SCOTTISH ARCTIC CLUB

To Encourage Adventurous Endeavour and Interest in the Science, Culture and Protection of the Arctic

The Lockdown Newsletter – May 2020

www.scottisharcticclub.org.uk

Editorial

These are difficult times: we have been deprived of our friends, family and the great outdoors, and the return to normality will take some time. So, to keep SAC members amused (and to keep me busy), here is a bumper edition of the newsletter. Enjoy, and a big 'thank you' to all the contributors.

50th Anniversary Expedition to East Greenland

The global situation about Covid-19 is so uncertain that we have had to postpone our expedition to Tasiilaq and Ammassalik Island to equivalent dates in 2021. As time has passed and our lockdown continues, it became inevitable that plans for the summer would have to change. Over 30 Club members were due to fly into Greenland on the 25th July for 2 weeks and would be joined there by about another ten members travelling independently. We now have longer to look forward to it.

The SAEF Awards

Sue Fenton Reports:
Agathe Stoeffel has returned her grant as UNIS and the University of Aberdeen have cancelled all fieldwork this summer. Ashton MacDonald and Tormod Doherty were already in Svalbard when travel restrictions were put in place. Zelig Basan had postponed his trip to Greenland until September. Huw Oliver should have been in Greenland in March for his fat bike trip but we don't know if he managed to get back. Everyone else is on hold, awaiting further news.

50th Anniversary Gathering of the Club

As you know, 2020 marks the 50th anniversary of the first Scottish Arctic Club Supper in Dundee. so we will return to the city for this special anniversary. We have booked accommodation at the Hilton DoubleTree Hotel and booking is now open. You can access the booking system online at http://eventsathilton.com/show/5dcbfee81a324c196a255b01

If that fails, you can phone the hotel at 01382 641 122. It is an event that is not to be missed and hopefully the lockdown will have eased sufficiently.

From Fraser Melville: A Rather Tyring Walk

"A Rather Tyring Walk" is a challenge I shall undertake on the 23rd of May where I will be dragging two 4x4 tyres for 26 kilometres through Fife. I will be doing this in an effort to raise funds for the NHS and to honour their astounding hard work during these challenging times we all face.

I would be very grateful if you could spare a few minutes of your day to donate to the NHS Charities Together through my JustGiving page – "A Rather Tyring Walk". Any donations are gratefully appreciated. Please could you share this post, thank you.

https://www.justgiving.com/fundraising/arathertyringwalk?utm_source=Sharethis&utm_medium=fundraising&utm_content=arathertyringwalk&utm_campaign=pfp-email&utm_term=8c0339e497bd44bbbe1a0186ed0aded1.

A New Book: The War in North-East Greenland

The War in North-East Greenland is the incredible but truthful account of one of the most peculiar battlegrounds during World War II, when a handful of Danish and Norwegian fur hunters in the eastern North Greenland supported by local Greenlanders formed the world's smallest army and fought the German superior force and their "Operation Holzauge" - a battle that has so far been surrounded by mysticism and many myths. Exciting and intriguing as a crime novel, the story here also tells of how the German military leader, Hermann Ritter, tries to escape this meaningless war and therefore forms an almost unlikely alliance with one of his enemies.

The author, Jens Erik Schultz, has uncovered novel documents from the German and American war archives, diaries, letters, etc., and for the first time we now get an insight into what really happened. He is a co-founder of the Nanok Company and has been in North-East Greenland with Nanok about ten times. Schultz, who is now 89 years old, is a former chief physician at the Horsens Hospital. His grandfather was the physician on the famous Denmark-Expedition to North-East Greenland 1906-08.

"The War in Northeast Greenland" is published by Xsirius Books. It has 103 pages in hardcover. with maps and about. 50 illustrations. The book is published in both a Danish and an English edition.

The book is on stock now and ready for ordering – with a 25 % discount - directly from the Xsirius Books website: https://www.xsirius.dk/da/The%20War%20in%20North-East%20Greenland or contact Peter Schmidt Mikkelsen at psm@xsirius.dk

The Summer Solstice Meet

This was planned for 19-21 June hosted by Myrtle Simpson at Farletter, Kincraig; for the now familiar reasons, this is cancelled.

The Rainbow

The rainbow has become the symbol of hope for the virus outbreak. Here is my contribution. Robert Marshall was an indefatigable explorer of the Alaskan wilderness. In 1929 he was on the North Fork of the Koyukuk River. He passed the cliffs of Frigid Crags and Boreal Mountain christening them the 'Gates of the Artic' Here is a rainbow over Boreal Mountain. (Gates of the Arctic is now the second largest national park in the USA.)

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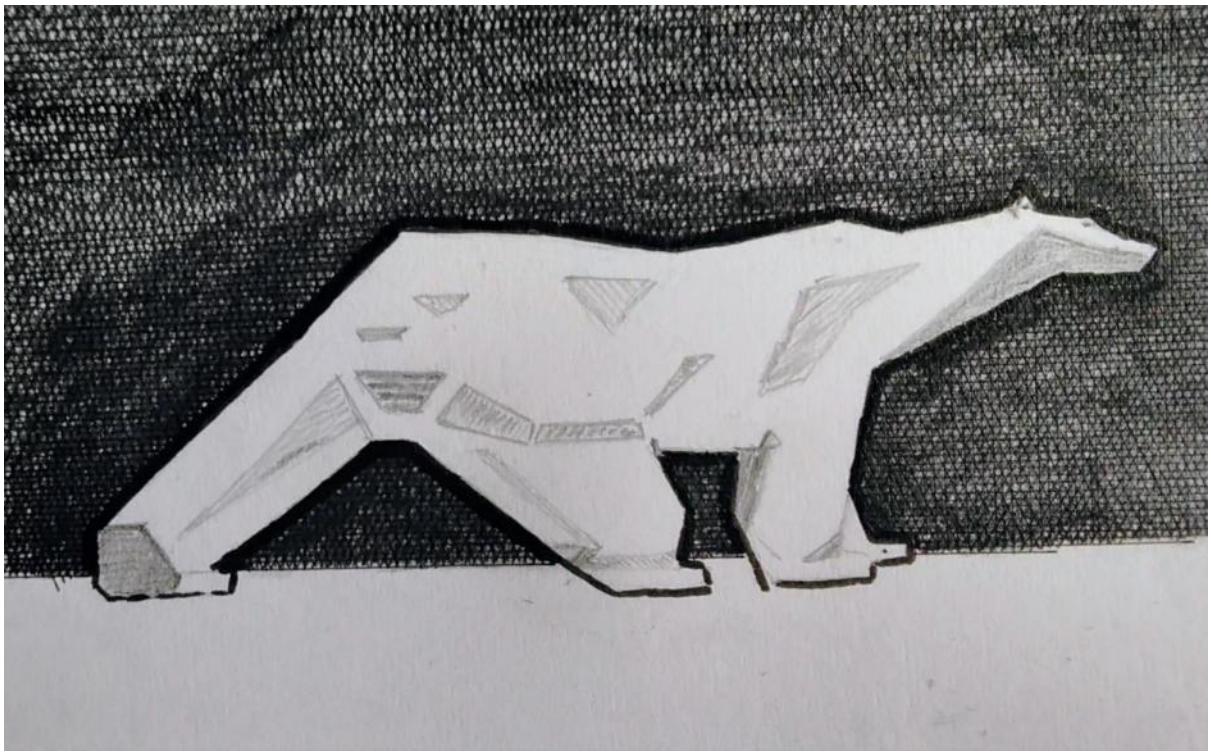
Camp in Liverpool Land. *Picture by John Hutchinson*



1Polar Bear *John Hutchinson*

Revisiting Numto

Bryan Alexander

Back in 2000, I was commissioned by a magazine in the US to produce a feature article on a remarkable reindeer drive in Siberia. It seemed like an ambitious project, to move 1000 reindeer 1000 miles from the north of the Yamal Peninsula to Khanty Mansiysk. The objective was to try to re-establish reindeer herding amongst the Forest Nenets and Khanty communities in an area where it had been decimated by the oil and gas industry.

Moving reindeer in Siberia wasn't something that was new, but it had previously been done using planes and sometimes large helicopters. Reindeer are very susceptible to stress, and moving them in that way had resulted in a high death rate. The plan this time was to drive the reindeer at their own pace with herders travelling by reindeer sled, a journey that would take six months complete. This reindeer drive was also different in that it was to be largely organised, and entirely carried out, by northern native people.

The project did have its fair share of naysayers. There were those who thought that the native people would not have the organisational skills necessary to cope with all the logistical problems that might arise. Some too, questioned the wisdom of taking tundra reindeer to a forest area and whether with their shorter legs, they would be able to dig through deep snow in the forests to reach the lichen they feed on. There were others who predicted that the reindeer would just wander back to the Yamal, as tundra reindeer have a natural instinct to head north in the spring.

Reindeer being driven into a corral at Vassilly Pyak's camp.

Sveta Pyak chopping frozen fish to feed to her reindeer.

I was unable to cover the entire journey, so the plan was for me to travel north with herders from Khanty Mansiysk. They would then meet the reindeer herd which was being driven south by a group of Nenets from the Yamal. The rendezvous point was a lake, aptly named 'reindeer lake,' on the border of the Yamal and Khanty Mansiysk regions. From there the Khanty Mansiysk herders would take over and continue to drive the reindeer south.

At the beginning of February 2000, I travelled to Numto, in the north of the Khanty Mansiysk region. It's a small village, situated by a lake with the same name. Numto is a very special place for the Forest Nenets as well as for other native peoples of the area. The name translates as 'Num's Lake,' Num being the principal deity of the Nenets. The lake and the island in it are considered sacred and have various taboos associated with them. Two days after I arrived, the herders were ready to leave. We set off, a

group of ten of us, travelling by reindeer sled across the frozen lake. We stopped close to the sacred island and sacrificed a reindeer and performed a ritual for Num and for good luck on our journey.

A Khanty woman's boots with a traditional design pattern.

Vassilly Pyak with his wife Sveta (centre) and her mother Feodosia.

Our route took us northwest, as day after day we travelled through snow covered forests and open tundra. At times it seemed like an almost fairy tale landscape. I found that travelling by reindeer sled was a wonderfully quiet and peaceful way to experience this northern landscape. The only sounds were the reindeer's hooves on the snow and the tinkling of bells on their harness.

The herd were scheduled to arrive at Reindeer Lake between the 13th and 15th of February, dates that had been set several months before. In fact they arrived punctually on the 14th February. Apart from a couple of stormy days, the weather remained sunny and cold most days with temperatures in the -25°C to -35°C range. Although the herders kept a close eye on the reindeer and were constantly rounding up stragglers, we were fortunate not to lose any of the reindeer on the journey back to Numto.

The end of our journey was a corral about 25 miles from the village. We arrived to find a lot of people had gathered there and the process of dividing reindeer herd began. All the herders in our group were paid for their work with reindeer.

Vassilly Pyak taps on his cabin window to attract the attention of a pet reindeer calf.

Vassilly Pyak hauls up his fish trap up onto the ice of the frozen Kazym River.

Reindeer skins drying on a corral fence at Forest Nenets homestead.

From time to time over the years I have wondered whether this reindeer project really had been a success. Did it help the native people? Did the reindeer stay, or did they wander north back to the Yamal? Did these tundra reindeer adapt to life in the forest? These were all questions that I didn't have answers to.

During the past few years I have been working on a project to revisit some the arctic communities and photograph people again whom I first photographed many years ago. I am interested in the changes and what has happened in their lives. Last autumn I photographed several people in Northwest Greenland that I had first photographed as children in 1971. With 2020 being 20 years since the reindeer drive, it seemed like an appropriate time to return to try and meet up with some of the herders that I had travelled with on that memorable journey and hear their views on the project.

Vassilly Pyak sitting on a reindeer sled near his corral.

Vassilly Pyak driving a reindeer sled in the forest.

In early February this year I travelled back to Numto. In 2000, the village had consisted of just a handful of old log houses, now it is larger with a row of modern bungalow style wooden houses. The population of Numto area is small, a little under 200 people, most of whom don't live in the village, but in camps out in the surrounding forest areas.

At Numto I was met by Pavel and Natasha, the same couple I had stayed with on my first visit. They lived in the same old house as they did in 2000. While I was in Numto this time I visited a Khanty couple, Andrey Moldanov and his wife Ljuba. They had been on the trek and were now both retired and living in the village. Their herd of 60-70 reindeer was being looked after in the forest by their nephew, Misha. They seemed very positive about the project and told me that the 20 reindeer they had received as payment had adapted well and helped them during a difficult time.

Vassilly Pyak, had been the leader of our group on the trek in 2000. He is a Forest Nenets and I had shared a tent with him and his Khanty wife, Sveta, during the reindeer trek. Now twenty years later, they had invited me to visit them at their camp near Numto.

Sveta Pyak lighting a clay oven outside to bake bread.

Sveta Pyak leading a draught reindeer.

It took just over an hour by snowmobile from the village to reach Vassilly's camp which is located on his family's ancestral lands. I was surprised when I arrived as it was much larger than I had expected. With several buildings and a wooden corral nearby, to me it looked more like a homestead than a

camp. There was the main cabin where he and Sveta lived and another cabin close by where Sveta's mother, Feodosia, lived. There were also several out buildings, including a small stilted storage hut where his family's idols, amulets and other sacred objects were kept.

He had chosen a good site, situated on the banks of the Kazym river. Only 100 yards away, they had a fish trap set under the ice that provided enough fish for themselves and their reindeer throughout the winter.

One of the main changes that have occurred over the past twenty years is that people out in the forests have moved from living in Chums (tepee style tents) to wooden huts. It makes sense, more room, more comfort and there was plenty of wood on hand to build with.

Vassilly told me that the reindeer drive had really helped him and Sveta. Before it, he owned very few reindeer, but after being paid with 30 reindeer for his work on the trek he had been able to gradually build up his herd to the 150 adult animals he has today. For him that is an ideal number and he doesn't want more because it would involve too much work. Vassilly also told me that the reindeer he got from the Yamal adapted well to life in the forest and they didn't head back north to the Yamal. Apparently, there were herders who did lose some of the reindeer they were given, but according to Vassilly, they were mainly people who didn't look after their animals properly.

As I walked amongst Vassilly and Sveta's reindeer after they had gathered them into a corral, I was impressed by the condition of the animals. Normally, towards the end of the winter, reindeer are not in the best condition and their ribs are often visible, but Vassilly's reindeer appeared well covered, despite it being a winter of deep snow in the forests. Vassilly put their condition down to the abundance of mushrooms there had been in the previous autumn, but I suspect it was more to do with having very good pastures.

During the winter, Vassilly rounds up his reindeer more or less every day and drives them into a corral near his cabin, where they are fed a little bit of frozen fish. In summer he lets them roam free. He told me they don't go too far, maybe 30 km away, because there are good pastures nearby. He then rounds them up again in the autumn after the first snow settles.

Another significant change since my first visit was the number of snowmobiles there were now. In 2000 there had been very few, now most of the herders owned one. Vassilly had a snowmobile too which he used for rounding up reindeer and for when he travelled long distances. He and Sveta still kept draught reindeer and trained them to pull sleds and to compete in reindeer races at local festivals. Last year, Sveta won the women's reindeer race at a festival in Khanty Mansiysk. Her prize was a new snowmobile.

Sveta Pyak with 'Ava' her pet reindeer calf.

Sveta Pyak moving a pole to close the entrance of the corral.

Compared with many northern Siberian native people, Vassilly and Sveta seem to have a relatively good life in the forest. They have sufficient reindeer meat and fish to eat, as well as berries and mushrooms in the autumn. There is however a dark cloud on the horizon. Vassilly's ancestral lands are surrounded by oil fields. Although their land is in a designated 'Nature Park,' that doesn't offer his reindeer pastures any real protection against the oil and gas development. Vassilly seems to have maintained good relations with the local oil company. "You can't fight these people," he explained, "You have to work with them." For the time, at least, Vassilly and his family are able to continue leading their traditional life in the forest, but for how long remains to be seen.

Before I left Numto, a Forest Nenets man asked me whether I would come back in another 20 years. I told him that I would like to, but pointed out that by then I would be in my nineties, so it was unlikely, but my spirit might return. He paused for a moment and then said, "It will be good if your spirit comes back, then we will be able to see you in our dreams."

While I was in this remote part of northern Siberia, I was in an area where there was no internet, no crisis and no cornona virus. It was only when I got back to Moscow in the middle of March that I realised how serious the situation with the virus had become. I discovered that my flight back to the UK had been cancelled, but I was fortunate in being able to get a seat on a flight with another airline just before Russia closed its borders.

The Ledge

Doug Anderson

The Twin Otter skimmed in over a cluster of icebergs grounded in shallows at the river mouth.

To my surprise we seemed to be heading straight in. The landing strip opened up ahead, an area of flattish gravel marked only with two torn pieces of fluorescent pink material. For a few moments the tundra flashed passed the windows then at the last minute the pilot banked the plane to port turning and climbing steeply across the broad expanse of the river delta.

We four sat gripping the arm rests at the very back. In front of us our food and equipment was piled in a random heap. Looking forward, past the shoulders of the crew, through the front windshield, a rock wall slipped by. The plane banked steeply and beyond the wing tip I watched the icebergs then gravel come round again. The plane turned more steeply until I thought the pile of equipment was sure to break loose. I contemplated the havoc created should centrifugal force for a moment lose its grip and send our 80kg outboard motor careering round the cabin. A deadly cargo of 400 liters of petrol in rubberized bags lay wobbling on the floor like fruit jellies at a kids' party.

I briefly speculated on the consequences should the outboard engine land flattening a fuel bag and send a wave of high octane gasoline sweeping through the plane. Such are the fearful imaginings of a family man afraid of flying! I needn't have worried. The nose dipped and with only a slight bump, we were soon rolling to a halt on the gravel.

Trying to play down my relief I unclipped and scrambled forward. I had something new to worry about and that was how to get a ton of gasoline and gear down to the sea. The distance looked significant and I had no illusions about who would imminently become the primary pack animal. If at all possible I wanted to get our drop off as close to the water's edge as possible in order cut the length of each relay to a minimum.

With a generosity of spirit typical of those who navigate the northern skies, our crew unhesitatingly agreed to drive round the tundra in search of a good drop off spot. In the distance was the outline of a river leading in the direction of the sea, and soon we were bumping off towards it. As we drew nearer I began to have misgivings. On stepping down it was immediately obvious that the river was very shallow, and definitely not up to the job of floating our impedimenta to the sea. If we put in here, we would face an impossibly arduous drag through miles of braided shallows to reach water deep enough to float. I was embarrassed because the crew still had to fly on to Station Nord, and asking them to continue taxiing around this delta was not going to shorten their day. Without prompting, however, they suggested we try another direction. Guilty, but relieved, I clambered back on board and we set off again, bouncing heavily over increasingly rough ground. For what seemed a long time we trundled on until we stopped unexpectedly…... Had we arrived? No. The pilot shoved the throttles forward, the engine revs increased alarmingly, but the aircraft did not budge.

I looked anxious. "Don't worry …… Sand" said the pilot giving the throttles another shove. The plane strained and rattled, and then heaved itself forward, bouncing dramatically into the air before crashing

down again. “No problem”, said the pilot. Onwards we bounced, until even he thought things had gone far enough. We had made it to within a quarter of a mile of the water’s edge.

We tumbled out and hurriedly unloaded. In five minutes all our gear was spread on the ground and we stood shaking hands. The pilot looked at us, me, my wife Andrea, the two children Leif and Orea and referring I think to our plans to circumnavigate Milne Land and boat down to the Liverpool coast, expostulated:… *'Kind of crazy'* ...(he paused as if considering the sanity of our undertaking)... *'But good'* ... I was relieved, I didn't want to be condemned by this maniac for being reckless!

A minute later the Twin Otter trundled over the gravel and suddenly it was airborne. Turning on a wing tip we all ducked as it swooped so low we felt we would be scalped. We stared until it merged into the clouds.

I looked around and tried to take stock. 'Wow!' We were certainly alone! Just the four of us, standing on this Arctic river delta with a huge pile of gear. Apart from half a ton of gasoline we had 2 outboard engines (one large one small, 2 inflatable boats (one large, one small) camping gear, food for six weeks a rifle and a pile of other essentials too many to list. I worried about the size of the pile, the remaining distance to the sea, and the various objective dangers threatening tomorrow's outcome. However by ten o’clock in the evening camp was pitched and we were in the tent cooking. It had been a long and strenuous day. Tomorrow looked like being harder. It started to rain but I was too tired to care.

I woke early and lay thinking about the effort needed to move the gear. What stressed me was the need to make a depot at the water's edge, not usually problematic, but on this occasion it meant putting progressively more and more of our indispensable supplies into harm's way. The sand spit on which I planned to build the depot was threatened by a group of huge icebergs we had flown over the previous day. I was acutely aware that, if any one of them decided to roll over, a tidal wave would sweep my carefully built pile into the sea before some family clairvoyant could say: “I knew that was going to happen”. This proved not just idle paranoia on my part for, about two weeks' later, exactly this did happen to another expedition in exactly this spot.

At 6am I got up, unable to stand the anticipation any longer. I knew the day was going to be a killer but this year I had an innovation, a secret weapon, and I was keen to see if it was going to work. The device consisted of the lid from our small crate, our boat hook and long handled ice chisel, and finally two launch wheels from the boat. These parts were then bolted together to make a rude handcart. It may sound a bit Heath Robinson but it actually performed brilliantly even when loaded with 100kg of fuel. In particular, its balloon tires prevented it sinking into the 600 yards of soft ground that separated me from the sand spit. Nonetheless, it took 12 hours of stoically dragging it back and forth across tundra, mud, sand and tidal pools until all the items were moved from the drop off point to the sand spit. Meanwhile, Andrea sorted the loads and the children did what children do at the seaside.

It rained gently on and off most of the day, but I barely noticed. By load 16 I wouldn't have noticed a blizzard. This was just as well since the weather was deteriorating and we still had to get under way. By 7pm all goods and chattels were embarked into our Bombard C5 inflatable and we put to sea with our six-foot, No2 inflatable, overloaded with fuel, in tow. This second innovation was not successful in the choppy waters, and had to be abandoned, its contents brought on board after only half a mile. The incident, though trivial, stressed my patience and I may have become a bit testy!? The weather continued to deteriorate. We pressed on constantly casting about for anywhere that might afford a campsite and shelter for the boat. Eventually, around midnight, we found a well-protected bay. By which time everyone had had enough but exhausted or not tents still had to be pitched and food cooked. Eating was a blur and sleep instant.

We spent day three recovering. After that we explored the region in a more relaxed fashion. Leaving a depot of half our food and fuel, we set off to circumnavigate Milne Land. This large island is roughly triangular in shape, measuring about 40 miles on each side. Off the north-east corner lie the Bear Islands, a string of small islands inhabited by birds and seals and perhaps polar bears, although they eluded us. We decided to investigate these isles until the weather improved and then set off into Island Fjord. This first outing was curtailed when Andrea fell overboard (a not entirely uncommon event!) while undertaking to take a line ashore and we were obliged to set up camp to dry her out.

Island Fjord brings new meaning to the word spectacular. Both shores are iron-bound for 40 miles with cliffs of mountainous proportions rising up to 5000ft on the southern shore, and 7000ft to the north. The only breaks in this vertical rock scape are created by unscaleable glaciers dripping down from the icy plateau above.

