles, with the news that there was a slight improvement in the surface towards the end of that distance; tomorrow therefore we will attempt to get onto this better surface, so that we can skirt round the south side of Vega Island until we get into Sydney Herbert Sound. We fed each of our dog teams with one of the tins of corned beef from the depot on Seymour Island, each animal getting about 1lb of meat, a very inadequate ration, of which they disposed in a few seconds; they are getting more and more famished every day, and this, together with the bottomless soft snow which they have been struggling through, must soon tell adversely on their pulling capacity unless we come across a seal soon.

Wednesday 5th September. The weather remaining fair, we struck camp at 0915hrs, and followed the trail made by Taylor and Russell the previous evening. Our manner of progress was the same as on the previous day--Taylor and Russell hauling on skis and snowshoes on the foremost sledge, James pushing it from behind, and I following in the track some distance behind with the other team. Finally, exhausted, we reached a small island off the coast of Vega Island at 1700hrs, having come a distance of 4.9 miles, and made camp. There was a slight but perceptible improvement in the snow surface as we progressed today. We fed the dogs the last of the corned beef this evening.-- The temperature fell to -29F as we were making camp.

Thursday 6th September. The day broke calm and bright, and to our delight, as we sledged over a low col cutting into two halves the small island near which we had camped the previous night, we ran onto an excellent hard windblown surface, over which we were once again able to make good brisk progress towards the Maze on Ross Island, which marks the entrance to Sidney Herbert Sound. About an hour later however a sharp S.W. wind sprang up, and soon developed into a blizzard with blinding ~~snow~~ <sup>xt</sup> drift snow whirling into our faces, for our course obliged us to head directly into it. Patches of frostbite began to appear on our faces, and <sup>xt</sup> became increasingly difficult to get the dogs to go forward into the storm; but we had to keep on in order to get through to our depot before supplies become exhausted. Pitching the tents in the late afternoon was a job for all of us, first ~~one~~ <sup>one</sup> tent, and then ~~on~~ <sup>on</sup> the other, and we were glad when at last we could creep inside and thaw the ice off our faces and make a cup of good hot cocoa on the primus. After eating our pemmican, we crept into our icy sleeping bags, after having extracted from them with a spoon as much as possible of the snow which the ~~wind~~

blizzard had forced into them.--We covered a distance of 9 miles today.--  
The temperature ranged between -2 and -8F.

Friday 7th September. The storm abated during the night, and it was fine and clear in the morning (temperature -22F). We started off at the usual time, and with Taylor leading the way, made good progress over a hard surface past the Naze up to the entrance of the northern part of Sydney Herbert Sound. Rounding the corner of Vega Island, we had a good view right through into the Crown Prince Gustav Channel, with Monument Island lying in the middle of it. The surface here again deteriorated, but was not by any means so soft and deep as that which we encountered in the Erebus and Terror Gulf. On the other hand the dogs soon began to show very marked signs of weakening, several of them not pulling at all, so that about 50% of the work of moving the sledges had to be done by us ourselves. In the afternoon two dogs, Mutt in the "Chromosomes" team and Jimmie in the "Big boys" team collapsed and had to be placed on the sledges. By nightfall we got through the Sound into the Crown Prince Gustav Channel, and made camp beneath the high sheer black basalt cliff of Cape Scott Keltie on Vega Island. After a discussion of the dog food situation we came to the conclusion that it was absolutely necessary to kill one of the dogs to feed the others, otherwise the next day would see them all in a state of collapse from which, even if we ~~were~~ should then find a seal for them, their recovery would be doubtful. Mutt was chosen as the victim, and despatched by James with the revolver. James then cut up the body into 13 pieces inside the tent, and fed the remaining dogs with them. They left nothing except a few pieces of bone and some fur. It was a poor ending for a brave comrade and a gallant old puller, who had done his best to serve us long after his stomach was quite empty, and I can tell you it went against the grain for us to do it; but it was absolutely necessary to save the other dogs.-- We travelled 9 miles today. The temperature varied between -13 and -26F today.--A few snow petrels were seen in the evening as we made camp, flying high up against the cliffs of Cape Scott Keltie.

Saturday 8th September. A calm, fine morning, with a temperature of -13F. We set out towards Vega Island, with Taylor helping to pull on our foremost sledge, and out in the Crown Prince Gustav Channel soon got onto a good hard surface over which the dogs, even in their weakened state, were able to pull the sledges fairly easily, with our help. Approaching Vortex Island, Taylor and I took our team to the left, and James and Russell theirs to the right side of it, and finally we met at the depot on ~~the~~ its N.E. side. James extracted the tin of dog pemmican, our ration box, and the precious half can of paraffin, also the skis, from it, while Russell made a reconnaissance on foot among the large icebergs lying between Vortex and Corry Islands in search of a seal, but found none. Having loaded the material onto our sledges, we continued our journey in a westerly direction towards a channel between Eagle Island and the island (afterwards named Tabarin Island) which lies behind Corry Island; this channel appears to afford a short cut into the Bay of a Thousand Icebergs. We made camp about half a mile away from a conspicuous horn-like promontory on Tabarin Island, and fed the dogs a double ration of pemmican. We much appreciated having the supply of paraffin for our stoves, this enabling us to dry out to a certain extent our wet footgear and other clothing, instead of merely thawing it out sufficiently to get into, as had been the case during the last few days.--We covered a distance of 13 miles today. The temperature rose to +5 in the afternoon, causing us to feel quite warm.--We saw a Giant Petrel (Macronectes giganteus) flying near us between Cape Scott Keltie and Vortex Island in the forenoon; also, a little later, a Dominican Gull (Larus Dominicanus).

Sunday 9th September. Again a fine, comparatively warm morning (+5F.), although there was a good deal of cloud to the S. and W. We started off, Taylor and I leading, and rounded the horn-like point at the end of Tabarin Island into the southern end of the Bay of a Thousand Icebergs. Taylor still had to pull in man harness to assist the dogs, which are still rather weak. After travelling a short distance, we were stopped by a call from James and Russell, who were following up behind, and they told us that they were both feeling unwell, apparently as the result of having eaten

part of a tin of preserved meat taken from Nordenskjöld's depot on Ross Island. They were however able to keep going slowly, and about an hour later we passed a large iceberg about half a mile to the left of us, by the side of which several seals were visible lying out on the ice. The weather was now deteriorating rapidly, a strong W. wind having sprung up, and ragged clouds dominating the firmament. In these circumstances we decided to camp and kill some of the seals for food. James and Russell were by this time feeling better, and went over to the berg with the revolver, while Taylor and I remained by the sledges and pitched the tents, not without difficulty in the strong wind. Russell then returned, and Taylor and I went over to the berg with our dogs harnessed to the empty sledge; the dogs knew what was afoot, and needed no urging. When we arrived at the steaming carcass, which had just been split open by James, they piled into it, tearing off and gulping down great lumps of flesh and blubber, in an ecstasy of delight. Taylor took some photographs of this satisfying scene. Soon they could eat no more, and I took them waddling contentedly back to camp. Then came the turn of the other team. I brought back a ration box filled with meat and blubber as food and fuel for ourselves, and we had a good feed of fried steak that evening. We also tried burning the blubber in tin cans to warm the tent, and after some unsuccessful attempts, attended by violent fits of coughing and a general darkening of the tent lining and ourselves, got it to burn satisfactorily with the aid of pieces of lampwick immersed in the melted fat. During the afternoon the temperature rose to above freezing point, due to the warm westerly wind. James and Russell took their team over for a second feed in the evening, but they were already so gorged that they could hardly eat any more. Distance traversed today: 4 miles.

Monday 10th September. A calm cloudy morning, with a temperature of +21 F. Starting out at 1000hrs, we headed straight across towards the north end of the Bay of a Thousand Icebergs, and found the surface very good, hard and windswept, and in the main fairly smooth. The condition of the dogs was vastly improved by their good feed yesterday, and they pulled well, so that we progressed steadily at a brisk pace across the bay. We saw several seals lying on the ice not far from our camping site in the morning, but none later, as we traversed the northern part of the bay. We kept on until we ~~vvv~~ reached the north end of the bay at 1730hrs, having covered a distance of 15 miles.--Today was my 34th birthday, and also the 5th birthday of my son Ernst, and we celebrated the occasion in the tent with a potfull of sealmeat stew and the remains of a bottle of "Hesperidine" saved by James and Russell from the Seymour Island Depot and kindly donated by them.