That evening we enjoyed a clear sky and mirror calm water for which we were very grateful, as fierce katabatic winds can blast down from the inland ice and, funneled by the cliffs, build heavy seas over the fjord's 40-mile reach. The low evening sun made the water sparkle as we planed over its glassy surface weaving easily between well-spaced 'flows'. The huge scale of the great precipices was difficult to grasp. Immense sheets of rock facing seawards and tower after rocky tower marching inland. The snail's pace at which we seemed to crawl along their base belied the fact that we were bettering 15 knots over the water. There was more unclimbed rock here than you could shake a stick at.

We hugged the southern shore for 20 miles without seeing a single landing spot. Then we tried the northern side to see if we might fare better there. Finally, after another 10 miles, we rounded a slaby buttress to discover a tiny bay. The bay was bounded on the west by a grassy promontory. A 200ft scramble up scree brought us to a fine, elevated camping spot with commanding views up and down the fjord. The broad summit gave us plenty of space to spread out. Leif lit a small tundra fire and we sat round preparing our meal and watched the colours of the water, ice and rock change in the evening sun. In the Arctic calm the silence of the wilderness brought peace.

It was a fine night and around midnight we turned in without bothering to put up the tent. Around 5am I awoke feeling distinctly chilly. A blanket of fog hung over us, soaking the surface of the ground

and our sleeping bags. I pulled the wet fabric around my head, shut my eyes and hoped it would not rain. Thankfully it didn't. At 8am a pale sun burned its way through the fog; by the time everybody was ready to rise all was dry.

Without a full Yosemite rock rack, the scope for land-based exploration was limited. However, behind the camp an easy looking gully split the lowest rock buttress and seemed to lead to an extensive terrace at about 1000ft. I thought a short excursion to the terrace would be good for the constitution and provide some worthwhile views. Orea, regarding those who enjoy unnecessary exercise as terminally afflicted, declined my invitation to an expedition to explore the gully. Leif was enthusiastic at first but retreated as soon as the ground got steeper.

Andrea and I pressed on however. In retrospect, youth showed the better judgment. All that can be said about my own was that, despite 25 years' mountaineering in distant lands, I seemed to have learned very little about the deceptiveness of “easy gullies”! Inevitably we kept climbing upwards, unroped for we had none, thinking each minor obstacle would be the last. It wasn't long before we had accumulated enough of these obstacles for the exposure to be no longer minor.

At some indeterminate point the adrenaline began to flow freely, the ground got steeper and looser, and the ledge simultaneously more desirable and more inaccessible. Only a little higher and I got myself into a real nervous sweat, trying to bridge an open corner that proved increasingly difficult. I had to down-climb and by-pass it on a pile of shifting blocks. Andrea and I were by now totally committed and only intense concentration and very careful movement over the next half an hour brought us to the top without causing a major rock avalanche or other disaster.

Hauling out onto the terrace, Andrea and I immediately agreed that it had been one of life's least pleasant experiences. And one we were not going to repeat under “any” circumstances. I remembered a number of grassy rakes that cut down across the buttress and I was pretty sure that one would provide a saner descent. If not, the glacier which passed the end of the terrace certainly would. In any event nothing was going to persuade us to try down-climbing that awful gully.

For half an hour we explored the terrace and took in the magnificent views. Through binoculars I could see Orea and Leif 1000ft below sitting on the ground sheet playing cards. Our little boat (5m) looked truly tiny lying at anchor in the little bay flanked as it was by two huge rock faces. The scenery and isolation of the place was inspiring, but we had already been away longer than I had expected and I would be more comfortable when we had found a safe way back to terra firma.

The first choice was to check out the possibility of a descent onto the glacier since this seemed likely to be the quickest route. A closer inspection soon dispersed that theory. It would be quite unattainable without an abseil, and it was so crevassed that it represented a very suspect method of salvation.

I remained confident about the grassy rakes but the trick would be to identify a viable one from above.

After a couple of false trails I found what looked likely to be a major line running down across the cliff. The angle was a bit steeper than I had hoped for, but I set off down with a determined air. Andrea followed without comment. After about 200ft. the rake petered out. The slabs above and below were

now steeper still. However, I managed to down-climb a small rock step to reach another, narrower rake. Andrea followed without enthusiasm. It began to rain.

This new rake fizzled out pretty quickly, merging into the cliff face. Moving out onto the face I found myself hand traversing unroped across a huge expanse of rock. I was 500ft off the deck and the holds seemed to be getting smaller and wetter. I paused and looked down at the camp but the kids had disappeared under the ground sheet out of the rain. This level of fear hadn't been in the morning's game plan, and things were again getting out of hand. One slip and the team would have to appoint a new skipper from their midst to navigate 150miles back to Constable Point. Barely in control, I struggled back to the ledge where Andrea stood with a stressed look on her face. Without discussion we retreated back up the rakes, both concentrating intensely to avoid slipping on the now wet grass. Half an hour later we were back on the terrace having used up almost as much adrenaline as in the gully.

There was nothing for it now but to return to that hellish place. We both knew it, so we didn't waste any time wringing our hands over the matter. Moving close together to reduce the momentum of rocks we might disturb onto the other, we entered the gully again in defiance of our so recent promise. “Never Again”, that unspoken thought. But here we were “Again” just the same! So we moved slowly down, taking exquisite care to each step, every muscle taut, silently cursing any rock that shifted. Going down was more difficult than climbing up but we were psyched to succeed. The prospect of our beautiful, obedient, precious children being stranded alone, to fend for themselves in this lonely place 100s of miles from anywhere, provided every incentive needed to ensure we made no mistakes.

Sometime later we exited the gully, relief exuding from every pore. Back at camp we rightly got an earful of abuse from the kids for being away so long. We apologized profusely, but were too embarrassed and guilty to explain the reason. They firmly believed we were just having fun.

Clavering Island Expedition 1999

Kate Lea

It was not until 1999 that I fulfilled my ambition to circumnavigate Clavering Island in North East Greenland. I wanted to do this back in 1992 with other members of the British North East Greenland Project but they vetoed it as being too dangerous. However, in 1999 it was just Michael and me.

Here is a flavour of the trip, mostly taken from the diary I kept that year but I've added some notes of explanation or interest.

Weather Station Daneborg

On 25th July we collected our 3003 rifle and ammunition from the pilot's office in Akureyri and flew to Daneborg via Mestersvig. We stayed at the old weather station which is just outside the Sirius base down by the shore. It was very convenient for assembling and loading our boats and equipment stored there by Sirius.

Monday 26 July

Sunny still. Started to assemble boats. All went very well at first – Juca up (4 metres fully inflatable boat but with a flat floor), *Maya up* (slightly smaller but now only used for carrying fuel and gear as it had been bitten by a polar bear at Kirschdalen some years earlier! It had been repaired by a boatyard on the south coast but we no longer trusted people in it).

First engine (serviced by Michael and Iain (Roy) *last year at Daneborg) fired first time. Second engine, repaired and serviced in Iceland caused problems. Went for a trial run one mile down coast but when got back couldn't restart the engine Dripping from carburettor. Unable to resolve. Got the 4 hp engine working.* (This was pretty useless and fortunately we never had to use it). *We carried on, decanting fuel from a 200 litre drum which Karsten (Sirius) had brought down, and sorting out our kit.*

(At this stage we only had an EPIRB – one of the old type that only gave your position if you set it off. You couldn't speak to potential rescuers. We didn't have any radio, and satellite phones weren't an option. So totally out of communication)! *Had our papers inspected.(* For trips in the North East Greenland National Park you had to get permission from the Danes. Also rifle and radio permits).

Tuesday 27 July

My birthday. Postman arrived! Packed up the two boats (food barrels and petrol cans in the Maya which was towed) and got off about 1.00pm. Sunny and calm. Got to Sandoen islet where the walruses haul out. Not allowed to land but Erik and Mario (who were observing and tagging walrus) had invited us, so we did. Fantastic. Masses of terns – lots of eggs around so had to walk carefully, and about 7 Sabine's Gulls (2 breeding near their tents). I had made a celebratory lunch of gravlax and lettuce sandwiches which we all had with coffee and little cakes (produced by Mario). Then off to see the walruses – 3 in one place snoozing happily and 2 further round the beach. Enormous creatures with big tusks and very smelly. Mario and Erik plan to be there till the last plane – about 11 September.

Kap Breusing

Wind getting up. Left just after 3.00 - lot of white water and nearly decided to make for shore and pitch camp but decided to try the Cape. Not too bad and fairly calm round Kap Breusing but lots of pack ice. Continued to next Cape – Arnakke – nice place – Eskimo houses, green grass strip up to snowfield, water, flowers. Decided to stay the night as not sure how far we would get in the ice and we knew that Kap Mary wasn't that hospitable for a tent and neither was the coast further along round Dhal Skeer. A wise decision! Saw two walruses on the ice coming past but regretfully didn't photograph as we were too concerned about the ice floes.*

Elvsborg

*Because of the ice we had to get the boats and engines ashore every day – this involved heavy lifting as at this stage we hadn't discovered inflatable rollers!

Wednesday 28 July

Flowers at Kap Arnakke

Calm and sunny, but still a lot of ice. Fantastic alpine bed stretching up the hill. Never seen so many flowers and species together. Spent the morning photographing flowers – arnica, gentian, saxifrage, polemonium, poppies, mountain avens, rose root, fireweed, potentilla, and a white flower.

Loaded up the boats. Beach had a nasty undercurrent probably caused by the ice. Set off through the ice again. Beautiful. Left about 3.00 pm. Leads increasingly forced us out and then ones that didn't go through. Had to keep backtracking. Tried to find a shore lead. Got through, open water for a while then very narrow leads. Reversed out of that and headed to shore. Open leads by shore and could land by old hut. Lovely beach, hut reasonably intact and warmed by the sun. Ate our second sandwich and then off again, leads through the ice and then open water just past the Deadman's bay trappers hut. Water got a bit rougher with the wind – some white water. Passed Big Finch Island then arrived at Little Finch. Eleven miles from Deadman's Bay to Little Finch. Arrived after 21.00 pm. Little Finch still in the sun and still very beautiful and idyllic – small sandy bay with a flat raised green bank, bisected by a small stream. Eskimo winter houses one side of the stream. Rocky cliffs with grassy tracks through them on both sides. This time we put our tent up nearer the rocks and had an American dried meal. Bed about midnight. Little Finch remains my most favourite place in North East Greenland.

Hut at Elvsborg

In fact I specified in my will that my ashes should be scattered here but I feel now that it has become unrealistic!

Thursday 29 July

Little Finch Island

Morning awoke to a strong Fohn wind down the fjord. Riviera day. Not a cloud in the sky. Leisurely breakfast and start pottering around. Seals in the bay. Also 3 male eider and 8 female eiders. Michael sorted out the recording equipment and then took the Maya out to the rocks. Lowered the hydrophone and fastened it to a cable on an anchor. Red float. Back to shore to check, then out again to adjust and put further out. Later third time to check cable not touching the seabed. Picked up a lot of sound which subsequently we think was narwhal. Also, at one stage lots of clicks which probably meant narwhal fishing. M thought he saw one blowing out towards Eskimoness. No sightings otherwise. Cirrus cloud evening – front around somewhere. Terns on the island in the bay. Mosquitoes a bit of a menace whenever the wind drops. Had calmed down by mid-morning.*

*We were doing sound recording of narwhal which we had seen before in this area. Very difficult as they are very shy so couldn't use a boat. It was mostly a case of sitting and waiting patiently.

Friday 30 July

Little Finch Island

Sunny, calm. Some cloud still around. Started systematic recording and checking DAT recorder/hydrophone/click detector. Click Detector only picks up ultrasonic clicks, set for narwhal. Checked every half hour. Sometimes nothing, sometimes noise and clicks. Must be far away. Up to the top of hill to look at Big Finch etc. Still no sightings. Fog horn noise on the way down (from narwhal). Also two ptarmigans. M worried about spurious cable noise. Took Maya out to rocky point and tested cables etc. Decided noise mostly due to cable on seabed or/and as it rubs against the rock coming ashore. M decided best way was to sit with cable between his knees on the rock. Still no narwhal though. Very warm evening. Awoke at 1.00 am – Fohn wind again which for a while was coming into the bay. High tide. Waves crashing about two feet from the tent. Wind veered round a bit but still going strong at 5.00 am.

Saturday 31 July

Blue sky to south, cloud to north. Wind died down again. Sunny till 11.00 then cloud. Occasional strong land wind. Made a tarpaulin cover for engines/rucksacks as looks like rain on Clavering Island. Still no narwhal. Ice moving along Clavering coast.

Sunday 1 August

Calm. Set off in the boats along Little Finch (after relocating the hydrophone). Found the passage through and would have gone through to other side but strong wind. Instead went to Stilles Island. Managed to find a landing spot on west side – not a landable coast at all. Disturbed barnacle geese. Walked the length of the island – bit like Red Island in Scoresby Sund in shape. Easy walking. Lot of flowers – saxifrage (pink and white), lousewort, heather bells, and masses of mountain avens. Intermittent sun. Back to Little Finch and up the west coast again. Adjusted hydrophone again!*

*For safety even when we were going off for the day we towed the second boat with a second engine. This was always a bit of a pain because it made us less manoeuvrable but an added advantage of towing a second boat was that it acted like an anchor and kept our very lightweight boats steadier.

Monday 2 August

Boats at Little Finch Island

Set off other side of Little Finch to find the harbour marked on the map. Lot of cloud and sea fog around. Stopped for lunch one beach – thought it was the harbour but lots of rocks and hit several. Cold and forbidding place. However, went on and next inlet was the real harbour. This was nice. Little rock in middle with a duck on it, cairn, good beach. Round the cairn were very old wine bottles and rusty tins- probably from when the Arctic Pilot was surveyed. Ground fairly wet. Walked up valley to lake. Two red throated divers. Very cold wind. Returned to base. Geese on shore legged it up the hill. Sun came out and turned into a lovely evening. Adjusted the hydrophone again. Still no narwhal.

Tuesday 3 August

Sunny morning. Decided to go to Big Finch so loaded up the Juca, attached the Maya and set off. Quite a lot of ice which calmed the water down. Wind still blowing through the Sound between the islands. Bit of white water Big Finch headland, then round and into the harbour area. Landed near foot of Eskimo settlement. Fine green plateau area – moss and grass. Some recent musk-ox droppings and wool but no sightings. Winter houses still in good condition. Good views.

We then went on to Kalvey Island – white water crossing. Landed north beach. Bit soggy, snow patch, gravel/shingle plateau area. Stayed in our dry suits as not terribly inviting. Then back to Little Finch. Wind stronger, some white water but going the right way so no problem. Crossing took about 30 minutes. Fog in Deadman's Bay, Eskimoness, parts Little Finch. Temperature read 2 degrees C. Back to narwhal listening. Faint clicks.

Wednesday 4 August

Lot of ice blown down the fjord. Today was meant to be a non boat day but just when we were starting to cook dinner a piece of ice snagged the anchor and we had to go out and rescue it and the hydrophone Decided to take both up permanently now on this location. Hydrophone

batteries exhausted fairly quickly so saving them for Eskimoness and possible Copeland Fjord sites.

Very cold today. Temperature was 2 degrees and with wind felt icy so piled on more clothes. Around lunchtime M went up the slabs to viewing point and coincidentally arrived just as 5 narwhals rounded the point. Had a very clear view and took photos though may not turn out well. Very close, clear sighting totally confirmed they were narwhals. Renewed vigour to try and get them on video. Route this year seems to be between Big Finch and Little Finch and then over to Eskimoness area. Went up in evening and afternoon to watch but no luck.

Thursday 5 August

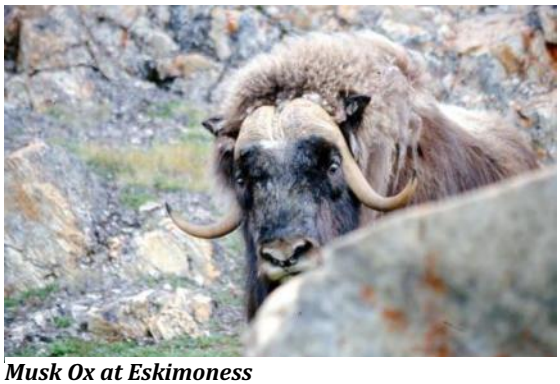
Lovely sunny morning. Got up early for us and by 9.30 were up on the point armed with video, camera, Telinga microphone, DAT recorder. Seal (probably bearded seal) drifted by on ice – looked like a great big pale fat slug! Heard foghorn noise about 4 times and M thought he picked them up in the Eskimoness region. Later noise came more from Godthab gulf towards Copeland fjord. Gentian on top. Boulder slabs with green runnels/valleys. Tortuous but easy route but unfortunately, I get lost on my own! Very calm sea. Beautiful evening. About 7 degrees in the shade.

Friday 6 August

Sea rougher today but almost cloudless. Riviera day, warmer than has been. Pottered in morning. M went up to top – 6 ptarmigan (made a lot of noise in the night so probably by the tent). Too rough to hear or sight narwhal.

After lunch went up the valley. Much drier this year than last so no problem. Photographed ranunculus glacialis (arctic buttercup). Looked down on two lakes.

Saturday 7 August



Musk Ox at Eskimoness

Overcast but very calm. Ideal for crossing to Eskimoness. On the beach with everything by 11.00. About 40 minutes to load boats. Crossing took 45 minutes. Landed further round than the old hut used by Sirius at Vesthaven. Lots of sites for tents but no water. Unloaded boats, put up tent, settled down for lunch. I said "I hear a musk-ox" – and it appeared just behind us by the rock. It stayed for a bit, then snorted and galloped back up the green runnel. Lot of white on mane so probably an old one. Must be used to people round Eskimoness.* .*

After lunch we went for a water run in the Juca taking the red/blue barrel, yellow bucket, mug and sigg bottle. Next bay round was a good stream. 4 bucketful's, then back to camp. Put boats on narrow spit between two little coves with large rock in front. Low tide. Later the spit gets covered and boats partially in the water, but very sheltered and probably safe from ice. Next, we did the hydrophone. Rope over a sea chasm with hydrophone suspended from the middle. Seemed to work well but next day realised picking up too much wave and pebble noise.

*Eskimoness is where the last Eskimos were seen in East Greenland on Clavering Island a very famous place in Greenland history.

Sunday 8 August

Strong wind from NW. Pink feet geese plus one barnacle.
Took lunch to near hydrophonic area to watch for narwhal. Sea still too rough though. Decided clicks were pebbles so took up hydrophone. Relocated in bay using anchor, boat to get in position. Wind changed direction slightly – rough, and a lot of cloud now from the north. M climbed hill – hare and gyrfalcon.

Monday 9 August

Campsite at Eskimoness

Strong cold wind again. Occasional small breaks of sun in afternoon. After coffee decided to try to walk to Westhaven and through to Eskimoness. Saw an ermine near the top carrying a dead lemming. A musk ox asleep on a ledge. Saw the Sirius hut at Eskimoness – no one there, all shuttered. During lunch saw black lines in bay – narwhal fishing off Eskimoness point. About 2.00 pm saw lots of pods – possibly 10, at least 50 narwhal. M wanted to get down to get nearer but by the time we'd got down – they had gone. Sound of boat - the BBC! Doug Allen, Johann (Swedish driver) & Jordan had come from Daneborg looking for any beach the walrus might heave out on. Up here to film walrus feeding. Doing work for a six-part series called The Blue Planet. They were very surprised to see us. Gave all three a tot of whisky as they were very cold.

Tuesday 10 August

Strong cold wind. Lot of white water. Decided to put up the Vango (small lightweight spare tent) on a grassy ledge – just about fitted. Sheltered us a bit from the wind but still cold. Had lunch there and stuck it out till 2.45, but no narwhal. Short walk, checked the hydrophone. We had planned to set off late afternoon for Copeland fjord area but although calmed down a bit, still cold, and looks like rain North Clavering. Will have to wait till tomorrow. Don't want to leave it too late though – aiming to go through Revet on 13th when high Spring tides. The tides here have been getting higher and lower each day.

Hut at Revet

Revet had a double tide and for some of the time you could walk across to Clavering Island. It was only really at a high spring tide that you could actually take a shallow draft boat through the narrow passage – hence we calculated that we must get through on the 13th but we misjudged the time! The double irony of it was that we knew the problem but still went wrong, while the French (GREA) who hadn't known until we told them the best time, went straight through a few hours later in their Bombards!

Wednesday 11 August

Grey day. Light rain on and off.

Thursday 12 August

Still a cold wind but becoming sunny. Views of snow-clad mountains. Despite the white water decided to set off. Took down Vango, then retrieved hydrophone. Took down tent, packed the boats (water in our little bay area deceptively very calm) and off. Kept fairly close to coast because of white water and big swell. Sun on my back. Tremendous views. Long sandy beaches, shallow water and spits rising to sandy or occasionally grassy slopes. Boats zipping along. We were going to have a comfort stop at the ruined hut but surf on beach and would not have been able to get boats off again. Now very barren, pink rocks, sand near point, then grassy valleys. Stopped in the shelter of one of the spits. Beach soggy.

Decided to carry on to Revet as weather still unsettled. Still fog and rain Loch Fyne area. Passed the grassy mounds where we had planned to stop and a group of 9 musk oxen. Still a swell but fortunately running our way and wind behind us. Surfing the waves. Remained dry except once when had to go out across the current to get around a spit.

Approaching Revet near 5.00 pm. Tried to get near hut and very close to shore when stuck. M tried to push boats but very soft mud. Nearly lost his boots. A lot of paddling madly, punting and going nowhere very fast. Eventually managed to make some headway against the breakers rolling in and M got the engine shallow water trawling. Went back along the coast trying to find somewhere to land. Very rocky. Eventually managed to get in near small delta. Boats swamping slightly. A mistake. Should have thought this through. Got ourselves in a shipwreck situation. Unloaded boats and originally were going to walk to Revet, have a meal and come back and try again when nearer high tide. However, decided better move everything to grassy bank further down the beach. Long haul. Not sure how we managed to get everything along the beach. Exhausting. Then made a tarp and set off for Revet. M with Red kit bag (minus tent) + rifle, and me with the Vango. Must have been over a mile on fairly hummocky ground. Took ages.

Eventually we staggered to the hut. Unoccupied thank goodness. Took off shutters and moved in. However, shortly after having gone to bed we heard boat engines. It was the GREA team. They came straight through on the high tide and landed on the beach just below the hut!

A bit later we heard wolf howls. M got out of bed. Since he didn't return I put on an anorak over my nightdress and tottered out. The French had a marine telescope 40 times zoom and through it I saw 3 wolves on Clavering Island, playing on the sands. We went back to put on

more clothes and when emerged again saw the French team had taken one of the Bombards across towards Clavering and then walked to try and approach the wolves from the further side. They disappeared off and we went back to bed after a cup of tea. Now nearly 4.00 am!

Friday 13 August

Another murky, misty morning with slight drizzle. About 11.30 we walked to where we had left the boats. Tide much higher now than when we'd left them so only a slight slope to get them down to the beach and water. Loaded the boats – didn't bother to tarp the Juca, only the Maya. Set off. Got very shallow for a while – put shallow trawling on. Should have paddled but difficult when towing another laden boat. Went past Revet and took everything to a beach further along (we'd used it in '92 where we had an encounter with a polar bear). Should be accessible at normal tides. Left the Maya and took the Juca back to under the hut, landed the things we needed – food barrel, rucksack, equipment, etc and then took Juca back to join the Maya. Unloaded Maya, tarped the engines etc and walked (shorter and easier gravel) back to hut Around 1700 decided to light the stove – wood soaked in paraffin and coal. By 1900 up to 15 degrees Celsius!

View from Revet to Clavering Island

After dinner invited GREA who were camping nearby for tea and coffee. Sat round in hut drinking tea and eating their chocs till Olivier saw a wolf just outside the window of the hut. All piled out to follow. Three wolves – in fact all adult but one has scar on side and limps behind the others. They looked back regularly to check on her (him). Went up the hill. Observed through telescope. We eventually got to bed but the others stayed up watching.

Saturday 14 August

Clavering Island

Another cloudy day. Slight drizzle at first. Went for a walk up the valley (via the boat/tarps to check OK). Easy walking – gravel, grassy bank near river, then moraine. Saw lots of musk ox – family group of 10 including 2 young, 8, then another 8 or 9 round the lakes behind the moraine. No sign of wolves. Flocks of over 100 pink feet went down to sea. Later saw small flock pink feet on one of the lakes, with musk ox family around. Saw GREA walking the sands checking for wolf tracks. Found about 24 sets of tracks going both ways so the wolves must cross regularly. Watched for wolves through hut window but no sign. Bed c 12.30. Evidently the French party saw the wolves chasing musk ox by the lakes. Took video. Brigitte said wolf within 50 metres of her.*

*Back in 1988 at Hold with Hope I was in touching distance of a wolf.

Sunday 15 August

Nearly asphyxiated by M lighting paraffin stove while I was still in my bunk! Had to open doors quickly to let air in. Had been a very cold night – half an inch of ice in the water bucket so M estimated about minus five degrees C. Had breakfast outside sitting on turf wall behind hut. Clear sky. Warm out of the wind. Then off to boats. Wolves had scattered our rubbish on hillside! Picked it up and put in black plastic sack to burn at hut. Spread out tarpaulins to dry, drained boats. Splendid night – pink clouds, pink reflections but no wolves. Got back about midnight. French also unsuccessful.

Monday 16 August

Riviera day. We crossed to Clavering in the Juca. Very calm. Then walked up green valley, then struck across the moraine towards the gorge. Disturbed lots of musk ox. Bit of head butting but too late for the video. Got back to the Juca at 7.00 pm. Strong wind, white water. Stupidly we hadn't got waterproof trousers. Very wet crossing. Bank of fog rolled in.

Tuesday 17 August

Decided to move tomorrow so needed to move some of our stuff down to dump today. Got out Maya. M said too shallow to use engine to hut so paddled. But, strong wind against us and took to towing with me pushing boat out. Very hard work – arm muscles aching. Loaded Maya food barrel, orange box and green rucksack. Going back easier, wind took us with minimum paddling. Sat in hut door for a while to recover with afternoon tea. Then burnt rubbish in metal can. Fog coming back.

Wednesday 18 August

Fairly calm to start with. Occasional hazy sun. Packed up, cleaned hut and M ferried kitbag and rucksack to boats. Got going about 1.15 Still calm water but cold.

Stopped by a hut for lunch. Up heathery steep slope to a hut perched on top. Open window but small stove appeared intact and even laid with wood ready to light.

Left again about 2.30 and into Tyroler Fjord – narrow, steep scree slopes. Musk ox picking way across the scree. Absolutely nowhere to land in an emergency as scree down to fjord. After about 4 miles, small sandy beach where we could land on right side of fjord. Above it was a hanging valley running parallel to the fjord and up the slopes went 2 musk oxen! A few miles further on was a waterfall where could land but that was all.

Very strange feeling fjord, - very dangerous in bad weather. Strong wind now on our faces. Rounded the corner. Fair amount of ice, then into Leirevegen bay. Hut on point but lots of rocks. Looked for beach but only one slight possibility. M wanted to stay so explored left side – deep bay – sand with grass verge but very shallow glacial bay and now frightened of getting grounded, so headed across Young Sound to Zackenberg.

Musk Oxen on Clavering Island

Strong waves at first, but then ice calmed it down. About 5 miles to Zackenberg. Very cold by now. Weaving through pack ice. Managed to get through at last to the hut – landed just before it as last year we'd had problems trying to land directly in front of it. Unloaded boats, did tarp, got us warm but now about 7.30 pm. Lit the stove (smoked badly at first). fabulous view from bunk by the table. Pack ice very thick now.

Tyroler Fjord

Maya being towed down Tyroler Fjord

Thursday 19 August

Zackenberg Hut

Explored the old hunters hut. Remains of Joint Services Expedition from the fifties – old fuel drums, bits of metal, asbestos coating – a right old mess – will raise it when we get back to England with the Arctic Club members who were on that expedition and possibly the MOD to try and get it cleaned up), small wooden dog kennel (!), an Eskimo winter house. Saw the Sirius boat heading for Revet.

Ring of ice. Can't get out!

The ring of ice continued to keep us at Zackenberg. When we eventually got back to Daneborg the weather station was full of people – the BBC, etc. Doug Allen spent ages on the roof of the weather station looking out for walrus but no luck until their last day. They dived down to photograph it eating mussels but the walrus had a cross on its back (Erik and Mario had marked their walruses with a yellow cross!) so couldn't use it for the documentary.

Ice at Zackenberg

Ring of Ice

Torben (Sirius patrol) came down for a chat one evening – very impressed with us as he and his partner had just had a terrible journey in Tyroler Fjord restocking the hut at Revet, and an epic journey back through the ice to reach Zackenberg and saw our entries in both hut books. They were still talking about our epic journey the following year!

In retrospect perhaps it was a bit dangerous to circumnavigate Clavering, but we survived.

Rivers in the Arctic

Eve Gilmore

I like rivers and have studied their flow and characteristics over many years. I understand meanders, the varying depths of the water during different seasons, and diurnal variations in the Arctic. I enjoy paddling through burns, crossing small rivers and wading upstream in larger rivers.

I also have stories of difficulties in Arctic rivers on two memorable occasions.

The first occasion was in Eastern Greenland. Four of us, the John and Fiona Hutchinson, Chris and I walked up a remote valley off Qingertivaq fiord. The valley was half filled by the fiord, icy cold water joining the sea. Our way was along its bank, which was gently sloping ground crossed by shallow glacial streams. I registered that the streams had come from an ice field, but didn't think too much about that as we set out on our day's adventure. We splashed through them in the morning only just registering that the rocks were slippery and wet.

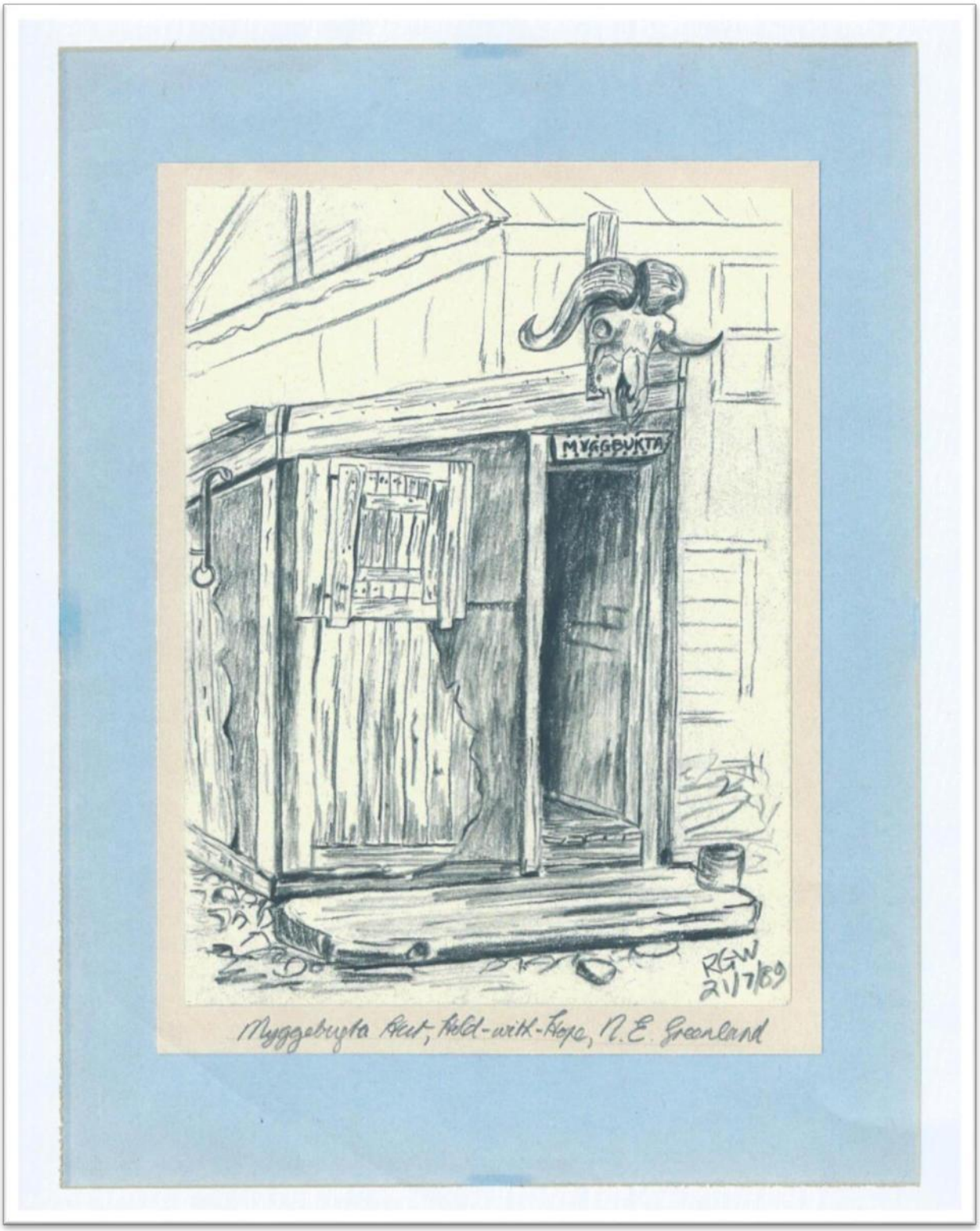
We spent the day attempting to reach the top of a very loose and unstable nearby peak. We took all day on the peak, failed to reach the top and took ages to descend. It was late afternoon when we strolled back along the valley to our camp. By now the streams had risen and the water was just below our knees. I was tired and although I thought the speed of water had increased I hadn't really anticipated its force. We were almost back to camp and I wasn't really concentrating. I slipped and found myself on my back. My rucksack had wedged below me and I was floating downstream, heading rapidly toward the open deep waters of the icy fiord. My efforts to roll over and crawl or swim out didn't work. Fiona, who was nearby sprang into action and ran downstream fast enough to catch me and pull me to safety. She even managed to rescue my poles once she knew I was safe. I was very grateful to be safe, although very cold.

The second occasion was when I was with Chris in Northern Alaska. The two of us had been dropped hundreds of miles from habitation in the Arctic Wildlife Refuge for three weeks of wilderness hiking.

We had a "rest day" and had decided the walk up a fairly flat river valley from camp. It was an easy walk along the flat valley floor. We crossed an number of small streams which braided into the main river. We spent time watching musk ox grazing and even saw a wolverine. However our way back in the afternoon was barred by a raging torrent. One of the small streams was in spate. It was more than spate. It was a raging torrent. It was between us and the shelter of our tent.

We could see our tent but there was no way to it. There must have been a catastrophic ice failure or landslip in the mountains high above us. The torrent was muddy and impressive but there was no way across.

We investigated our options. The main river was impassable. We tried to go higher up the valley of the torrent. This also proved impossible as the rock of the valley sides just got looser and looser. We decided to sit it out, hoping the waters would go down enough eventually to be able to cross. We sat out through the night. There was little darkness and the midnight sun made a beautiful red light on the horizon which I will always recall with pleasure. I also remember that it was very cold. We had short spells of dozing interspersed with jumping around for warmth. I remember that watching out for bears became less important than trying to stay warm.



ERSKINE

HOLD-WITH-HOPE NORTH-EAST GREENLAND EXPEDITION

DIARY AND NOTES 12 – 30 JULY 1989

RAY WOOLMORE

LIST OF EXPEDITION MEMBERS

J. Douglas Peacock	Edinburgh
Hugh Montgomery	Edinburgh
Ray Woolmore	Cheltenham
Hugh Lang	Newton Stewart
Miss Liz Patterson	Stirlingshire
Wolf Franzen	Germany
Helmut Voss	Germany
Leader:	
Robert Burton	Cambridgeshire

AUTHOR'S PREFACE

by Ray Woolmore

The following diary, notes and annexes are a true transcription of the diary I wrote on the expedition. I have not made any changes to the text, despite a number of grammatical errors and spelling inconsistencies. I assumed, at the time of writing, that the information relating to the backgrounds of the eight expedition members in the entry for 12 July 1989 was correct. Despite, sadly, the two Hughs (and Angus Erskine, the expedition's organiser) now (2013) no longer being with us, I have had no reason, over the past 24 years, to question the accuracy of what I had written in this diary.

As well as the miscellaneous sketches, and the original archaeological survey forms and sketches I have included with the diary, I have also added copies of three sketches of huts (now held in the archives of the Scott Polar Research Institute) and some photographs (taken during the expedition).

Two main factors influenced my decision to print out the 1989 diary. The first was Liz Patterson's excellent slide presentation of the expedition at the Scottish Arctic Club Dinner, November 2012, at Pitlochry, which convinced me that Arctic enthusiasts would still be interested to see the diary. Secondly, Douglas Peacock, whom I first met on the 1989 expedition, had recently been instrumental in persuading Richard Hamilton's daughter, Elspeth, to transcribe her father's diary of his experiences on the 1935-6 Oxford University Expedition to North East Land on the Svalbard archipelago into a fine paperback volume published by Salt in 2012. Douglas had served, as the senior geologist in the British North-East Greenland Expedition 1952-54, under Richard Hamilton, then the Chief Scientist and Second-in-Command of that Expedition. In no way am I comparing my short diary of a very modest expedition with Richard Hamilton's authoritative and historically significant record of a major pre-war Oxford University expedition, but reading through his diary convinced me that, given the right audience, verbatim diaries could be of great interest.

Finally, I must thank my friend, Robert Burton, for his leadership and management of this expedition, and also pay tribute to Commander Angus Erskine (also a member of the British North-East Greenland Expedition 1952-54) for enabling so many of us Arctic enthusiasts to partake in the expeditions he so well organised on his retirement from the Royal Navy.

September 2013

DIARY AND NOTES

11 July, Tuesday

After travelling by coach from Cheltenham, I made a rendezvous with Robert Burton, the wildlife writer, at 6.30pm at Terminal 1 at Heathrow. I had already met Robert in 1984, when he had led the first Erskine expedition to Sondre – Stromfjord, West Greenland. We had no trouble in checking-in the heavy army radio and the rest of our kit; and left Heathrow on Icelandair flight FI453, on time at 8.25pm. Despite the presence of a large school exploration party on their first trip to Iceland the trip was uneventful; and after buying whisky at Keflavik duty-free for gratuities to radio operators and depot-layers in Greenland, we booked in at the Townstar Guesthouse at about 12.30am Icelandic time.

12 July, Wednesday

Breakfast was at 6.30am, where we met three other members of the expedition who had travelled on the Glasgow flight, and arrived an hour or so earlier than us. Dr. Douglas Peacock, now a geological consultant, had worked for the NCC in Edinburgh, and significantly the senior geologist on the British North Greenland Expedition, 1952-3, when he had first met Angus Erskine, who along with Mike Banks, Hal Lister (whom I met in Mestersvig in 1982) and Malcolm Slessor interalia, had also been on this important expedition, probably the last "traditional" British polar expedition. Duggie came from Northumberland, though he now lived in Edinburgh; Dr. Hugh Lang, a spritely 69, a retired GP from Newton Stewart in Galloway, who had been with me on the Erskine expedition to North-West Greenland in 1986. Hugh, importantly, is a Fellow of the Royal Botanical Society, and provided much authoritative advice on the flora, collecting plants for Dr. Halliday's herbarium. Naturally he was also the Expedition's medical officer; finally Liz Paterson, a seasoned Scottish mountaineer and school teacher in French from Stirling. A taxi took us to Reykjavik airport, where we boarded the 7.30am plane to Akureyri, on the north coast of Iceland. We arrived at 8.30am, where we met the remaining three members of the expedition – Dr. Hugh Montgomery, a senior lecturer in Physics at Edinburgh University, who had worked at Harwell. He was also a mountaineer, had visited Greenland several times, and was extremely well-read – Helmut Voss, from Frankfurt, the owner and manager of a specialist adventure travel agency, who had travelled widely in the Arctic, especially in Northern Canada – Wolf Franzen, from Neu Isenberg, a banker and specialist wildlife photographer. Both Helmut and Wolf spoke good English, whereas none of the other members of the expedition spoke any German.

At 9.45am we left Akureyri, in rain, in one of Flugfelag Nordurlands Twin Otters en route to Greenland. Flugfelag Nordurlands LF is owned by Sigurdur Adalsteinsson, an old friend of Angus Erskine, who has used his aircraft for many years. Once over the Denmark Straits, the rain and cloud disappeared, and we were soon looking down at the ice-pack, which got progressively more continuous as we neared Greenland. Flying over the ice-covered Scoresbysund we landed at the new Constable Point airport at Hurry Inlet for fuel. There was a vast encampment of permanent tents, presumably for the geologists, who were busy searching for oil, but there were few people about. A lazy tame husky "guarded" the entrance to one of the airport buildings. Robert filled up the plastic and metal carriers with paraffin. The mountains and small ice-caps of Liverpool Land look very impressive to the east of the airport.

We took off again about 1.00pm and flew over the ice-free Jameson Land, with its red barren mountains; then crossed King Oscar's Fjord well to the east of Mestersvig. Passing over the eastern ends of Traill and Geographical Society Islands, we then flew over Foster's Bugt before descending first to inspect the makeshift runway, and then to land, at Myggebugten, a large hut, once a radio station on the shores of Mackenzie Bay, at 2.00pm. Six days supply of food were depoted at the hut, in readiness for our major trip away from our proposed base-camp further inland.

Mosquitos were biting before we took off again at 2.30pm for a brief ten-minute trip to another makeshift airstrip at, what was to become, our base-camp at the entry to Stordal, midway between the heads of Loch Fyne and Moskusoksefjord. (The same journey by foot, a few days later took ten hours rather than ten minutes!) The Stordal airstrip was a better less bumpy strip than the Myggebugten strip; and with 20 or so blue fuel barrels, and an orange emergency shelter looked quite sophisticated. Just to the north of the strip the 100' marine deposit plateau dropped away suddenly in bluffs to the flat river plain of Stordal, to an idyllic camp-site by a small tributary river with blue pools, and lush musk-ox pasture. The site was overlooked in all directions, apart from the south, by high mountains, and looked directly up into the mountain fastness and glaciers of the higher reaches of the Stordal Valley.

After struggling with the mysteries of Angus's new Hornet tents, and a welcome brew, we all went off on individual explorations of the immediate vicinity of the camp. *Dryas integrifolia* and *cassiope tetragona* were in profusion on the bluffs, and moss campion and purple saxifrage were common. *Salix glauca* and *salix articum*, and dwarf birch were also in abundance; and other plants noticed on initial inspection were cotton grass*, pedicularis*

Above – Hold-with-Hope Expedition Base Camp with leader

Above – The magnificent scenery at the Gates of Stordal

hirstuta, arctic willow-herb, also *Rhododendron lapponicum*, *saxifraga cernua*, *saxifraga aizodes*, *lesquerella arctica*, *oxyria dignya*, *melandrium affine*, and *vaccinium uliginosum*. Five of the elegant long-tailed skua immediately inspected us; one pair had nested close to the orange hut, and we were, over the next weeks to watch the eggs hatch. Ringed plovers and their song seemed everywhere, while arctic terns were also in evidence. Four turnstones with very white breasts also appeared, and a lone long-tailed duck flew over. I came across the remains of an indeterminate goose, probably taken apart by a skua, while I also saw an arctic fritillary, a smaller grey moth, a bumble bee and a daddy long-legs. Mosquitoes, of course, were very much in evidence, though when the wind blew they tended to disappear. Musk oxen were evident across the river and on the ridge to the east. After a long day, and a welcome evening meal we retired fairly early.

13 July, Thursday

By 7am the sun so warmed the tents that it was more comfortable to get up, and breakfast was taken by 8am, with everyone eager to make longer day trips. A group of geese (indeterminate) flew over early; and we soon discovered lemmings in the bank near to the camp site. Long-tailed skuas continued their investigations of our site. In the meantime the wind had changed and was now coming from Mackenzie Bay and the Badlands; when we had arrived it had been blowing from Stordal, so unfortunately the entrances to the tents were facing into the wind. While one group went westward towards the Moskusoksefjord delta, I went with Helmut and Wolf to the low ridge at the head of Stordal, first crossing the delta-fan of the tributary river that came down from the Nordhoeksbjerg. The remains of musk oxen were common, and several older horns were embedded in the ground. One head had a third horn growing out of an eye-socket. On the low ridge, the two *drabas*, *draba alpine* (yellow) and *draba nivalis* (white) were present, as well as *lesquerella arctica* (arctic bladder-pod), a plant which previously I had seen only in North-West Greenland. On the lower part of the ridge we were mobbed in a friendly way by long-tailed skuas, whose nesting sites were in the vicinity. They tend to hover above the head rather than the more vicious diving of the arctic skua; in fact, while looking for prey, we noticed that unlike other skuas they hovered like kestrels; presumably their long tails enable them to do this. Several photos were taken of hovering long-tailed skuas. In walking up the ridge we were conscious of a curlew like whistling song; and before a bird with a strong buff coloured breast appeared, the knot. More appeared, and soon four chicks. Wolf left Helmut and myself to climb to the summit of the low ridge, but before long we were aware of being surveyed by a large white bird, on a rock near the top of the ridge. It flew off, rather like a large white butterfly with slow wing-beats, clearly a snowy owl. Reaching its rock eyrie, the form of white faeces and lichen showed that the rock had been used as a perch for a very long time. On the northern side of the ridge was a hidden green valley, clearly premium musk oxen pasture, with 5 adults and one calf ambling slowly along. However, when we looked down

to the main valley, we saw a similar number. Helmut descended from the ridge down to meet Wolf near the Nanok trappers' hut in the main valley, while I continued on to the northern end of the ridge, which gave me superb views into the upper reaches of Stordal. I then turned back up the hidden green valley, past the musk oxen, and many turnstones, also three long-tailed skuas. Among the flora I noticed *pedicularis flammea*, and arctic chickweed in the dry river bed. Turnstones and ringed plovers continued with me as I finally left the ridge before returning to base-camp.