Tuesday 11th September. A fine warm morning, and we felt quite content as we prepared to start out on the last 8 miles lap of our journey back to the base. The sledges having been loaded, and the dogs harnessed up, Taylor and Russell prospected a way up onto the slope of the land ice, and then helped me to get the first sledge and team up onto it; they then returned to help James bring the second team up. Once over the initial steep slope, we were able to make steady progress up the hill on a good hard windblown surface, with Taylor pulling on our sledge and Russell on the other. We all had skis or snowshoes on, as a precaution against crevasses. We got to the summit, at the point where Back, Davies and Matheson left us five weeks earlier, shortly after lunchtime, when a S.W. wind sprang up and gradually increased in force as we were passing the E. side of Pyramid Peak. This did not inconvenience us, as we were travelling in approximately the same direction, but between Pyramid Peak and Nobby Nunatak, we came onto a treacherous surface, partly smooth glassy ice and partly snow sastrugi, upon which the more topheavy 9-foot sledge, largely owing to the strong wind, became quite unmanageable, and several capsizes occurred. James assisted me with the sledge until we reached the nunatak; then he and Russell went on downhill with their sledge, while Taylor and I followed after. We had to put the wire brakes on the sledges. Luckily the snow lying on the steep slope above the base was soft and even, and we had a rapid and uneventful run down to the base. Several figures came running out of the house to meet us. Greetings and handshaking all round, and many willing hands to help us unload the sledges and chain up the dogs. Into the house, everybody <sup>were</sup> talking at the same time, a most welcome cup of tea from the galley, and we <sup>were</sup> at last back from our five weeks journey, happy, healthy, and hungry. My wife's birthday coinciding with this day of our return, it was celebrated with full honours this evening,

and I was not the only one whose thoughts turned longingly towards those at home on this happy occasion.

Wednesday 12th September. Except for a conference on the topic of the working out of the various results of the sledging journey, we did very little today, feeling excusably lazy and disinclined to do anything except eat and sit about. I looked out the spare clothing from my sleeping bag, and took the latter to pieces in order to dry it out thoroughly. The weather has deteriorated blowing a 40-50 m.p.h. wind. W. gale during the night and today, and sending lumps of piecrust snow rattling against the walls and over the roof. We were lucky to get back just before this bad weather started. I forgot to mention that we were surprised yesterday, on coming over the top of the slope, to see Antarctic Sound practically all open water; more and more of the bay ice is going out, and today the open water extends almost up to the beach. One of Ashton's tide gauges has been lost, going out to sea on an ice floe, but the other, situated fairly deep in the bay on the other side of Seal Point, is still safe.--Two seal leopards were seen here during our absence, and both were killed for dog food.--The two puppies Hobbs and Hinks have now almost reached adult size, and will soon be incorporated into the depleted "Chromosomes" team.--Tomorrow we will start intensive work on the survey data, photographs, and scientific material collected by us during the sledging journey, hoping to complete it in about three weeks, before starting on our second expedition to Eagle Archipelago south of the Bay of a Thousand Icebergs.

Thursday 13th September. A very bright sunny day, mainly fairly calm although a high wind sprang up again in the evening. I spent the forenoon making photographs with the  $\frac{1}{2}$  plate camera of the tin canister found by us at the depot on Seymour Island; on being opened it proved to contain a very well preserved document in English signed by Captain J. Irizar of the gunboat "Uruguay", announcing that he was leaving a depot of foodstuffs there and also on Paulet Island; overleaf was a list of the goods left. In the afternoon Flett and I commenced work on the developing and printing of the films exposed by Taylor; I had none of my own, my Leica camera having developed a defect during our first few days out. In the evening I transcribed part of the rough diary kept by me during the journey. Taylor and Ashton went over to the bay ~~with~~ with a theodolite to determine the level of the tide gauge set up there; Marshall and Matheson took the "Big boys" team over to Eagle Cove, via Boeckella Lake, and brought back a drum of paraffin.

Friday 14th September. A strong wind blew during the night, but the day was fine bright and warm. Flett and I worked on the developing and printing of the photographic record, Russell providing the supply of water for washing and making up solutions. Taylor and Ashton went out for a short time during the afternoon to examine the tide gauge in the bay. Ashton also repaired my Leica camera.--One of the ~~two~~ smallest puppies fell off the icefoot into the sea this morning and was drowned, in spite of Russell's attempt to save it whereby he got himself a wetting in the icy water.

Saturday 15th September. A very bright calm day, quite springlike in its warmth (+26F). Flett and I continued our photographic work, and after lunch I went over ~~with~~ to the hill above Eagle Cove to obtain a specimen of the Buellia for my series which is intended to throw light on the seasonal development of the apothecium. Another of the puppies, Reuben, fell into the sea today, but got out again after 20 minutes immersion, and was brought into the house and rubbed down with towels until he had recovered from his icy drenching. A young seal was seen in the bay and killed for dog food. & Ashton and Back went up onto the lower slopes of Mt Flora in the afternoon to collect plant fossils.

Sunday 16th September. We continued our photographic work, and in addition I dried out and labelled some of our botanical specimens from Snow Hill and Cockburn Island. The weather was bright, warm, and calm, and another young seal was obtained.