14 July, Friday

An expedition up on to the Nordhoeksbjerg was arranged; and first we went past one of the many lakes formed in the kettle-hole topography where the marine terraces meet the edge of the mountain and the lateral moraine. Two gosling chicks, obviously lost came towards us thinking we were their parents; but we went on up to the nest of the snowy owl on a rounded bluff overlooking the lake. The snowy owl pair seemed to be quite happy for us to take pictures of the chicks, three, including a very poorly runt, and two more active chicks. We then watched one of the owls take one of the goslings, while the other gosling ran up to us at the snowy owl's nest, briefly encountering the snowy owl chicks before running off. The main group then left the snowy owls to continue up the mountain, but Helmut and Wolf stayed near the nest to continue with photography. The top of the ridge at about 500m seemed elusive, as it flattened at the top. All around was the curlew-like call of the knot. Turnstones were also present, and a male and female snow bunting introduced themselves. On a snow patch near the top of the ridge I discovered a small herd of musk oxen cooling themselves, five adults and one calf. I was able to take one photo of them on the snow before the bull saw me, and stampeded the herd away, but conveniently stopping at the top of the ridge for me to take another picture. Eastwards we looked down to Loch Fyne and beyond to Tobias Dal and the eastern coast. We could see the trappers' hut at the entrance to Tobias Dal which we would visit two weeks later. The snowfields and glaciers of the Spath's Plateau to the north of Tobias Dal looked very impressive. As it was nearly 3pm by the time we had finished lunch, only Liz and Hugh decided to climb the 1317m peak which raised itself in loose scree from the summit of the plateau. Hugh Lang followed them up. The rest of us wandered south along the summit plateau; and I recorded a number of "new" flowers – *ranunculus nivalis*, a species of *taraxacum*, *ranunculus pygmaeus*, *saxifrage hyperborea*, *cardamine bellidifolia* (alpine cress). As we went down we saw more musk oxen, 4 adults and 3 calves, and 8 adults and 1 calf. Three more new flowers, *minuartia biflora* and the *campanula uniflora*, Arctic harebell, and *armeria scabra*, with a single almost paper flowered rosette, a more delicately flowered version of the common thrift. Liz and Hugh Montgomery successfully climbed point '1317', and returned at 7.30pm, but had seen nothing of Hugh Lang behind them. By 9.30pm Robert decided to send out a search party, Robert, Duggie and myself, but thankfully, before we were halfway up the lower ridge we

Above – Musk oxen on Nordhoeksbjerg

Above – Pink feet geese on lakes to south of Badlands

met Hugh peacefully descending and botanising. We celebrated his safe return by finishing his Drambuie!

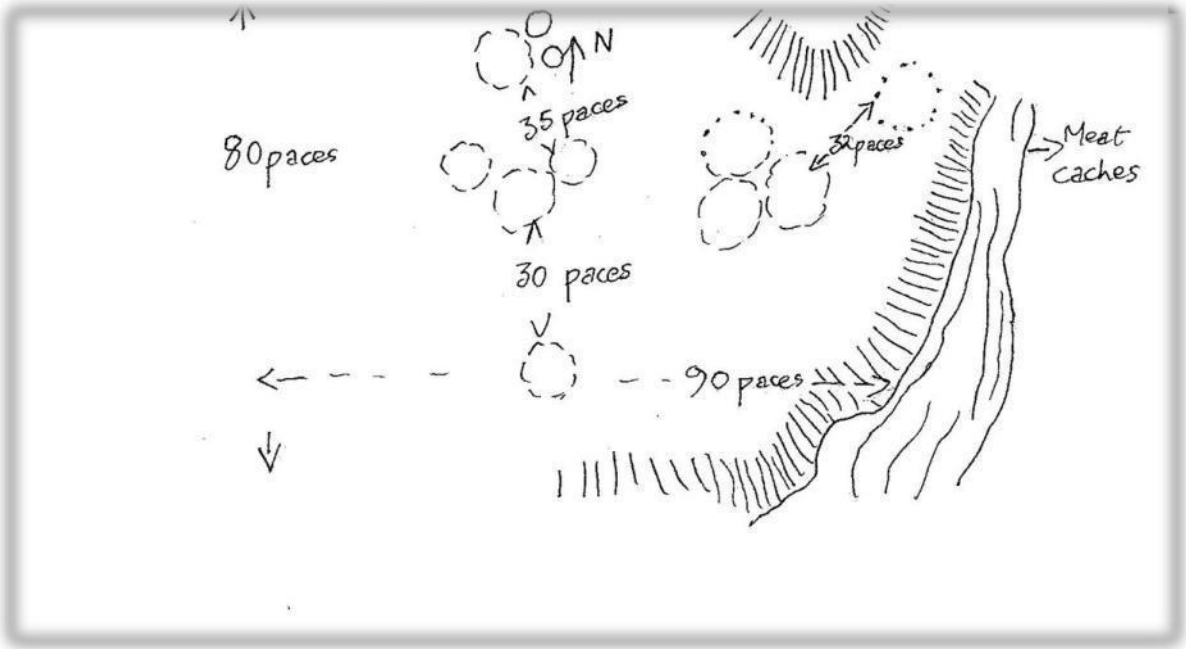
15 July, Saturday

The weather was still warm and sunny, and as Robert was planning for us all to walk to Myggebugten the next day, everyone had a fairly easy day, and fought off mosquitoes. I went geologising with Duggie, looking at exposures of the marine deposits, and at the fluvio-glacial terraces, and laminated silt exposures. The recent geological history was clearly complex, with many factors, marine, glacial, and fluvial, responsible for the present landscape of terraces, bluffs, kettle hole lakes etc. We found a reindeer horn and skull; it did not look too old (see photo) even though reindeer or caribou were thought to be extinct in this part of Greenland by the early 20th Century. While we geologised Robert collected stickleback from the various kettle hole lakes to test theories on the development of back-fins in arctic sticklebacks. On the large lake near the airstrip we saw 6 pinkfeet geese, and 4 barnacle geese with 2 chicks. *Taraxacum* seed was floating about in the wind. Two long-tailed ducks landed on the lake, while one snowy owl gazed down on us from a low ridge above the lake. There were musk ox skulls and remains throughout the area. As we walked through the maze of kettle hole lakes 6 barnacle geese flew above us. We found a dead, but untouched lemming outside its hole; and found a pre-war Nanok company (Norwegian) fox trap. Two pinkfeet geese and 2 barnacle geese were on the far lake. To the east we could see the Sirius hut on the western side of Loch Fyne only a few miles away, while south the sand storms over the Badlands looked menacing. We hoped that they would not blow when we walked across the Badlands, en route to Myggebugten the next day. Leaving the kettle hole lake area we walked up on the side of the ridge, where basalt exposures attracted us. A female ptarmigan appeared under one of the basalt sills; and snow-buntings began to appear; the broken columns of basalt being attractive to them; there were perhaps 60 snow-buntings in one such area, probably non-breeders. We found a white (rare) moss campion. On return to base camp, we passed the large lake overlooked by the snowy owl nest, and there saw 4 barnacle geese. Dunlins and knots escorted us back to base camp, often adopting the broken-wing attitude to lead us away from their eggs or chicks. Robert radioed through to Constable Point to say we should be away from base camp for 6 nights.

16 July, Sunday

After breaking camp we started the long walk across the desert-like Badlands to Myggebugten, some 16 miles away, at 9.30am. Duggie explained that the Badlands were raised marine deposits with masses of shells. These were exposed as the sea-level fell and deflated by the wind; also they were mixed with loess like glacial deposits. En route I saw

scurvy grass, *lesquerella arctica*, and *saxifrage cernua*. Nearer to Myggebugten we discovered a fox's lair with the remains of many small animals and birds outside. We eventually arrived at Myggebugten at about 6.45pm. For the first time, 3 arctic skua with their aggressive diving habits appeared. The sea-ice came right into the shore, and there were 200 long-tailed ducks on the ice nearby together with 2 male king eiders and female eiders. We noticed it was much colder by the coast, compared with inland, and that there were very few mosquitoes. Though we camped on a small grassy patch behind the hut, Robert set up the kitchen in the hut; and we used the main living room for meals and shelter. The hut was quite big, with sleeping quarters, used periodically by the Sirius Patrol, upstairs. It once had electricity from a diesel generator – the dynamos for which were near the beach – and functioned as a radio station. For a time in 1943 the hut had been occupied by the small German force which had been landed on the Greenland coast to set up a meteorological station. It was also the hut at which Marius Jensen, one of the Danish Sledge Patrol had turned the tables on Lieutenant Ritter, the German Commander, his erstwhile captor, and had eventually taken Ritter from here to Scoresby Sound. The hut book shows that a number of small expeditions as well as Sirius Patrol members (the successors to the wartime Sledge Patrol) had visited the hut, as well as the previous 1984 Hold-with-Hope expedition led by Will Higgs1. In 1988 a Wildfowl Trust/RSPB expedition led by Roy Dennis had used the hut as their base camp.



[1] Like the 1989 Expedition described in this diary, the 1984 Expedition had been arranged by Angus Erskine, and was led by Will Higgs.

17 July, Monday

After breakfast we took advantage of the fine clear weather to go and see the Inuit site, just to the north-east of the hut. Ravens had noisily disturbed our sleep. There were eleven structures, mainly stone circles, but including two well-defined sunken dwellings on the site which was located on a cliffed terrace overlooking the river just to the east of the hut. On the eastern side of the river were two Inuit structures, probably meat caches.Common around the hut, especially on stream banks, was the *saxifraga hirculus*. *Draba nivalis* was found around the Inuit dwellings. Arctic skuas rather than long-tailed skuas were numerous around the hut, as were arctic terns. A species of *Taraxacum* was also common. After lunch the coastal fog descended, but we went for a walk along the beach westwards, with pack-ice right close into the beach. The tracks of Polar Wolves and Arctic Foxes were found along the beach.

18 July, Tuesday

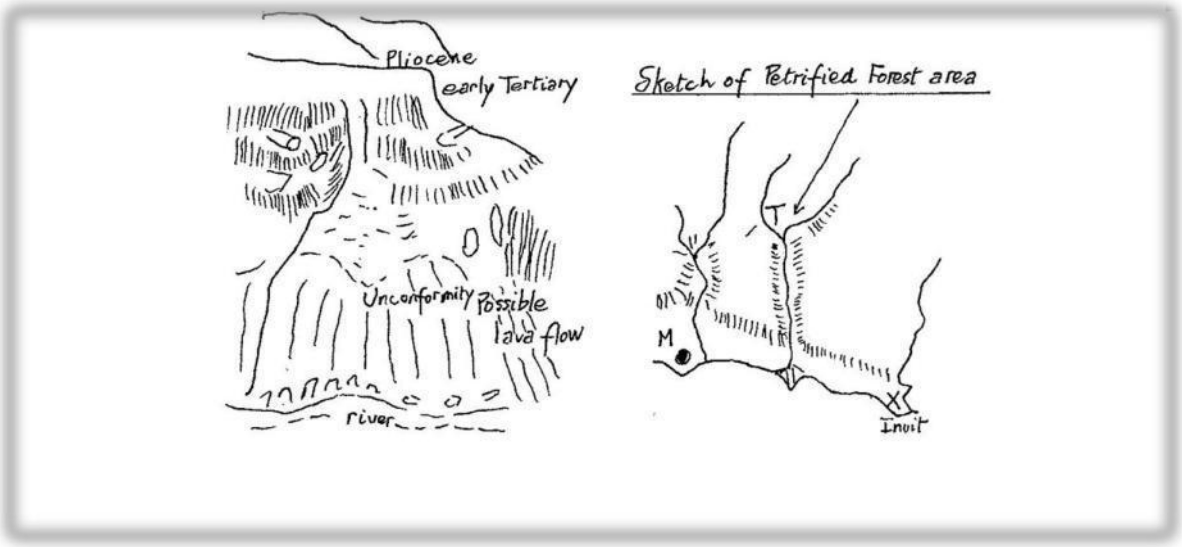
We woke to find that the coastal fog was beginning to clear. 170 king eiders were on a floe close into the shore. Turnstones were always present on the shore. We decided to walk along 5 miles to the Inuit site recorded east of the hut, but not mapped in detail. Robert had been asked to map this site in detail, and had the necessary forms and graph paper. He had asked me to help with the survey. En route to the site, walking along the beach, we discovered spider plant *saxifraga fragelaris* and masses of *honkenya peploides*, but unfortunately no oyster plant. 24 King eiders were on a floe, and one fulmar flew past. Turnstones and ringed plovers were evident throughout the walk. Two ravens used a decaying fresh-water berg as a perch just off the Inuit site. The survey took a good 2-3 hours, including lunch at a gabbro outcrop just to the east of the Inuit site. I used fairly basic triangulation techniques, using human figures standing at the three extremities of the site; and then pacing out distances. Robert and I then sketched, measured and took pictures of all 16 structures found on the site, and at the nearby gabbro outcrop. A copy of our full report appears as an annex (1) to this diary*. Robert and I then left the site and climbed up on the low hills to the north-west en route to the petrified forest gorge. We first passed through a magnificent expanse of cotton grass (*Eriophorum scheuchzeri*); and while searching in vain for the petrified trees in the gorge, we saw a glaucous gull, and for the only time on the expedition, a Greenland redpoll, which for a short time fluttered around us like an exotic sparrow. We joined Hugh and Liz above the gorge; and then turned back to base camp, and while descending to the shore disturbed a female sanderling with four chicks. The river contained in the gorge widened considerably on reaching the flats, taking some nimble rock-hopping and bank walking to cross. Liz and Robert soon sped ahead, while I

* I was to return to Myggebugta in August 2001, courtesy of Kathleen and Neville Cartwright of Arcturus Expeditions, and in re-surveying Myggebugta C with more time, I was pleased to find that, excepting a few additional features away from the main site, the survey undertaken in 1989 was basically accurate.

was dived on aggressively by arctic skuas, indicating that I was very near to their nest or to their chicks. On return to the hut, we awaited Hugh before dinner, and when he was overdue, and the sea-fog well down, Robert decided to send out search parties. Robert, Liz and myself went back east to the gorge river, where we had last seen him, while Doug and Hugh Lang went westwards, at the base of the hills in case he had walked past the hut in the fog. Strangely enough Helmut said he had seen him not far behind me; and when Liz, Robert and I eventually found him, walking in our direction, he told us that he believed he had missed the hut in the mist, so he had turned back (in fact only a few hundred yards from the hut when Helmut saw him). On getting back to the tree-gorge river, he realised his mistake, and we, with relief, met him on his homeward journey. Dinner was at 10.30pm, as we had to wait until the western search party returned.

19 July, Wednesday

We awoke to find the mist had cleared. Ravens noisily flew around the tents, soon to be followed by a dark grey fulmar inspecting our camp. For the first time we noticed the lemmings peeping out from beneath the tents. Robert decided to make a full day's excursion to the petrified tree-gorge, but via the low hills rather than along the shore. Hugh Lang had, in fact, found the trees, a few hundred yards up the gorge from where we had been on the previous day. We climbed up on to the hills directly above the hut. Snow-buntings soon joined us, along with ringed plovers, turnstones, and a pair of knot displaying. On a distant lochan to the north our binoculars revealed 20 pinkfeet geese. The flora on the low hills included *erigeron compositus* (cut-leafed Fleabane), horsetail, mountain sorrel, arctic cotton-grass, *lycopodium selago*, stitchwort, and *armeria scabra*. One arctic hare, too, showed itself.

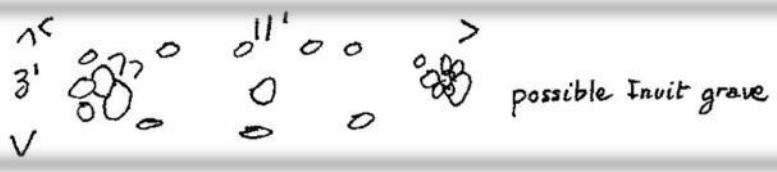


Above – Arctic hare on plateau above Myggbugta

Above – Saxifraga oppositifolia – Purple saxifrage, ubiquitous to Hold-with-Hope

We spent some time at the petrified forest gorge area, seeing petrified trees in situ about 50' above the gorge, and picking up remnants below. There were also exposures on lower ground on the western side of the gorge.

En route back we saw ravens, and surprised an arctic hare (two photographs). On the shore flats we again disturbed the aggressive arctic skuas, and also a pair of long-tailed skuas. On a high terrace overlooking the shore-flats (about 50') we discovered a possible grave, and several cairns. We also saw many examples of *campanula uniflora*. Once again the sea-fog came down, and from the hills we were looking down above it.



20 July, Thursday

The sea-fog lifted quite early in the morning. Before breakfast I was able to take a picture of turnstones on the beach, and attempted some more distant pictures of long-tailed ducks. After breakfast I went up to the nearest Inuit dwelling site (A), trying some sketching before being defeated by mosquitoes and time. Doug, Robert and myself then went north-west with the intention of counting geese on the myriad lakes between Mackenzie Bay and the sands of Badlanddal. Before starting our survey we joined Helmut and Wolf in stalking, and photographing a herd of 8 adult musk oxen and 3 calves. By laying low the herd approached quite close before they saw us, and even then the leader Bull allowed us to take photographs with the herd in its defensive circle. Helmut and Wolf stayed on while we descended to the lakes area. We came upon considerable numbers of lemming holes and their nests as we walked across the dry plain. A large rock outcrop, in the form of a roche moutonee, gave us a superb vantage point overlooking the lakes. A nearby lake showed 65 geese on the water. A closer inspection revealed 6 barnacle geese, 7 families of pinkfeet and 25 chicks. On another nearby lake we saw about 10 pinkfeet plus an odd greylag or two. At the same time our surveying activity was being watched, along with the geese, by a Greenland falcon, who eventually flew off. Flocks of turnstones and sanderlings passed by, perhaps 100 waders in all. In crossing a small river, we found an ancient walrus horn in the bank. Although we could hear the cry of a red-throated diver, we could not see it, while on the return to the hut we disturbed a dunlin on the nest, and quickly took pictures of the four small eggs before the bird returned. I later took the opportunity of taking some pictures of some vivid purple saxifrage on the bank overlooking the beach.

21 July, Friday

The weather looked quite threatening with almost complete cloud cover; and while I started a charcoal picture of the radio station, I did not complete it, as it started to rain in earnest at about 11.30am. I drew another sketch from inside the hut, but by afternoon the rain showed no signs of abatement, and we resigned ourselves to staying in the old radio station, reading and talking; and discovering, through wet drips, that the building was far from waterproof. (In reading through early editions of the Polar Record I discovered that the radio station was once a foremost research station run by the Norwegians, in those days it must have been waterproof.) The combination of the dampness of the inside of the hut, and constipation, made me retire to my sleeping bag for the rest of the day. The rain at last ceased at about 11pm.

22 July, Saturday

Knowing that we wanted to leave at 9 am, I arose at 6am, so that I could finish my charcoal sketch of the hut. While doing so I saw an arctic fox, in its brown and black summer colours walking gingerly round the hut. The weather was fine for our long trek back across the Badlanddal to Stordal base camp; and we started almost on the dot at 9.15 am. While crossing the Badlands we saw 3 musk ox and 2 calves' and a long-tailed skua chick, which we were able to photograph in Robert's hands while the parents waited patiently for us to leave. Barnacle geese, too, were common, with 6 families on a lake, and two separate barnacles. The highlight of the crossing, however, was the sighting of two young white wolves on a low ridge in front of us. These two were the only polar wolves we saw, though we saw many fresh tracks. On the lakes near the base camp we saw 20 barnacle geese and 3 pinkfeet. We eventually arrived back at base camp at 6.30 pm on a glorious clear day with no mosquitoes.

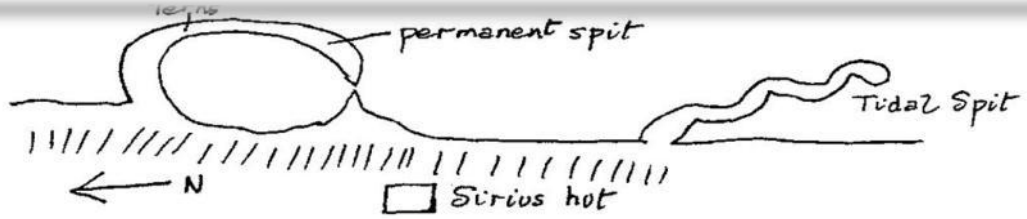
23 July, Sunday

The fine clear weather continued, and I actually had a bath in the comparatively warm waters of the stream which flowed past our camp. It was warm because unlike the main Stordal river it was not fed by glaciers, and originated in the flat plain by the camp. We even saw an occasional small trout or char swim past. After our long walk back from Myggebugten the previous day breakfast was late at 9 am, and heralded by 2 red-throated divers flying over. While we had been away the long-tailed skua nest by the orange hut had produced a fledgling, which with Robert's help I was able to photograph next to an unhatched egg, while the mother sat on Robert's hat. I also took some pictures of the long-tailed skua mother (or father). The delicate flight of the long-tailed skuas were almost replicated by the arctic terns, which were very much in evidence. The snowy owl pair, too,

occasionally flew around. I noticed much more *saxifrage aizodes*, and the white of the arctic bistort everywhere. In the afternoon I walked by myself across the plain to the gates of Stordal and to the trappers' hut (Nanok), taking further pictures of the superb views up to Takkerne. Robert radioed to Constable Point to tell them that we should be off around Loch Fyne for the next few days.

24 July, Monday

We left on a more overcast morning for Loch Fyne West hut. By the base camp lakes we saw only 5 pinkfeet, and one snowy owl. On arrival at the Sirius Hut at Loch Fyne at about midday, we immediately saw 14 long-tailed ducks on the Loch, and disturbed 15 pinkfeet geese on the shore, causing them to brave the choppy water of the Loch. The Sirius Hut and its neighbouring buildings were very well maintained. In the Hut were all mod cons including a gas stove, and a cosy dining room/bedroom and kitchen complete with Playboy pin-up. Oil lanterns had been left with open match-boxes for emergency use. The Sirius patrol had a full range of tools and supplies in the hut. After a welcome lunch away from the strong cold wind blowing off the Loch, I walked on to the northern permanent sand spit.



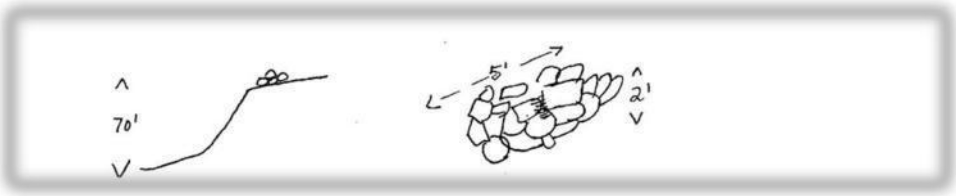
A spit to the south was serpentine in shape (perhaps an esker) and was tidal. On the permanent spit, I was dived on aggressively by two arctic terns. There was a considerable amount of seaweed on the tide-line on the spit. I then walked north along the coast, carefully avoiding areas of beach which although looking firm, turned out to be mires. Above me were lines of basalt sills, with many hexagonal column areas looking like Whin Sill. On return to the hut I noticed the extensive raised beaches above; also *armeria scabra*.

That evening it was a real luxury to enjoy our excellent curry meal sitting at a table with proper chairs; and to round off the meal with whisky.

25 July, Tuesday

After an early morning of photographing the hut and its surroundings in glorious weather, we left the hut at about 10 am. Helmut and Wolf had decided to stay at the hut till Friday 28 July and to meet us back at Stordal base camp. We were soon walking across the sands of the Bendelv Flats, as the tide was low. Halfway across was an old rowing boat, left high

and dry. *Honkenya peploides* occurred on many of the firmer areas of sand. Once we reached the eastern side we saw 32 barnacle geese, and a red-throated diver on its nest, which had one egg. Some of the pools had *hippuris vulgaris*. One raven and more barnacle geese (60) flew past; before Hugh Montgomery unfortunately fell while crossing the Sogneelv, badly twisting his knee. After Hugh Lang bound up the other Hugh's knee we then climbed up a steep bank (70' high) at the top of which were several structures.



Just before we reached the ruined hut, at Loch Fyne (actually 2-3 miles north of its location on the 1:250,000 scale plan), we were passed by a 100 king eiders in V formation flying south over the Loch. We then set up camp on the scant flat areas near the old hut, the shed of which was beginning to fall into the adjacent shallow gorge. Nevertheless, the main part of the hut though small seemed watertight, and acted as a cosy kitchen and windproof dining room for three nights. There were relics of its previous use, including tools and an old stove, table, shelves and bunk bed. On the shelves, as well as bottles containing various liquids, an old coffee grinder, old cutlery was a Tate and Lyle sugar tin, with East Greenland Expedition 1956 overprinted. Amongst old books and papers was a Picture Post from the fifties. After dinner Doug showed us a large tillite boulder just to the south of the hut, tillite being 700 million years old boulder clay from Pre-Cambrian glaciation. There were remnants of more buildings, and old iron stoves, in this area. It was interesting to see that Douglas's old Greenland map showed the hut as a site of an old whaling station, but there was no evidence of this. On the beach was *fucus rack* and *laminaria*.

26 July, Wednesday

Robert wanted to look at Tobias Dal, but only four of us were really fit, with Hugh Montgomery resting in camp prior to the walk back on the Friday morning, and Doug with a pulled back muscle. Nevertheless Doug joined Liz, Robert, Hugh Lang and myself on the start of our walk over the low watershed to the head of Tobias Dal. We generally followed the northern side of the Sogneelv to under Knasten. Doug left us, and we had lunch on the watershed. On the way up we saw an arctic hare, 3 families of pinkfeet (7 adults), a snowy owl, a ptarmigan and chicks, and a sanderling and four chicks. In the extensive upland valley which marked the watershed, we noticed 18 musk oxen, one separate bull and 14 further musk oxen. In the wetlands and lochans at the head of Tobias Dal, Robert and myself counted a total of 274 pinkfeet geese, 10 goslings and 21 barnacle geese. From the lochans and larger lakes at the head of Tobias Dal it was only a relatively short walk down to the shores of Loch Fyne, overlooked to the west by the impressive peaks of Nordhoeks Bjerg,

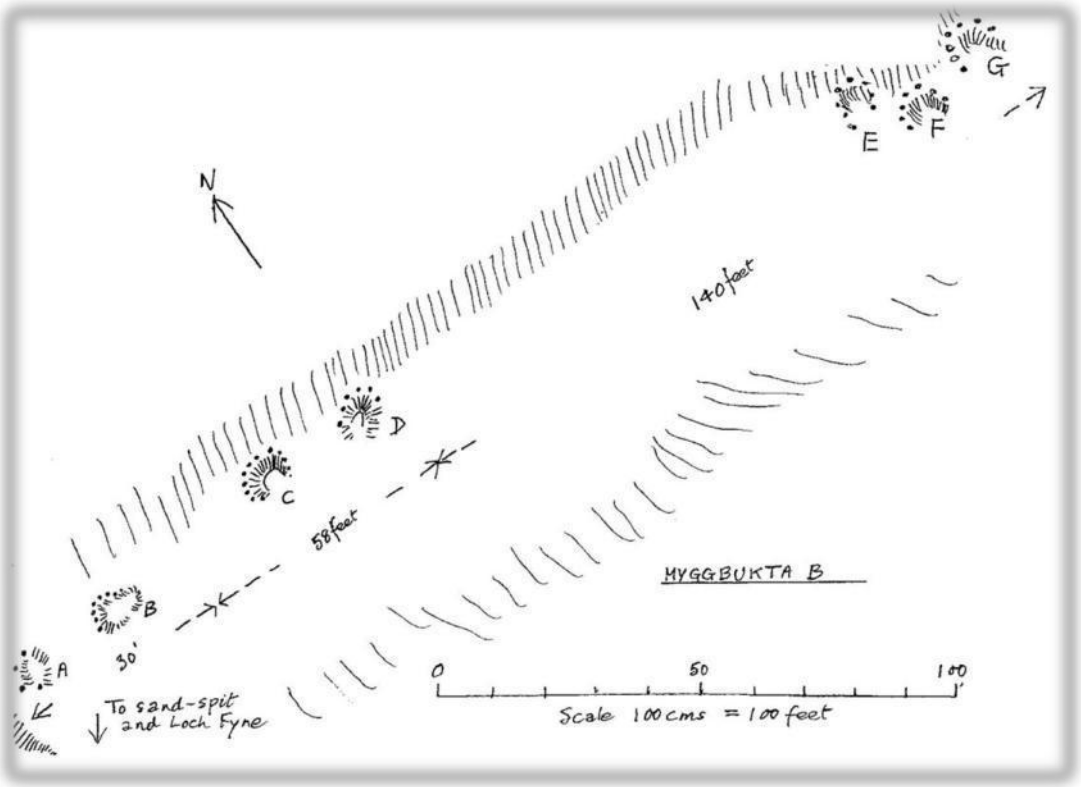
reaching over 1,500 metres above the Loch. Two ravens flew about the trappers' hut in the evening.

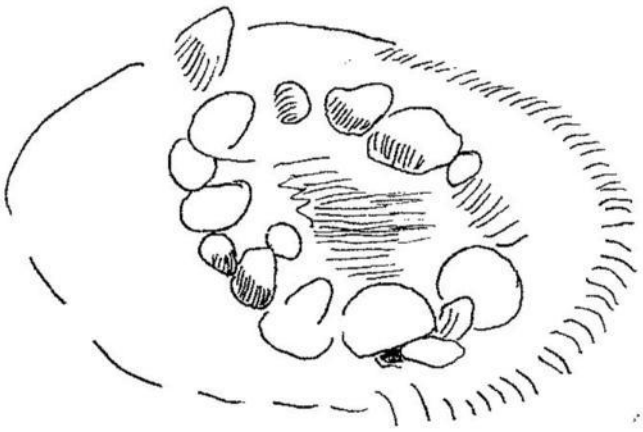
27 July, Thursday

Apart from Hugh Montgomery we all walked north along the coast in the morning and in glorious weather, if somewhat breezy. Three glaucous gulls, 35 barnacle geese and 20 pinkfeet geese passed by, and I noticed the fern, woodsia glabra. After lunch sunbathing by the side of the Loch, Liz, Robert and myself walked inland to the Nanok old trappers' hut, past bright green meadows and masses of willowherb. The Nanok hut was not watertight, but still contained a great deal of gear like plates, a shovel, a tin opener, and an old stove. It had a very small, polar bear-proof entrance door, with an axe very handy. We walked leisurely back to the hut, with a strong wind whipping up waves on the Loch behind us. While relaxing back at the hut we saw two arctic terns, white in the low sun, struggling north up the Loch against the wind.

28 July, Friday

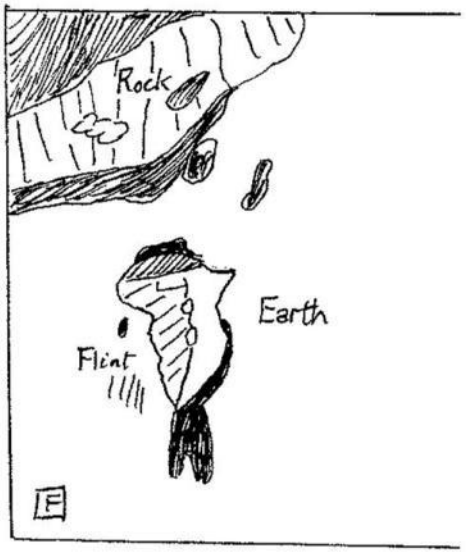
We were sorry to leave what had become quite an idyllic camp by Loch Fyne; and through the binoculars saw that Helmut and Wolf had also broken their camp at Loch Fyne West. On the way back along the eastern side of Loch Fyne we stopped at the Inuit site (Myggbukta 'B'), on a rise overlooking the Loch. We did some preliminary surveys and took photos.



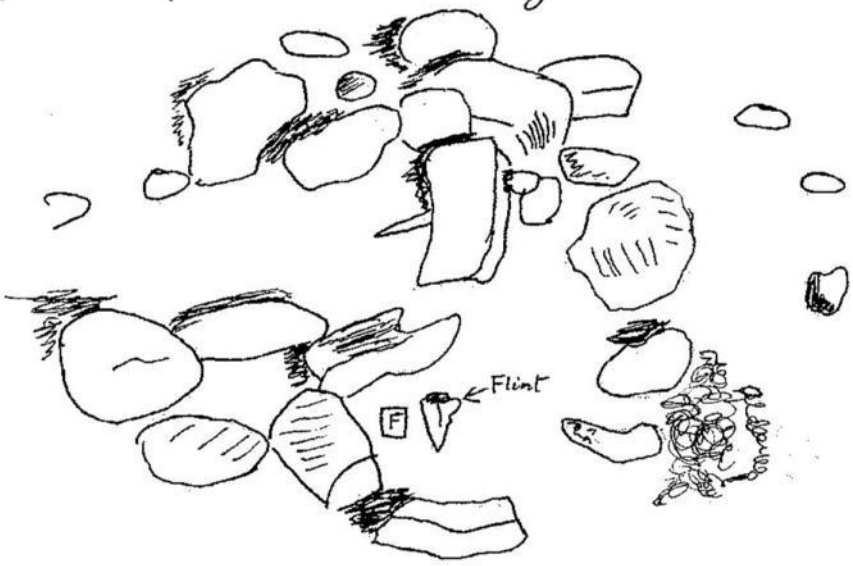


A Sunken dwelling

D



We also found a flint artefact in a hearth-like area (see photos) removed from the main dwellings



HEARTH ?

Amongst the sunken dwellings we noticed *Stellaria luminosa* and *Sagina intermedia*; and at the same time heard the wailing of divers. As the tide was much further on, we had to cross the wide sand and mud shore at a higher point than we crossed three days before. We soon passed the high and dry rowing boat, and on reaching the far shore had our lunch. As Hugh was going at quite a slow pace with his injured knee, I stayed with him, while the rest of the party went on. We arrived back at about 4.40pm. Rob had taken advantage of his earlier arrival to wash his clothes in readiness for leading the Mestersvig party. We noticed that the turnstones seemed to be preparing for migration.

29 July, Saturday

I arose early and had a bath in the river at 6.30am. After breakfast I decided to walk west along the top of the river terrace to a bluff overlooking the end of Moskusoksefjord, and I took the opportunity of taking photographs of the large ice-bergs in the fjord, and a panorama of the head of the fjord. En route were persistently diving arctic terns, many ringed plovers, dunlins and long-tailed skuas. In the afternoon Dougie and myself, followed by Liz, went up the long green ridge at the gates of Stordal for a last look at the magnificent scenery. Near the top of the ridge we came within two feet of an arctic hare, and saw three adult and three calf musk oxen. We then went down to Nanok trappers' hut where Liz was sitting reading. On the way back we also encountered the lone bull musk ox which Liz had nearly blundered into earlier. Our arrival back to camp coincided with the arrival of a musk ox and calf, but they ran off.

30 July, Sunday

The day of departure dawned with high cloud cover. I was up at 7.30am in order to wake up Robert for his radio call to Constable point at 7.50am. We were given the news that our plane, carrying the incoming Mestersvig party, was scheduled to leave Akureyri at 9.00am, so after breakfast we broke camp, transporting our gear up to the orange hut. Nevertheless we had our last lunch at base camp, watching two musk oxen playfully charging each other across the other side of the river. It was almost as if they knew we were leaving, and they were getting ready to re-possess their favourite pastures. The Twin Otter arrived on time at 2.30pm, piloted by Siggy Adalsteinsson himself. We were soon on board, and en route first to Traill Island, Holms Bugta, to pick up members of a KREA expedition. Mountains of equipment were loaded on the plane, including a Greenlander's husky which had befriended the KREA expedition members. The husky had evidently run off from his Greenlander owner on a winter trip up from Scoresby Sound. In talking to some of the KREA members, Robert discovered they had been doing research on lemmings, and Robert looked

at the possibility of using similar recording methods on his Mestersvig trip. The view across King Oscar's Fjord was magnificent, with the Staunings Alps in all their icy splendour. After the heavily laden Twin Otter had taken off from Traill Island, it was only ten minutes to the full length air strip at Mestersvig, where Robert's Mestersvig party were waiting for him, along with the members of the Sirius Patrol who manned the Mestersvig facility. In talking to one member of the party about what had been happening in the UK since we had been away I discovered about the proposal to merge the Countryside Commission (CC) and the Nature Conservancy Council (NCC), though not the full details. We left Robert at 5.00pm and took off for Constable Point. En route we had superb views of the various huts I had stayed in in 1982. After a very scenic flight we landed at Constable Point at 5.34pm for re-fuelling. The last leg of our homeward flight started at 6pm, and we soon found ourselves in thick cloud. Akureyri was reached at 9pm. A taxi was soon contacted to take us to the Hotel Edda, a college converted to a summertime hotel, which we reached at 9.30pm. Our first non-dehydrated food for 3 weeks was savoured with great relish at dinner, despite its 1300 Kr cost (about (£14). This was followed by showers, and our first sleep in a bed for three weeks.

31 July, Monday

I was down for breakfast at 8am, with gallons of coffee. We then said goodbye to Helmut and Wolf who were leaving on an early plane. Addresses were exchanged for a reunion in Edinburgh in February. I went down into Akureyri to look round the many bookshops, the Natural History Museum and the harbour. After consuming two hot dogs, I joined Liz for coffee and cakes in a hotel cafeteria. The Botanical Gardens beckoned for an hour's sunbathing and reading before meeting Liz and Hugh Lang at Hotel Edda at 4.30pm. Hugh Montgomery and Dougie had already left for Reykjavik on an earlier plane. On leaving Akureyri Airport we were surprised when the nearly empty Fokker Friendship flew north to land at Husavik, to pick up a large coach party. We eventually landed at Reykjavik at 6.45pm, and went by taxi to the Townstar Guesthouse. Hugh and Dougie had tired of waiting for us, so the three of us went into town hoping to find them. We were unsuccessful, but consumed a full fish supper, coffee and ice-cream before returning to the Townstar at 10pm.

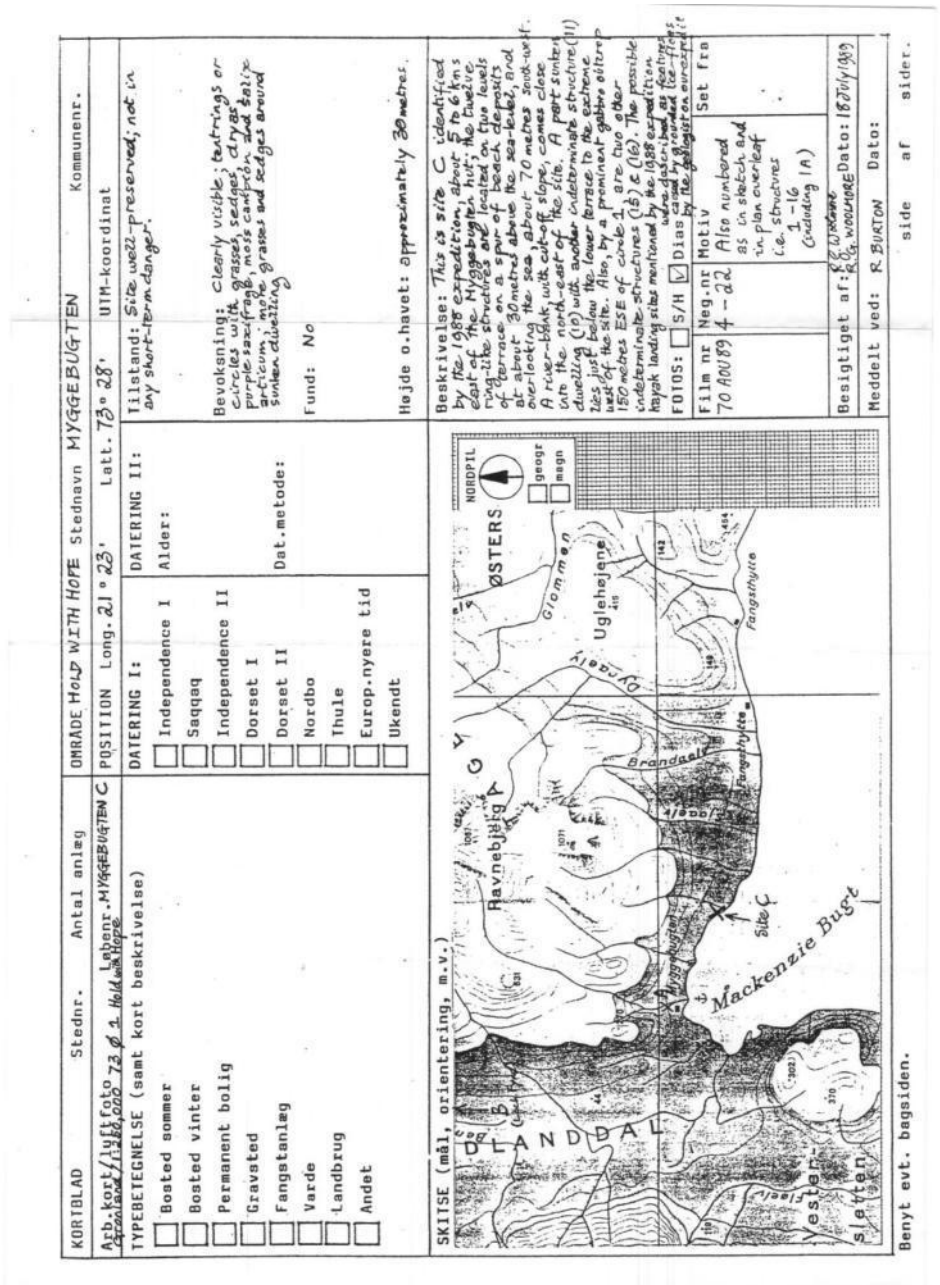
1 August, Tuesday

We met for breakfast at 8.30am before looking round town, which in my case was the book shops. As my Heathrow plane left before the Glasgow plane (on which the remaining four were travelling) I went back to the Townstar at 11am to pick up my rucksack. I then walked across the park, had coffee in the Bus Station, and reached the Hotel Loftleidir Terminal at

1pm. The plane left on time at 3.50pm, and after a superb Icelandic dinner we landed at 7pm at Heathrow. The Cheltenham bus was on time at 8.40pm; and I was back in the flat, with the help of a taxi, at 11pm.

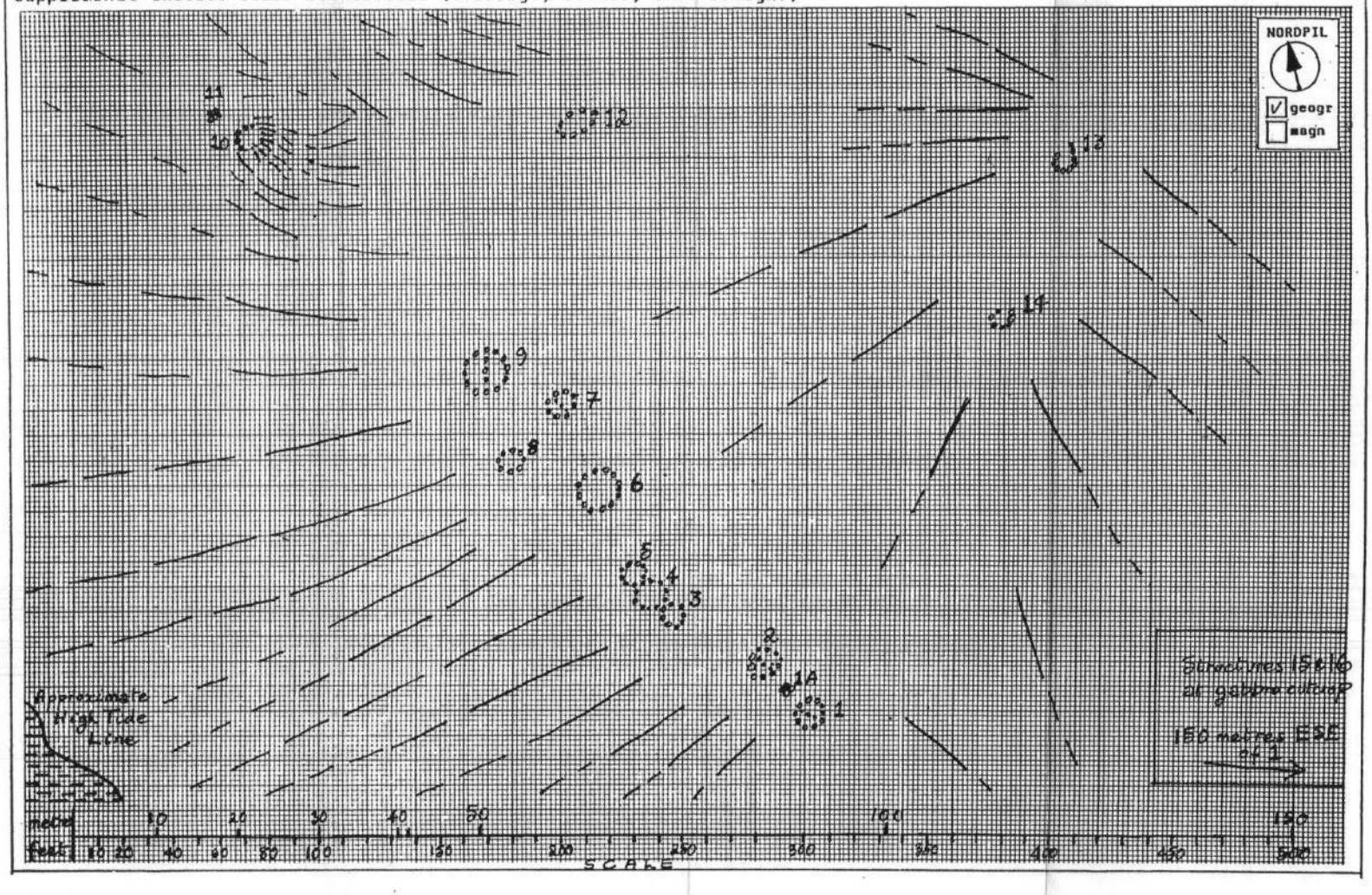
MYGGEBUGTEN C SURVEY

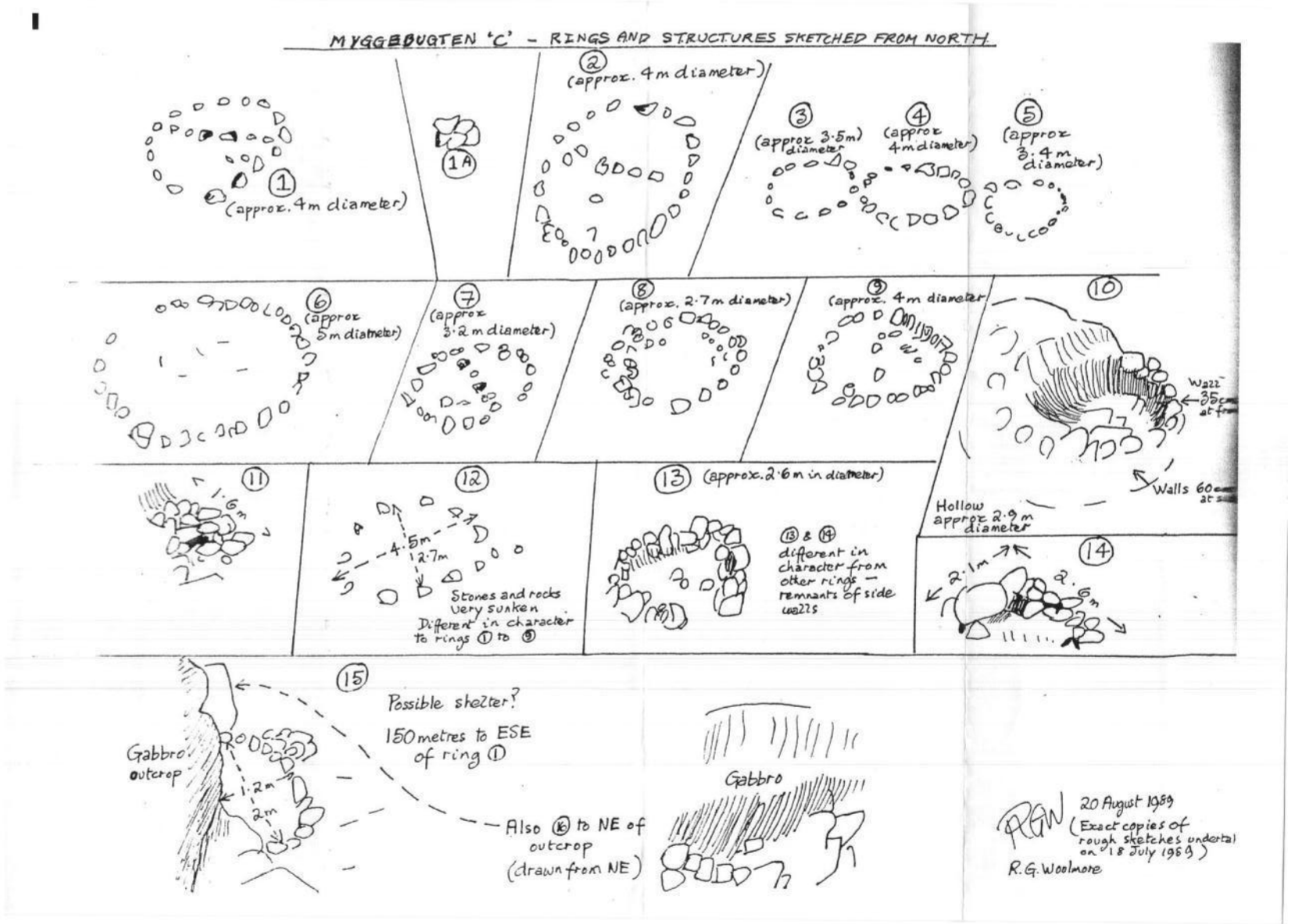
18 JULY 1989



KORTBLAD Stednr Anlæg nr Emne

Supplerende skitser eller beskrivelse (oversigt, detail, snit o.lign.)




MYGGEBUGTEN 'C' - RINGS AND STRUCTURES SKETCHED FROM NORTH
1
(approx. 4m diameter)
1A
2
(approx. 4m diameter)
3
(approx 3·5m diameter)
4
(approx 4m diameter)
5
(approx 3·4m diameter)
6
(approx 5m diameter)
7
(approx 3·2m diameter)
8
(approx. 2·7m diameter)
9
(approx. 4m diameter)
10
Walls 60
Hollow approx 2·9m diameter
11
1·6m
12
4·5m
2·7m
Stones and rocks very sunken
Different in character to rings 1 to 9
13
(approx. 2·6m in diameter)
13 & 14 different in character from other rings — remnants of side walls
14
2·1m
2·6m
15
Possible shelter?
150 metres to ESE of ring 1
Gabbro outcrop
1·2m
2m
Also k to NE of outcrop (drawn from NE)
Gabbro
RGW
20 August 1989
(Exact copies of rough sketches undertaken on 18 July 1989)
R.G. Woolmore

FLORA AS SEEN BY R. G. WOOLMORE

LATIN	ENGLISH
Armeria scabra	Thrift
Betula nana	Dwarf birch
Campanula uniflora	Common harebell
Cardamine bellidofolia	Alpine cress
Cassiope tetragona	White Arctic Bell-heather
Cerastium arcticum	Alpine chickweed
Cochlearia groenlandica	Common Scurvy-grass
Draba alpine	Alpine Whitlow-grass
Draba nivalis	Smoothing Whitlow-grass
Dryas integrifolia	Entire-leafed Mountain Avens
Eplilobium latifolium	Broad-leafed Willow-herb
Equisetum arvense	Common Horsetail
Erigeron compositus	Cut-leafed Fleabane
Eriophorum scheuchzeri	Arctic Cotton-grass
Hippuris vulgaris	Common Mare's-tail
Honkenya peploides	Sea-beach sandwort
Lesquerella arctica	Arctic Bladder-pod
Lycopodium selago	Club-moss
Melandrium affine	Arctic Lychnis
Minuartia biflora	Two-flowered sandwort
Oxyria dignya	Mountain Sorrel
Pedicularis flammea	Flame-tipped sandwort
Pedicularis hirstuta	Hairy Housewort
Polygonum viviparum	Viviparous Knotweed (bistort)
Ranunculus nivalis	Snow Buttercup
Ranunculus pygmaeus	Pygmy Buttercup
Rhodendrum lapponicum	Lapland Rose-bay
Sagina intermedia	Snow Pearlwort
Salix arctica	Arctic Willow
Salix glauca	Northern Willow
Saxifraga aizoides	Yellow Mountain Saxifrage
Saxifraga cernua	Bulbous Saxifrage
Saxifraga fragelaris	Spider plant
Saxifraga hirculus	Marsh (or Bog) Saxifrage
Saxifraga hyperborea	Pygmy Saxifrage
Saxifraga nathorstii	Hybrid of Purple and Yellow Mountain Saxifrage
Saxifraga oppositifolia	Purple Saxifrage
Silene acaulis	Moss Campion
Stellaria humifosa	Low chickweed
Stellaria longpipes	Long-stalked Stitchwort
Taraxacum sp.	Dandelion
Vaccinium uliginosum	Arctic Blueberry
Woodsia glabra	Woodsia

Annex 3

BIRDS AND ANIMALS SEEN BY R. G. WOOLMORE

Red-throated diver
Fulmar
Pink-footed goose
Greylag goose
Barnacle goose
Eider
King Eider
Long-tailed duck
Greenland falcon
Ptarmigan
Ringed plover
Knot
Sanderling
Turnstone
Dunlin
Arctic skua
Long-tailed skua
Glaucous Gull
Arctic tern
Snowy owl
Raven
Snow bunting
Greenland redpoll
Arctic wolf
Arctic fox
Arctic hare
Musk ox
Lemming
+ caribou horn (extinct), walrus horn

Also

Mosquito
Bumble-bee
Arctic fritillary
Grey moth
Daddy-long-legs

LANDSTON
HOME
FORLAND
HOLD WITH
HOPE
ØSTERSLETTEN
LOCH FYNE
Mackenzie Bugt
Kap Bennet
Kap James
Kap Knuas
Carlshavn
Arundel Ø
Holland Ø
Kap Broer Ruys
Knudshoved
Steensbys Bjerg
Plateau
Nordhoeks Bjerg
Passagehøje
Ravnebjerg
Uglehøjene
Ladderbjerg
Ankerbjergselv
Ulvedal
Vestersletten
Kap Alfred
Kap Hawes
Kap Sumner
Kap Isabella
Kap Parry
Kap Sabine
Kap Lyon
Kap Dudley Digges
Kap Fanshawe
Kap Crozier
Kap Frankland
Kap Graah
Kap Ravn
Kap Tordenskjold
Kap Ingolf
Kap Dan
Kap Ryder
Kap Ole Rømer
Kap Hammer
Kap Tyrconnel
Kap Admiralty
Kap Seymour
Kap Garry
Kap Clarence
Kap Walker
Kap Bowden
Kap Parker
Kap Cranstoun
Kap Kellett
Kap Bryant
Kap Cranstoun
Kap Parker
Kap Bowden
Kap Walker
Kap Clarence
Kap Garry
Kap Seymour
Kap Admiralty
Kap Tyrconnel
Kap Hammer
Kap Ole Rømer
Kap Ryder
Kap Dan
Kap Ingolf
Kap Tordenskjold
Kap Ravn
Kap Graah
Kap Frankland
Kap Crozier
Kap Fanshawe
Kap Dudley Digges
Kap Lyon
Kap Sabine
Kap Parry
Kap Isabella
Kap Sumner
Kap Hawes
Kap Alfred
Fangsthytte
Fangsthytte (Ruin)
Fangststation
Tørnekær
Ackland Ø
Arundel Ø
Holland Ø
Dyrdal
Langsdalen
Tordalen
Brandelv
Sydelv
Grønnelv
Ankerbjergselv
Vuntchebjerg
Fuchs Bjerg
Whittards Bjerg
Hagboms Bjerg
Sælvebjerg
Ladderbjerg
Ravnebjerg
Uglehøjene
Knudshoved
Steensbys Bjerg
Plateau
Nordhoeks Bjerg
Passagehøje
Vestersletten
Østersletten
Ulvedal
Dybendal
Vergys
Ankerbjergselv
Fangsthytte
Fangsthytte (Ruin)
Fangststation
Kap James
Kap Knuas
Carlshavn
Arundel Ø
Holland Ø
Kap Broer Ruys
Kap Bennet
Kap Alfred
Kap Hawes
Kap Sumner
Kap Isabella
Kap Parry
Kap Sabine
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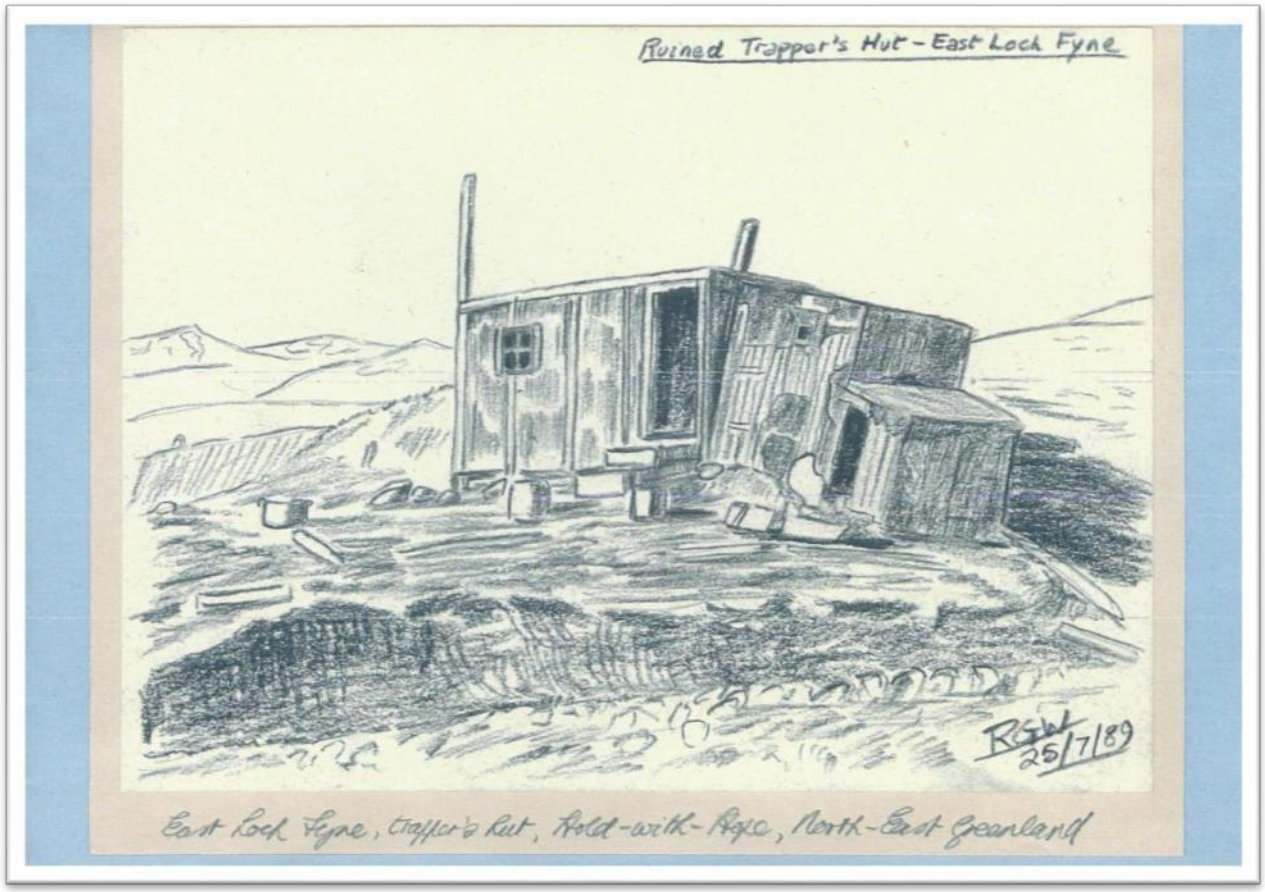
Kap Ryder
Kap Ole Rømer
Kap Hammer
Kap Tyrconnel
Kap Admiralty
Kap Seymour
Kap Garry
Kap Clarence
Kap Walker
Kap Bowden
Kap Parker
Kap Cranstoun
Kap Kellett
Kap Bryant
MOSKUSOKSELANDET
45°
30°

Loch Fyne Sirius Station, Hold-with-Hope, North-East Greenland



East Loch Fyne, trapper's hut, Hold-with-Hope, North-East Greenland

Liverpool Land Stravaig 2014

John Hutchinson

In 2014 I went to East Greenland to do a ski traverse of Liverpool Land. The weather was not great. We were delayed arriving by a big storm that put down a lot of soft snow. Rather than keep a diary I took my mind off the effort of pulling the pulk through the deep snow by creating a poem about the day's events. Each night I would write down what I had come up with and by the end of the trip it has become about 150 lines long. I will only give you an extract here. It is best read in sitting in a draughty tent, with the wind blowing the spindrift round the snow walls, the day's freeze dried food eaten, and the whisky all drunk long ago, but there are bits that capture some of what the trip was about.

The sevens trip to Greenland
Had much pleasure and some pain
And this saga tells the story
In one glorious refrain

They set off on a Friday
In skidoos one, two, three
To the northern end of Liverpool Land,
Cap Grenville don't you see.
It was cold and windy
So they dressed up warm and snug
Then Ali pulled a moony
And dropped a glove, the mug!

We got a weather forecast
A storm was on the way.
We camped and built a snow wall
To keep the wind at bay.
The pressure rose, the wind got up
And blew with all its might.
We were condemned to spend a day
Tent bound… what delight.

We all sat in the yurt at night
And Hillary kept the stove alight.
Melting snow blocks was her forte,
And chiding men when they were naughty.
For her hard work we all gave thanks
And put up with her little pranks,
Like hiding David's small salami
He'd won at cards. It drove him barmy.

When the team set out again
The going was quite tough.
Five minutes leading at the front
Was found to be enough.

Conrad called out change
Every little while.
Then you get some respite
And join the crocodile.

Up valleys broad and deep.
Under mountains grand,
Over cols short and steep
Went our little band.
The peaks were high and stately
Like the Aiguilles or the Cuillin.
Lots of soaring, rocky lines
Distract you from the pullin'.

The wind and cold did burn the skin.
Which brand of skin cream to rub in?
Nightly strong views were expressed,
Is Vaseline or Nivea best?

When we got to Storefjord
Just by Himmerland
We'd been going quite slowly
And the plans we have won't stand.
So should we all go round by sea?
Solid ice will be the key.
Or cross the icecap, high and white?
Last one we did was no delight.
Or last of all, we could decide
To go down Klitdale broad and wide.

The talk went on for many hours
The chat did ebb and flow.
Passions got quite high at times
But I did not see a blow.
At last we got consensus.
The icecap was to high,
The sea ice was to risky,
Sensibly- down Klitdale we would fly

Now we are coming to the end of this ode,
As we sit in Scorsbysund, it's been a funny road.
The adventure has not turned out as anyone expected
But adventures are a bit like that, as many have reflected.
I think it's been successful
As a trip like this should be.
We've worked and laughed and argued,
Been and seen and done,
Shared and talked and learned many things.
Each generous and grateful,
Supporting one and all.
And also got to Scorsbysund.

A Cat in the Arctic: leading a school mountaineering expedition to East Greenland.

Neal Gwynn

In July 2009, I sat on the side of a mountain in East Greenland after watching my group of school pupils from Glasgow make a successful first ascent. I looked down on Faxa Sø. There were many stunning mountains surrounding this lake; however, there was no obvious way to access them, as they were blocked by impassable rivers and the lake itself. There was certainly no way that we could tackle these peaks on that expedition as the challenges were insurmountable. Whilst resting, I commented to my co-leader, Alan Halewood, about needing a sea plane and boats in future so that we could land on Faxa Sø. We then quickly left to catch up with the pupils who were already heading down to our camp in the valley – with an idea for adventure planted in my head.

I made some initial enquiries about taking a sea plane to Greenland when I got back to the UK a couple of weeks' later - initially still high on the excitement of the expedition and then slipping into the post-expedition doldrums. It became clear that modern sea planes are not capable of flying the distance required for a trip to Greenland nor capable of carrying the payloads necessary for an Arctic expedition. The thoughts of taking pupils on expedition to Greenland in a sea plane were therefore put to the back of my mind.

Three years later in Austria, I had a chance encounter with Paul Warren Wilson, who happened to have a part share in a Catalina and was the plane's Chief Pilot. I knew little about Catalina flying boats at the time – other than that they had been used extensively in East Greenland until the late 1960s. Conversations with Paul and his infectious enthusiasm re-sparked the idea of a Greenland sea plane expedition. I put forward my proposal to the recently appointed Headmaster of Worksop College, with whom I had previously worked. He needed little convincing that this was an outlandish educational experience for young people, permission was granted and funding secured.

Paul and I started planning in earnest to bring the expedition to fruition. There were numerous complicated logistics for us to consider. The destination was changed from the initial idea of Faxa Sø in Gaseland to Holger Danskes Briller in the southern Stauning Alps. The latter provided greater mountaineering objectives, as well as shorter flying times.

The aims of the expedition were clear. To fly pupils from Worksop College to East Greenland in *Miss Pick-up*, the UK's only airworthy WWII Catalina flying boat; land on Holger Danskes Briller; explore the southern Stauning Alps with the intention of making first ascents; and, throughout the expedition, equip the pupils with the skills and experience required to become independent mountaineers, leading to lifelong participation and a love of the Arctic. Simple then!

A superb team of staff was put together: mountaineers, pilots, a doctor and an engineer. All had an enviable track record in their respective fields. Each member of the leader team was involved in the preparations for the expedition and this was important for the success of a moderately complicated venture such as this one. Alan Halewood once again offered his services as the other Mountain Instructor on the expedition – his third such youth expedition with me - and took responsibility for the pre-expedition training in the UK.

Catalina on Faxa Sø with Catalina Dome in the Background

Satellite imagery was obtained from the *US Geological Survey* in early June to assess the ice conditions in Holger Danskes Briller. These showed the lakes to still be very much frozen. This was not a surprise as the historical imagery that we had gathered from the last ten years showed that these particular lakes almost always became ice free during the last week of June and the first week of July. The availability of an ice-free lake was critical to the success of the expedition and therefore satellite imagery was viewed as frequently as possible throughout June. All indications were that there had been a particularly harsh winter in East Greenland and that the big thaw in 2015 was indeed going to be late in its arrival. We already had a plan B in the event that Holger Danskes Briller still had surface ice: Faxa Sø in Gaseland. The last satellite photograph that we had access to was almost a week before the expedition's departure and this showed large chunks of ice on Holger Dankes Briller; however, by comparison, Faxa Sø looked like a tropical paradise. However, just to make sure, fellow Scottish Arctic Club member, John Thorogood, jumped in his Piper Apache and popped up to Greenland to do a fly-by of the two lakes for me.

At 10am on Tuesday 7th July, the Catalina departed from Loch Lomond in typically 'dreich' west coast weather heading for Akureyri in northern Iceland for a brief rendezvous with John Thorogood regarding ice conditions. And, the following day, onward to the remote airstrip of Constable Pynt in East Greenland. There was lots of work to be done at the airstrip prior to going into the field the next day: all supplies had been sent by sea freight earlier in the year and these needed to be sorted and loaded onto the Catalina. Dinghies and engines had to be assembled and prepared for deployment from the blisters at the rear of the aircraft: this was, of course, the only way to get our supplies, as well as ourselves, from plane to shore once we had landed on Faxa Sø.

It was an ever so slightly ominous experience departing from Constable Pynt the next day on the first of two flights into Faxa Sø. We flew under the low cloud on a murky Arctic morning, sometimes only a very short distance above the partially frozen fjords, looking out as ice bergs passed by the windows. Landing, deployment of the dinghies and unloading went hitch-free and the Catalina returned a few hours later with the rest of the team and equipment: payloads meant that we had to deploy the team with their equipment on two flights.

The team of ten students, two mountain instructors, two teachers and one doctor spent the next three weeks exploring the Vinblœsdal valley using the dinghies to set-up satellite camps and access mountains on all sides o f Faxa Sø. The Arctic in summer has to be the finest location in the world for a youth expedition: moderately-sized mountains so no risks from altitude

sickness; twenty-four hour daylight so no risk of being benighted; no nasty creepy-crawlies or bugs so little chance of becoming ill; very sparsely populated so no chance of untoward encounters with locals. And, of course, a plentiful supply of unclimbed mountains, and unexplored glaciers and valleys.

One of the aims of the expedition was to provide training and experience such that the students could become independent mountaineers, going on to organise and participant in their own expeditions. There was therefore a substantial proportion of time allocated to training in mountaineering; campcraft; use of satellite phones, radios and EPIRBS, polar bear deterrents and the use of firearms; and first aid. The expedition doctor, Tariq Qureshi, taught a wilderness first aid course to the students whilst they were on expedition. One of the final days in the field saw the students participate in a scenario that required them to draw together skills from a number of different areas that they had learnt during the expedition.

Snowshoe ascent of Catalina Dome

The expedition was fortunate to be joined by four exceptional pilots. Our Chief Pilot was an ex-RAF Harrier Instructor who had extensive experience of both flying the Catalina across the globe and also training and assessing other Catalina pilots. Nevertheless, the flying component of the expedition was not without interest as Paul recounts in his flying report: "The last run of the day down the ski slope is often judged to be the most dangerous one, and the most likely time for things to go wrong. And so it is with flying. Flying is not inherently dangerous, but is terribly unforgiving of any carelessness. On the last landing run at the lake, approaching from the east end, we had a tailwind of about 7 kt. Simple, then - we fly to the far end of the lake, turn around, and land. But wait - as we reach the far end, the 7 kt tailwind has turned into a 12 kt headwind! Now that is something quite hard to get one's head around… but of course, there are various valley effects. On this occasion, the wind was blowing into the lake from both ends. What exactly did it do when the winds met in the middle? Presumably, it went upwards! So there we were, on the last run, with exactly the sort of situation that if treated with complacency could lead to a major problem. Landing downwind in a seaplane is a highly undesirable thing to do: the hydrodynamic forces on the aircraft are much higher then normal, and can lead to instability, a water loop or a nose dive. So I made several runs along the lake in each direction, finally choosing to land from west to east, as this gave the longer run into wind. All was well, and loading was completed in good time, including the interesting sight of watching the expedition leader deflating a boat whilst still in it on the water, prior to loading it into the Catalina."

St Cutherbert's Mount

So did this expedition achieve its objectives? We did fly to and from East Greenland in the UK's only airworthy Catalina flying boat and at least one student described this as the best experience of their life so far. We did climb some mountains: five Arctic peaks of which we anticipate that three are possibly first ascents. We did not explore the southern Stauning Alps, but we did explore the Vinblœsdal valley instead. Such is the nature of expeditions. We did equip the students with the skills and experience required to become independent mountaineers including, perhaps most importantly, exposing them to real risks and educating them about how to manage these risks.

Will this lead to students' lifelong participation and a love of the Arctic? Well, I hope so. This expedition has been described by some as the trip of a lifetime. I very much hope that it was not the trip of a lifetime, but rather an expedition to start a lifetime of adventure for these ten young people. I look forward to hearing what they get up to in years to come.

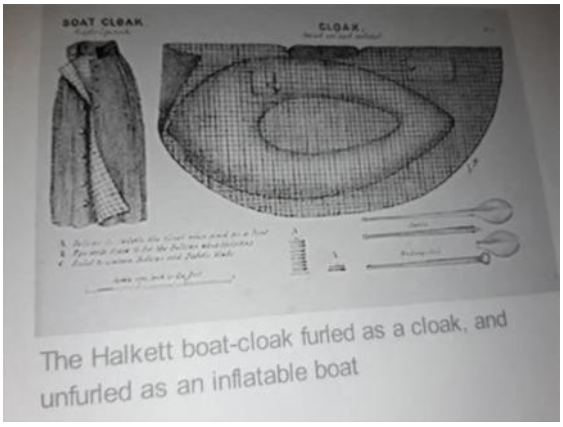
John Rae and the Halkett Boat

Louise Hollinrake

In 1844 interest in exploring Arctic Canada was high, with the British Government keen to find a trade route in the North from the Atlantic to the Pacific, which became known as the Northwest Passage. At the same time the fur trading Hudson Bay Company was equally keen to expand its areas of supply. Both hoped to explore and fill in the blank spaces on the charts, claiming the territory for Britain.

In London a 24-year old lieutenant in the Royal Navy who had experience in travelling in Northern Canada, Peter Halkett, was applying himself to the development of a water-borne craft to assist this exploration -- that would be light enough to be carried over rough terrain but was robust enough to be used in extreme weather.

He used recently invented rubberised cloth to make sealed tubes forming a big rubber ring with a floor. Conscious that anything carried on an arctic expedition had to be worth its weight he designed a boat that when not inflated could double as a waterproof cloak, with the tubes cunningly hidden inside.



In a pocket was a small pair of bellows and the blade of a paddle: he suggested the wearer would carry a walking stick which could be attached to the paddle blade, and an umbrella which could be used as a sail.

A Halkett boat-cloak in use

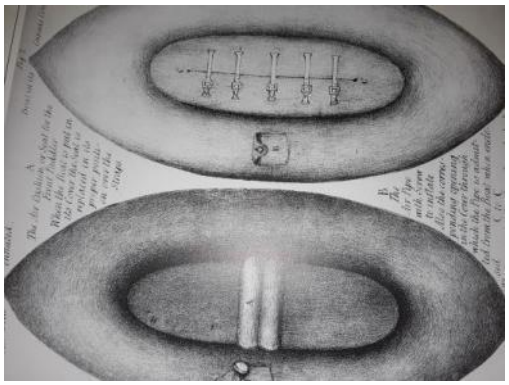
Having produced his boat-cloak Halkett did sea trials on the Thames near Greenwich. Although the boat was not a joke Halkett's reports of the sea trials show a delightful sense of humour. He kept a log using the same terminology and trial methods as would be used for any naval vessel, and was extremely pleased when he was 'able to paddle and sail over 9 miles without taking in any water, despite being met by --passed by – and almost run down by – various Metropolitan steamers plying to and fro causing no little commotion in the troubled waters of the River.'

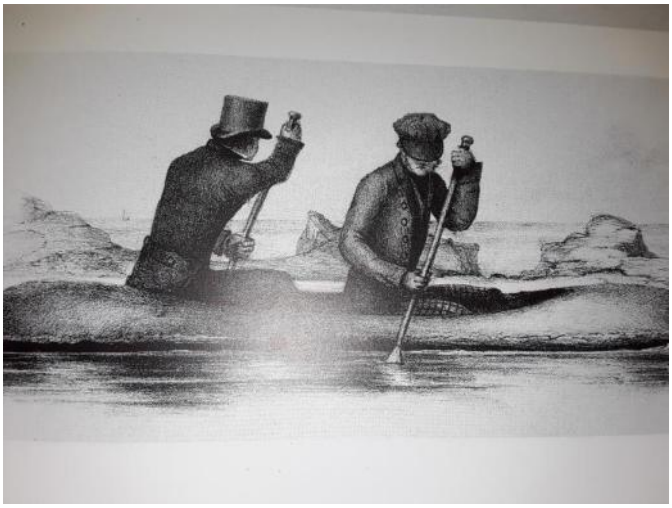
He took his boat cloak with him on Naval service testing it whenever the opportunity arose. He hoped to try it in the renowned rough seas of the Bay of Biscay but was frustrated in this as the weather was too calm.

News of the invention spread -- the New Zealand Chronicle, under the heading 'A Boat, A Cloak, An Umbrella and a Walking Stick' claimed that it could be inflated in three and a half minutes and would support 6 or 8 persons. Experiments found it impossible to sink or overturn it, although filled with water and holding 6 persons.

The British Admiralty thought the 'invention extremely clever and ingenious" but did not consider it applicable for the Naval Service.

However, many well-known explorers (including Naval Officers) endorsed the idea, especially when Halkett developed a new model dispensing with the cloak aspect, favouring a boat that would fold up and fit in a small knapsack weighting 7.5 lbs. Deflated it could be used as a waterproof groundsheet.





Two-man boats

John Rae of the Hudson Bay Company enthusiastically recommended the boats as essential equipment on any land or sea expedition, at every opportunity. Navy men John Richardson, John Franklin and James Ross, and Frenchman Joseph Rene Bellot took Halkett boats with them. John Franklin donated one to George Simpson for use by the Hudson Bay Company.
John Rae was very impressed with the one he took to Repulse Bay in 1846 and reported that 'although in constant use for upwards of 6 weeks on a rocky coast it never required the slightest repair. If the rubber became stiff with cold there was no difficulty in warming it to soften the material'.
Rae, who always expected to live off the land where possible, used Halkett boats for setting fishing nets in lakes, and for ferrying people and goods across rivers.

Of all the Halkett boats used in the Arctic in the mid nineteenth century only 2 are known to survive. One is in the Hudson Bay Company Museum in Manitoba, and the other, given by John Rae to Miss Peace of Kirkwall, is in Stromness Museum, Orkney, deflated and looking rather sorry for itself – after all it is 170 years old.

But it makes up part of an imaginative display of Rae's travels, and a replica (inflated) is depicted showing Rae crossing the Coppermine River. He is using metal dinner plates for propulsion as the true paddles had been left behind by accident.

Here is a modern inflatable. Not much has changed since Halkett made his – even the inflation valves are very similar. Halkett's had 4 compartments in the tubes, so if one was punctured there was still some buoyancy – that is still the same, though now most have a fifth air compartment underneath along the keel.
The versatility and durability of inflatable boats led to the current situation where millions are used as workhorses in industry, tenders to all manner of shipping, rafts for the rapids of the Grand Canyon and the safe way to put thousands of tourists ashore in the Arctic and the Antarctic.
Others were involved in their development but Peter Halkett is generally credited with designing and producing the first successful inflatable boat. And John Rae's enthusiastic endorsement could have made him the marketing manager.

Edinburgh University East Greenland Expedition 1976

David Broadhead

After much searching, I managed to find the original 15 page expedition report, laboriously typed out on my little portable typewriter. The following excerpts give a flavour of the trip.

The four members of the Expedition spent just over five weeks in the Northern Staunings Alps of East Greenland (Scoresby Land region, 72 degrees N 42 degrees W) from 20 July to 27 August 1976.

David Broadhead and Mungo Ross made a collection of 61 species of Arctic plants in the form of dried herbarium specimens and colour slides on behalf of the Royal Botanic Gardens, Edinburgh.

Anthony Walker and Andrea Mountain collected over 60 samples of moraine material from the whole length of the Berserkerbrae Glacier on behalf of the Geology Department, University of Dundee.

Together the members of the Expedition completed an extensive tour through the mountains on foot, crossing seven glacier passes, including two hitherto uncrossed.

We chose the Staunings because of ease of access, involving a scheduled flight from Glasgow to Reykjavik and then a private charter to Mesters Vig. The area had a reputation for good weather and even a guidebook, Donald Bennet's "Staunings Alps" (West Col 1971). Following several changes in personnel our links with the University of Edinburgh were slight and our budget much reduced. Brief biographies revealed that:

Anthony – Engineer……following 3 previous expeditions to East Greenland, Mesters Vig is almost his second home.

Andrea (better known now as Mrs Douglas Anderson) – *Biology teacher……. meticulous in organising our sumptuous rations but never quite made it as expedition cook.*

Mungo- Pipe liner……continuously taking photographs of someone or something. Insisted on carrying the heaviest rucksack.

David- another Biology teacher ……. insisted on carrying the lightest rucksack and being woken up with a cup of tea.

Arrival at Mesters Vig

One of the consequences of our meagre budget was that we could only afford one charter flight in a very small Cessna so most of our food was sent via Copenhagen to be delivered by the icebreaker "Nella Dan" on her annual visit to restock the base at Mesters Vig. Waiting for her arrival gave us the opportunity for a quick sortie into the mountains and a chance to get to grips with our scientific work. Apart from Andrea, we all had previous expedition experience but still had much to learn:

Carrying loads on glaciers was considerably eased using small plastic "kiddies" sledges, obtainable from toy and sports shops (but not so easily in July).

We found several abandoned pairs of simple French snowshoes. Although we carried them on our glacier tour, they were only useful on one occasion, in particularly soft fresh snow.

Mosquitoes were a persistent nuisance on the tundra on windless days and we were constantly trying to reduce the irritation. David and Mungo preferred constant vigilance and a sharp lethal slap rather than the evil tasting, eye stinging repellent favoured by Anthony and Andrea. A mosquito coil burning in the door of the tent was also very effective.

Slightly later than anticipated the pack ice broke up, our food supplies arrived and we were ready for some serious mountaineering. Unfortunately, the weather was giving us cause for concern:

Lunch on Skjoldungebrae Glacier

We were unlucky to experience unsettled weather for the whole of our stay. While we were never hindered by the weather, with plenty of fine days, these were interspersed with days of low cloud, rain and even snow. Although we did not experience any strong winds or storms, falls of fresh snow discouraged us from attempting to climb any peaks from our camp on the Berserkerbrae. However, to our benefit, the exceptional weather had restricted the melting of winter snow from the surface of the glaciers, safely covering most crevasses and reducing the difficulties encountered by some previous parties in crossing the Skel river.

Mungo + sledge Skjoldungebrae Glacier

While waiting in Reykjavik we had met up with Dr Keith Miller who showed us slides of his ambitious North-South ski traverse of the Staunings, accomplished the previous year. This gave us the idea of an alternative to attempting peaks which turned into a very enjoyable ten-day tour of sea shore and glacier, involving some challenging exploration and route finding. My report finished with the following impressions:

Despite disappointing weather, three newcomers were very impressed by the Northern Staunings. The ever-attractive combination of mountain and fjord, with the bonus of magnificent glaciers set against an ever-changing sky were a constant stimulus. Despite the proliferation of flowers, animals and birds rushing through the brief summer into autumn, there was always a slight air of desolation and loneliness. Apart from the few Danes seldom venturing far from Mesters Vig and a small Cambridge party further south, we were the only people in the area. This arctic wilderness now has the status of a National Park, with protection for its fauna and flora. However, the slight human contact so far has

Overnight camo SkjoldungebraeGlacier

left unsightly traces everywhere. While the remains of abandoned mining efforts are confined to small peripheral areas such as Blyklippen, many expeditions deep into the mountains have also left their remains scattered carelessly around. Although we were glad of the convenient path through the Berserkerbrae moraines and the level tent sites at Sun Valley, other relics such as heaps of rusting tins were not so welcome. Along the shores of Alpefjord the proliferation of international flotsam and jetsam made fascinating beachcombing but much of the debris well above high water looked suspiciously like expedition rubbish, a permanent record of thoughtlessness.

These freshly recorded impressions remain undimmed 45 years later. During my teaching career I gave many slide shows to my classes of various mountaineering expeditions, usually before Christmas but the account of this Greenland trip was by far the most popular.

Travels in Siberia

Kate Lea

I was slightly apprehensive in 2015 about our trip down the Lena River in Siberia after reading books entitled '*River of No Reprieve'* and '*Strong Current Running'*, but it turned out to be a fantastic trip.

After a few days in Moscow (Aivazovsky Exhibition at the Tretyakov) we flew seven hours east to Yakutsk, capital of the Sakha Republic (Yakutia).

Sakha is an autonomous region in the Russian Federation, the size of India but with less than a million people – mainly ethnic Yakuts and Russians. It is an area of permafrost with an extreme climate ranging from minus 70 degrees in winter to plus 40 in summer. Fortunately for us most of the time it was a fairly balmy plus 20 degrees with sunny periods!

*A **Panorama of the Lena River***

The Lena river flows 1800 miles from the Baikal Mountains to an enormous delta of 40 islands emptying into the Laptev Sea (Arctic Ocean). Our boat, the *Mikhail Svetlov,* makes four trips each summer after the ice melts. It is a comfortable, well run boat with helpful staff and excellent local food. We were the only passengers from quote *'that remote island in the Atlantic*!' However, many passengers spoke English and a young Sakha guide. who spoke Sakha, Russian, English and Chinese was with us for the whole trip. Gennadi was able to translate shamanic rituals, beliefs and blessings when we called at settlements, explain Sakha culture, and answer all our questions. He was also great fun.

Shaman

Most of the area is fairly flat taiga with distant views to the Verkhoyansk mountains – acres of trees with occasional clearings with cattle or horse farms, merging into treeless tundra nearer to the ocean. Settlements are few and far between. Surprisingly there was little wildlife or birds throughout.

One of the Lena Pillars

After a few days up-river to see the fantastic Lena pillars and receive a shamanic blessing we sailed down river again to visit a farm where bison had recently been reintroduced from Canada.

Our first settlement was Zhigansk and here the Evenki (one of several indigenous tribes) performed a greeting ceremony and entertained us with traditional songs and dances. This was the largest settlement visited (3000) with a restored Orthodox Church and small museum.

Panorama of Zhigansk

At Kyusyur the men engage in reindeer husbandry and the women make beautiful traditional clothing made from reindeer skin and decorated with fur and beads. Here, and at Siktyakh, we had folk concerts, tasted the local foods – pancakes, reindeer (horse) meat, fish and berry-based dishes. Sakha is a very rich republic – diamonds, gold, silver, coal, oil, etc but little revenue trickles down to these small settlements and the locals survive mainly on fishing and hunting. It was very noticeable that the further we got from Yakutsk the settlements became increasingly run down.

Folk Dancing

Tiksi on the delta was a strange slightly forsaken ex military town still with passport control, with an interesting unreconstructed museum.

There were days when the boat made no landings but we were never bored – learning Sakha handicrafts; Khomus (Jew's harp) lessons; playing Yakut table games (Khabylyk); Russian lessons (failed miserably); watching films and attending lectures. Every evening we had performances and for me the highlights were two singers from the Yakutsk Opera and Dance Theatre, and Artur playing the Khomus and throat singing.

Several times the boat nosed into shore so we could explore the area, have a barbecue (schaschlyk) or join in a fire of friendship and receive a ritual blessing (algys).

Back near Yakutsk we visited Sottintsy open-air museum (Druzhba) with examples of Russian and Yakut wooden architecture, and had yet another feast including kumiss (fermented mares milk).

Yakutsk itself is a typical ex-Soviet town with some splendid new buildings for hosting the '*Children of Asia'* games, wonderful museums and galleries, and a renovated old city and church. Here the permafrost is 140 metres deep so buildings have to be built on stilts. At the Permafrost institute we wrapped ourselves in fur coats and descended 12 metres down amongst the ice crystals to look at storerooms of mammoth bones. Later we visited a '*permafrost kingdom*' – caves hollowed out of a hill filled with splendid ice statues, and we had a personal tour of the Mammoth Research Institute where they hope eventually to clone a mammoth. The tour of the Yakutsk '*Treasury*' was out of this world - three rooms of diamonds, gold and silver jewelry, and fantastic bone carvings.

Mammoth Research Institute

Permafrost Tunnel

We spent a long time in the Museum for Northern Peoples looking at the flora, fauna, artefacts, costumes and jewellery. However, the history section has been sanitised - no mention of the gulags along the Lena and Kolyma rivers.

Ostrov Stolb - One of the Gulags near the Delta

We had three days in Yakutsk but still lots to see so we were sorry to leave – Sakha really is a fascinating and unique place.

ERSKINE EXPEDITION TO NORTH-WEST SPITSBERGEN

JULY/AUGUST 1981

DIARY AND NOTES

RAY WOOLMORE

CHELTENHAM, FEBRUARY 2015

AUTHOR'S PREFACE

The diary, with its introduction, is a true transcription of the diary I wrote on the expedition, which was subsequently included as supporting written matter in my personal photographic album "Spitsbergen in Camera 1981". The Bibliography I prepared for the album is also included for interest. I have added some footnotes, mainly relating to my subsequent visits to Spitsbergen, one in 1995, in the Alla Tarasova, a small Russian cruise-ship, and the other in Fred Olsen's much larger cruise-ship, Balmoral, in 2013. My references relating to the backgrounds my fellow expedition members in 1981 (in the diary entry for 22 July), were, at the time of writing as far as I know correct. However, I should mention that, sadly, two of them, Angus Erskine and Mike Tucson, both past Arctic Club members, are no longer with us. Of the others Pat Sellar, like myself, is an active member of both the Arctic Club and the Scottish Arctic Club. Alec Erskine, Angus's son, a mountaineer, is still very much alive, and Pauline Bastow was on two subsequent Erskine expeditions with me, Qaanaaq, NW Greenland in 1986, and to Traill Island NE Greenland, in 1991. I am not aware of the subsequent lives of the other members of the expedition. MV Copious, Mike Tucson's boat sadly sunk (very slowly, enabling the safe rescue of crew and passengers, nearly all British Schools Exploration Society youngsters) after hitting an unmarked natural obstacle in Belsund, Spitsbergen, in 199? Sadly, many of Mike's personal possessions, including his own treasured Arctic Library went down with the ship.

The photographs and two sketches I have included with this version of my 1981 diary come from my Photo Album, Spitsbergen in Camera.

Finally, I must pay tribute to the late Commander Angus Erskine for his leadership and organisational skills enabling so many of us Arctic enthusiasts to partake in the many Arctic expeditions he ran after his retirement from the Royal Navy.

Ray Woolmore
February 2015

ORIGINAL (1981) INTRODUCTION TO THE DIARY

Early in 1981 I saw an advertisement by Angus Erskine for a small-scale tourist expedition to Spitsbergen, an Arctic archipelago between the latitudes of 76°N and 81°N of Norway which hitherto had been visited (apart from the resident mining community) in the summer only for a few days by luxury cruise liners or for much longer periods by scientific or climbing expeditions. I felt that this was an opportunity not to be missed; my copy of Seton-Gordon's book "Amid Snowy Wastes", an account of an Oxford University expedition to Spitsbergen in 1921 had been well-thumbed for several years, and in 1976 the late Peter Mackenzie, amongst many other posts, the NCC's warden on the Scilly Isles, had shown me some superb slides taken when he and his wife visited Spitsbergen on a cruise liner in the previous year. My appetite was already whetted, and I telephoned Angus Erskine to find there was one remaining place, which I immediately booked.

Angus Erskine, a retired Commander in the Royal Navy, and the* President of the Arctic Club, had spent much of his service life in the Arctic, as well as Spitsbergen, and for several years since his retirement had organised small-scale tourist expeditions to the Arctic; but 1981 was the first time he had ventured to organise such expeditions to Spitsbergen. He arranged for two groups to fly out via Norway to the so-called "capital" of Longyearbyen, and thereto immediately board a 70ft motor yacht, Copious, skippered by Michael Tucson, a very experienced seaman and member of the Arctic Club, also a lecturer in surveying for much of the year. The plan was for Copious to motor round the north-west coast, stopping every day to let members of the expeditions ashore escorted by Angus Erskine, to walk, photograph wildlife and to generally enjoy the scenery and visit various historic sites. An approach to the polar pack-ice was to be made in the hope of seeing polar bears. I was booked on the second trip from 21 July to 4 August. This book** contains most of the 400 or so photographs which I took on the expedition and also an account of the trip from my diary.

* As a post 1981 correction, I should say that "a" should replace "the" as the tenure of Arctic Club President lasts just one year.

** This introduction was, of course destined for my Photo Album, with its supporting diary.

THE DIARY

Tuesday 21 July

Apart from Angus Erskine who was already in Spitsbergen, having led his first expedition, all of the expedition members met at Tromso Airport in the late evening. There were nine of us; Esme Speakman, from Argyll, Peggy Mead from Wiltshire, Ruth Jardine from South Africa, Pauline Bastow from Cleveland, Pat Sellar from Surrey, Alec Erskine (Angus's son) , and Clinton and Jackie Geiser (Swiss but living in Surrey). Soon after midnight we boarded the weekly jet aircraft which flies to and from the "capital of Spitsbergen, Longyearbyen, carrying coal-miners and their families, administrators, and members of various scientific expeditions. After what seemed a relatively short flight, we saw the sunlit but icy archipelago below us, and at 2.30am landed at the long airstrip by the side of Adventfjorden. Angus and the home-going party met us in the cavernous air-terminal (where I briefly said hello to the Chairman* of the Countryside Commission for Scotland, Jean Balfour). Once the paperwork was complete we walked across a hundred yards of wet tundra to the fjord, where we were ferried by a dory with an outboard motor across to Copious, our home for the next fortnight. Before settling down in our cabins we were introduced to skipper Mike Tucson and his two crewmen.

Copious left its mooring at about 9.00am, motoring across Isfjorden in good clear weather, with endless horizons of mountains and ice. We eventually anchored in Tryghama, a fjord on the northern side of Isfjorden, at about 11.30am. Using the dory we disembarked on a shingle beach on the eastern side of the fjord; and then walked up onto the morainic debris and sludge under steep cliffs. There was considerable evidence of landslides with great masses of bedded rock in the morainic debris. Masses of shells in the lower moraine could have been accumulated by birds over the centuries, but were more likely to represent the line of a raised beach and higher sea levels. Purple saxifrages were in full display on the moraine, also arctic poppy, mountain sorrel, drooping saxifrage, polar mouse-eared chickweed, a yellow draba, and a stitchwort. In walking to a small ice-covered lake we saw pairs of arctic skua mobbing kittiwakes, a few snow buntings; while by the ice strewn shoreline there were black guillemots and several male waders. It seemed that because of the lateness of winter in 1981 there were very few eider chicks. Islands normally free of ice, and used as nesting sites by eiders, were still ice-bound and joined to the mainland during the spring nesting season, enabling arctic foxes to cross the ice and take the eggs. On returning to Copious we saw our "first" little auk.

* John Arnott, similarly a member of the Countryside Commission for Scotland, was also a member of Angus's first party, and later produced a BBC Radio programme on that trip to Spitsbergen. Both Jean Balfour and John Arnott were to accompany me on later expeditions to Greenland organised by Angus.

After lunch on board we landed at about 2.30pm on the western side of Tryghama, just under the steep slopes of Alkhornet (peak of the auks). The flowers on the slopes below were varied; new species not seen before included melandrium apetalum, ranunculus pygmaeus, silene acaulis, and ranunculus nivalis. Some of us climbed up to the bottom of the main cliff face of the peak, where we saw, at close quarters, nesting kittiwakes and Brunnich's guillemots. Hidden in the recesses of the cliff were little auks, with their strange laughing cry reverberating from the cliff faces. The scree slopes beneath the main cliff were well covered in grasses, sedges, moss and various flowers being enriched by the droppings of the birds from above. After spending some time photographing the birds at the foot of the cliff, we came down the steep slopes, and looked across to the Russian mining settlement of Barentsburg, ten miles away on the southern side of Isfjorden. Lower down on the more gentle slopes above the fjord we visited a derelict old trapper's hut, which dated from at least 1933, according to the dates of the newspapers used as lining to the interior walls. While waiting on the beach below for the dory to take us back to Copious, we saw our "first" purple sandpiper and "first" glaucous gulls.

Wednesday 22 July

We sailed north at midnight, crossing the Forlandsundet, to arrive in the bay of Selvagen, on Prins Karls Forland at about 4am. Going ashore at 10.30am we explored the western, landward end of the bay which was still covered in ice, and accommodating about 30 seals, mainly smaller ringed seals with one or two bearded seals. Kittiwakes and eiders were also on the ice, while a pair of black guillemots swam in the bay. On a sandspit enclosing a lagoon we were dived on by arctic terns, clearly nesting in the vicinity.

Visiting a hut built by Professor Brian Harland during a Cambridge University Expedition in 1969, we met members of a Norwegian University Expedition who were then occupying the hut. Attracted by purple sandpipers darting around above the hut, my attention was drawn to the remains of two wooden coffins, probably marking the graves of Dutch whalers. The vegetation above the hut was varied. There were many moss flushes, waterlogged areas of solifluction mud, stone stripes and some quite dry areas. Purple saxifrage and mountain avens were locally abundant, while in some habitats there were mixtures of salix polaris and salix reticulata. The geology was particularly fascinating, with dykes and mineralised veins occurring in lines across the country rock.

After embarking again on to the Copious, we left Selvagen in the early afternoon to travel northwards through the extremely shallow (2 fathoms) passage of Forlandsundet en route to Kongsfjorden. The glacial scenery on the eastern side of Prins Karls Forland was most dramatic with wide massive glacier debouching straight into the sound topped by serrated, cloud-enshrouded, black peaks. The passage through the shallowest part of the sound was most exciting with ice-floes adding to the hazard of shallow water. Two

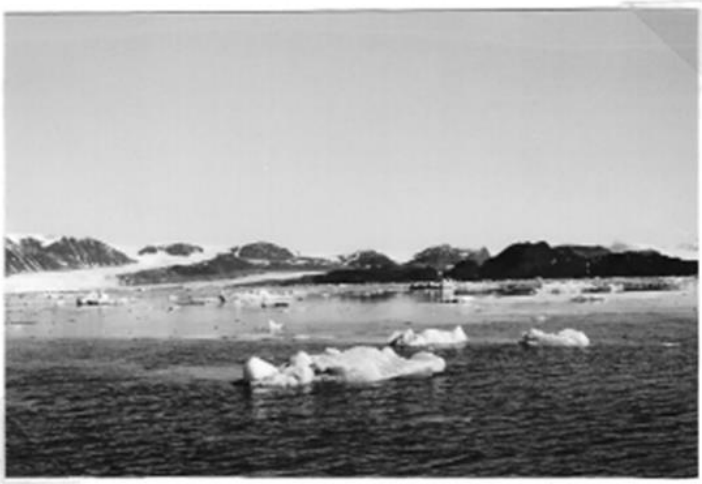
22 July 1981

Above – looking across Forlandsundet above Selvagen

Above – Grampianfjella peaks from Forlandsundet

23 July 1981

Above – Ny-Alesund wooden quay, SS Plancius and Copious



Above – The iceberg strewn Kongsfjorden

Above – Angus Erskine and Peggy Mead with dead Glaucous Gull

Above – Purple Sandpiper feeding in Kongsfjorden shallows

Above – Alec Erskine and Garrett steam engine at London

Above – Arctic skua near London

Above – Pat Sellar filming from dory in Kongsfjorden

weeks previously Copious had been unable to pass through the ice-covered sound; and we were told that we were the first boat able to pass through the sound that year. The massive glaciers of the Murraybreen and the Buchananbreen, and the peaks of the Grampianfjella were extremely photogenic, and I took several photographs. To add to the experience dark grey fulmars, puffins and little auks periodically passed across our bows.

Eventually we left the northern tip of Prins Karls Forland to the west, and turned eastwards into Kongsfjorden, to anchor beside the wooden quay* at Ny-Alesund, an old coal mining settlement, finally abandoned after a disastrous coal-gas explosion in 1960, and now a permanently inhabited research station of the Norsk Polar Institute (the Norwegian Polar Research Institute). In the inter-war years it was famous as the starting point of airship and aeroplane expeditions over the North Pole. Our first foray** into the settlement was to the shop, which has been established primarily for the brief summer cruise-liner trade, and here at 8pm we bought various maps and other publications on the geography and flora and fauna of Spitsbergen. The walk to and from the quay to the shop was quite interesting, as we were all swooped upon by aggressive arctic terns, resenting our passage near to their nesting grounds. A few grey phalaropes also appeared near the road. The weather that evening was glorious and we spent an hour or two on deck just sunbathing, looking at the huge glaciers and colourful peaks at the head of the fjord, and listening to Sibelius symphonies being played over the ship radio.

Thursday 23 July

Leaving the boat in the morning, and again braving the attacks of the arctic terns, we walked through the huts of the settlement past the bust of Roald Amundsen, to the memorial commemorating the first airship flight over the North Pole in 1925 by Amundsen and the Italian General Nobile. General Nobile was not referred to in the memorial, an indication of the intense national rivalry between the two explorers. A few hundred yards away is the very Italian memorial to General Nobile's ill-fated airship flight in "Italia" in 1928.

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* When I visited Ny-Alesund on Fred Olsen's cruise-shop, Balmoral, in 2013, I saw that the quay was derelict, and had been replaced by a concrete mooring quay large enough to take cruise-liners, like the Balmoral with its 1,700 odd passengers.

** Though early cruise-ships had voyaged to Spitsbergen at the end of the nineteenth century, visits by cruise-liners had multiplied in number since my first 1981 visit, and in 2013, special management measures had to be put in place ie ropes and wardens stopping passengers wandering away from the roads, before the 1,700 passengers, including myself, could land. The research stations of several other countries, including India and China, have also been established at Ny-Alsund, so there is a large summertime population of research workers, some of whom were used in 2013 to "manage" cruise-line visitors. It is believed that from 2015 onwards only small ships will be permitted to visit the settlement.

All that remains of the airship terminal is the prominent mooring mast*, now a national monument. Nearby the mast Angus Erskine showed us the remains of a fox trap, based on the dead-fall principle. Most of Kongsfjorden was dotted with small ice-bergs which had calved from the massive glaciers at the head of the fjord. Wildlife was abundant; three barnacle geese were feeding just below the monument, while on the strand, feeding in about one inch of water, were numerous purple sandpipers and a few ringed plovers. A little way out from the strand was a long line of twenty or more long-tailed ducks. Eiders gathered on sand spits, while glaucous gulls, kittiwakes and a few arctic skuas wheeled overhead. A white whale just broke the surface of the water, while seals bobbed up every so often to gaze at the human intruders walking just above the strand. Several "new" flowers to the expedition were found in this area including cassiope tetragona, saxifrage aizodes on the coal-waste tips, draba micropetala and braya purpurescens.

In the afternoon we sailed across the berg-dotted Kongsfjorden to the Blomstrandhalvoya peninsula, to a harbour known as London. Here were the relics of an old marble quarry; a Garret steam engine made in Leiston, Suffolk; a Taylor-Hubbard crane from Leicester, the bed of an old railway line and two brightly coloured wooden houses in good condition. Above London we climbed the lower slopes of the ice-eroded hill to look for ptarmigan, although these were only seen by one of the party who climbed to over 1,000 feet. Two arctic skuas, however, were nesting and dived on us in a friendly way. Roche-moutonees with the plucked side on the North-West and the smooth polished side on the South –East characterised much of the hill slope on the peninsula, and there were massive erratics perched everywhere. On the return journey across the fjord Pat Sellars, one of the top amateur natural history sound recordists in Europe and a talented movie photographer, boarded the dory and took some superb shots of Copious moving across the berg strewn fjord. While we had visited Blomstrandhalvoya a small Dutch cruise-ship, SS Plancius had arrived at the Ny-Alesund quay; the captain was well known to both Angus and Mike Tucson and after dinner we spent a pleasant few hours watching films and drinking on Plancius before sailing at midnight.

Friday 24 July

Copious sailed north along the coast of Albert I Land, eventually anchoring in Magdalenafjorden at about 6.30am. A summer cruise-liner, SS Vistafjord, was already in the fjord, historically a visiting place for Arctic cruise-ships since the 1890's. Before we ourselves landed at 10am we watched hundreds of elegant, well-heeled passengers being landed on the sandy-spit by means of two large covered launches. Once landed they were entertained by the ship's band and an imitation polar bear! Hot gluhwein was served**, and as

* In 2013, ropes and wardens prevented cruise-ship passengers venturing the ½ mile or so to the mooring mast.

** Though my diary entry reflects my then amusement at these antics, I must admit that in July 1995, when I visited Magdalenafjord with 100 or so passengers on the Alla Tarasova we all enjoyed sitting down on benches and drinking gluhwein!

24 July 1981

Above – Promenade of Vistafjord passengers at Magdelanafjord

Above – Pat Sellar under the glacier snout of Gullybreen

26 July 1981

Above – Pick up by dory in Raudfjorden pack ice

we landed we were offered glasses of this restorative drink. On the highest spot on the sand spit, also an arctic tern colony, was a memorial to all the seafarers of various nations who had lost their lives on the shores of Spitsbergen since the sixteenth century, mainly the crews of whaling ships. Leaving the incongruous crowds at the sand spit our party walked westwards along the coast to the next bay at the head of which the glacier, Gullybreen, calves directly into the water. Above us on the cliffs and scree were thousands of little auks buzzing around like swarms of midges. Also in the bay was the first eider chick we had seen plus a huge yellow-brown bearded seal sitting on a small ice-floe. Some of us walked to right under the snout of the glacier where crevasses exposed a glorious blue-coloured ice. We then climbed on to the dead ice at the side of the glacier where there were several kame-like features and many rocks and stones on the ice. Returning down through the debris of the lateral moraine we discovered a rock garden of colourful flowers including brook saxifrage and a tall Lapland buttercup. Arctic skuas flew about the spit, now vacated by Vistafjord's passengers, while black guillemots cruised around the ice-floes in the bay. After the departure of Vistafjord and lunch, we took a closer inspection of Wagonway glacier at the landward end of the fjord and then sailed out of the fjord, passing yet another cruise-liner Europa. Our cruise northwards continued, with Danskoya as our immediate objective. Passing through Soragattet, the strait between Danskoya and the mainland, we saw about twenty Barnacle geese on a small island which is one of the fifteen bird sanctuaries established in 1973. Once through the strait we entered the really Arctic-looking Smeerenburgfjorden, where our boat had to slow down to pass through an area of ice-floes and bergs before reaching our anchorage in the sound, Danskegattet, between Danskoya and Amsterdamoya. I took two pictures on this icy passage looking south to Scheibreen and others looking towards the massive glacier of Smeerenbergbreen. Once anchored we retired early to our cabins because of rain and a fast falling barometer.

Saturday 25 July

We woke to wind, rain and low cloud, and so delayed our morning trip to the ill-fated Andree's balloon base on Danskoya. When we did eventually leave the boat, the short haul in the dory was quite choppy, but we landed with ease, and then walked to the site where Andree based his hydrogen gas balloon in 1896 and 1897. In July 1897 Andree, with two companions, left Danskoya in his balloon "Eagle" in an attempt to reach the North Pole. They were never seen again, and their fate was a mystery for 33 years. However in 1930 their bodies were found by a Norwegian sealing ship on Kvitoya, about 250 miles to the east. Their story was found in Andree's Diary: the balloon had crashed on the polar ice after 65 hours in the air, and the men had walked south over the polar pack ice to Kvitoya. "The Andree Diaries", in my own collection, is now one of the classics of the literature of polar exploration. In 1906 and 1907, Walter Wellman, an American, used Andree's base, as the base for his own airship "America". Two 1907 attempts to reach the Pole failed and Peary's success in 1909 made Wellman abandon his third attempt to reach the Pole. Most

of the debris and ruins on the site date from “Camp Wellman” rather than from Andree, though in 1958 the Swedish Navy erected a monument surmounted by an anchor to Andree on the site. Broken wooden barrels of scrap-iron debris were still scattered around. Presumably sulphuric acid was poured on to the iron debris to produce hydrogen (for both Andree and Wellman?); and the huge broken earthenware pipes also scattered around probably held the acid. A great mass of wooden debris between two lines of stone cairns topped by iron hooks was probably what was left of “America’s” hangar.

To the west of the site was a cliff buzzing with little auks, and black guillemots were nesting in the rocks below the base. We left the base to walk round the rocky coastal strand to the next valley westwards. Here we saw several arctic skuas , and a reindeer yearling, which at times was being dived on by the skuas. Offshore were eider ducks with their chicks and a lone puffin.

After lunch we sailed out past Smeerenberg (blubber town) in the seventeenth century a Dutch whaling settlement of over 1,000 population, now with scarcely any remains, and went into quite rough water in Fairhaven between the islands of Fuglesangen and Fygloya. We anchored in a mainland bay in Svenskgattet, overlooked by a small corrie glacier which calved into the sea. En route we encountered many little auks and “grey” fulmars. The dory trip ashore was quite a cold experience, and after an equally cold walk in deep snow (where there were several fox tracks) and glacier debris, Pat Sellars and myself decided to climb up to a little auk cliff that looked reasonably accessible. Pat recorded the bird sounds while I took several pictures. After an hour or so of studying, recording and filming the little auks at close quarters, we carefully descended, and met the others returning from a meeting with a party of Russian geologists who were encamped just round the corner. All the party returned to Copious at 7.30pm, where a superb dinner of Spaghetti Bolognaise and apple crumble was very much appreciated.

Sunday 26 July

After picking up petrol left at a depot on Oyane at 8am, we set course for the pack ice due north and crossed the eightieth parallel of latitude. We then steered due east for Moffen Island, but soon encountered the crumpled edge of the pack, with its strange noises of rushing and rasping reverberations. Unfortunately no polar bears or walruses were seen, only a few bearded or ringed seals. Fulmars, little auks, kittiwakes and black guillemots were all present at the ice edge.

After attempting to find a lead of clear water through the ice so that we could reach the fjords further east (and deliver a much needed barrel of petrol to the Cambridge University expedition, in Wijdefjorden), the captain decided to turn back south to Raudfjorden and try again the next day. The voyage back was through a perfectly calm sea, and the crew served us a superb soup and pizza lunch on deck.

We arrived in Raudfjorden about 4pm, and disembarked on its eastern shore next to a small motor boat belonging to the Russian geological party. We intended to climb a minor peak to the south of Biskayerfonna. First we crossed a low water-logged area behind a sandy strand and lagoon, the nesting ground of arctic terns, and then climbed over snow and rough ground to near the top of the minor peak. Svalbard poppy, moss campion and purple saxifrage were common on the better drained ledges. Only two of the party ascended to the top of the peak, while the rest of us went to the saddle of the ridge which overlooked a frozen lake draining to Vesle Raudfjorden, the next fjord eastwards. From this saddle we could see clearly to the peninsula of Reinsdyrflya, at the entrance to Woodfjorden, apparently ice-bound. Turning back we heard the sound of Copious's hooter, and looked down to Raudfjorden to discover that it was fast filling with ice, and that our original disembarkation point was already ice-bound. We quickly descended to a point further northwards, but Tim in the dory still had problems in finding an ice-free channel from the Copious to the shore. Eventually he reached us and then took all ten of the party in the dory as the situation was getting critical. The Russian motor boat was now left trapped a few feet above the ice-covered fjord.

Once we reached Copious Mike immediately steered northwards to avoid the same fate as the Russians, and we eventually anchored under Hamiltonbreen, on the western shore of Raudfjorden. Before retiring to our cabins we enjoyed a marvellous roast-beef dinner and spent some time gazing, from the warmth of the small lounge-bar, at hundreds of guillemots, little auks and kittiwakes packed on a rocky turret just above our anchorage.

Monday 27 July

A few of us went ashore at about 11am accompanying Tim and Mark who were seeking unfrozen fresh water for the ship's tanks. I was given the captain's rifle so that the Norwegian regulations on separate parties carrying guns to ward off polar bears were complied with. The rest of the party with Angus Erskine (and his revolver) were landed further along the coast. Our smaller party climbed up a grassy scree under the rocky turret to get a closer look at the Brunnich's guillemots on the narrow ledges of the turret. Unfortunately we could not get very close as the scree was extremely loose, and likely to career down the slope, as one rock did, hitting my discarded rucksack*. The dark green vegetation under the scree appeared to be mountain sorrel and buttercup, presumably ranunculus acris, but could have been sulphureous buttercup.

* What I did not record in my diary, as I was clearly then feeling very guilty and embarrassed, was that the rock also hit the telescopic sighting mechanism of the rifle, left with the rucksack. Mike Tucson was very upset when he discovered this, but Angus persuaded him that it was very much an unfortunate accident.

While attempting to photograph the guillemot colony a fine antlered reindeer came trotting across the snow, passing very close to me to avoid others of the party below. I hopefully took two or three pictures of the reindeer. Once down below, in rain, we found an ancient fox trap and other members of the party decided to take photos of me with the gun. We were picked up about 1pm.

In the afternoon Mike again took Copious into the pack ice hopefully searching for a gap between the pack ice and the coast. Although we were unsuccessful in finding the gap, we did find a superbly large ice floe, to which Mike moored the Copious. Everyone ventured on to the ice, taking pictures of Copious and other members of the party. It was roughly in this area where Nansen's Fram came out of the polar pack in 1895, after attempting for three years to drift through the pack to the North Pole. Wally Herbert was also picked up from this area after his epic trek to the North Pole.

In the evening, a party of four, Angus and his son, Alec, Pat Sellars and myself were landed by dory on the northern strand of Reinsdyrflya, with the immediate and urgent objective of climbing the nearest peak, Skjoldkollen (479m) to ascertain whether the pack-ice was blocking the northern entry to Woodfjorden and Liefdefjorden. Crossing the flat tundra of Reinsdyrflya was harder than Angus and Mike had anticipated, with wide shallow rivers, and treacherous patterned ground for two to three miles. After getting our feet up to our knees truly wet and cold, but not frozen, we eventually emerged in the drier but partly snow-covered foothills of Skoldkollen. En route we had seen a few reindeer, a flightless pink-footed goose, and several red-throated divers which were attracted by the myriads of shallow lakes in the area. We then got down to the serious business of climbing Skjoldkollen, first ascending a fairly easy ridge. From the ridge we looked across to some steep crags with a bright green patch below housing an inland fulmar colony. As we were climbing fulmars flew over en route to their colony. Once on the top of the ridge we looked eastwards and saw a narrow ice-free channel along the coast giving access into Woodfjorden and Liefdefjorden, both of which were ice-free. In the far distance we could see the lagoon of Moffen Island completely ice-bound. On the ridge top were purple saxifrage, ranunculus pygmaeus, various draba and svalbard poppies. After making radio-contact with the ship we descended down scree with red crags to our left, and then back across the wet, cold wastes of Reinsdyrflya, seeing more reindeer and red-throated divers. We arrived back on the cold strand, with its plastic cups as well as driftwood, at about 2.30am, and radioed the ship. The ship had drifted further out because of the ice, and Mark in the dory took some time to find us, but we eventually arrived back on Copious at about 3pm. Irish stew and red wine were waiting for us. The skipper was then woken up; and while the four of us retired to our cabins, Mike and his crew took Copious through the ice-free passage to Liefdefjorden without hitting a single floe.

Above – Pencil sketch of Hamiltonbreen above our mooring

27 July 1981

Above – Mike Tucson searching the way through the pack

Above – Copious anchored to an ice-floe

Above – Alec Erskine on Skjoldkollen looking over Reinsdyrflya

Above – Saxifraga oppositifolia – Skjoldkollen

Tuesday 28 July

At 10 o'clock we were put ashore at the spit of Worsleyneset, on the northern side of the entrance to Liefdefjorden, and we wandered around for 2½ hours over good dry ground on Reinsdyrflya, seeing reindeer, purple sandpipers, red-throated divers, eiders and arctic terns. In the lagoon at Worsleyneset we also saw a lone snow goose, somewhat unusual in Spitsbergen.

Just along the shore was a very cosy wooden hut, surrounded by a trip warning wire for polar bears, which was occupied by two Norwegians studying botany at Trondheim University. They told us that they had seen a polar bear in the fjord only the day before. While we were ashore Copious had run aground on a hidden sand bank, so instead of going aboard for lunch, lunch was brought to us. After some hard work by the crew and a change in the tide Copious eventually came off the bank undamaged. On the way back to the boat, in the dory, we passed a huge group of hundreds of flightless geese on one of the islands of Stasjonsoyane group. We were almost certain that these geese were pink-footed geese, for James Fisher and Peter Scott in "One Thousand Geese" had referred to the Stasjonsoyane as the most northerly breeding ground of pink foots.

We sailed westwards in Copious to the largest island in the Andoyane group were we landed at about 3.30pm. The island was bathed in bright sun and afforded magnificent views across Liefdefjorden and Woodfjorden, a huge amphitheatre of snow-covered mountains, glaciers, islands and fjord. On the generally dry island, though with only purple saxifrage, saxifrage caespitosa and mountain avens, we saw arctic terns in great numbers, pairs of arctic skua, red-throated divers on the lochans, pink-footed geese (feather debris everywhere showing that the geese were in moult), long-tailed ducks on the ice-covered inlets, eider ducks also on the edge of the strand, and kittiwakes fishing like arctic terns. Arriving back on Copious at about 6.30pm, we immediately noticed some small reindeer swimming across the fjord from the mainland to the island, about one mile. Tim and Mark took to the dory to rescue one very small reindeer which was in danger of drowning, and were successful in placing it on the island strand with its fellows.

Wednesday 29 July

At 7.30am we sailed south to Bockfjorden and anchored under one of the glaciers coming down from the huge Monacobreen. Two of our party, Pat and Alec decided to climb the snow-covered peak of Smorstabben, while the rest of us looked at the hot springs (warm rather) in the morainic debris between two glaciers. The vegetation was most varied; and we saw several "new" plants, including crysopteris fragilis (a fern), potentilla pulchella, horsetail, melandrium angustiflorum and pedicularis dasyantha. Most of the common varieties, purple saxifrage, dryas octopetala and polygonum were present in considerable

numbers. A skein of geese flew high overhead, but the only birds on the moraine were purple sandpipers and snow buntings. However, the moraine also accommodated ants and several gnat-like insects buzzing around.

After lunch on board four of us were taken by dory to the eastern side of Bockfjorden to the green deltaic deposits at Kap Kjeldsen under the red mountains of Kronsprinshogda. In this area we saw arctic skua, the footprints of polar bear in a soft clay deposit, faeces of arctic fox containing the bones of smaller animals and birds, and saxifrage aizodes as well as the more common plants. On the coastline were attractive but low red cliffs, topped by a carpet of fine flowers including moss campion. Driftwood was scattered along the beach and here and there were old fox traps. We arrived back at Copious at about 4.15pm followed half an hour later by Pat and Alec returning after a successful climb on mainly wet snow. They had experienced no real technical difficulty on the climb apart from the softness of the snow on the main ridge.

In the evening Mike started Copious on the long voyage up to the head of Woodfjorden. We rounded Grahuken without any problem from the pack-ice and safely entered the longest fjord in Spitsbergen, Wijdefjorden.

Thursday 30 July

After sailing down Wijdefjorden Copious anchored at the island of Bjornneshamma at about 3am. This was the main base of a Cambridge University Expedition under Professor Brian Harland, and in the morning the oil supplies we had been carrying for the Expedition were transferred by dory to the island. Our party went ashore at 10am and we discovered that the island was a classic "tombolo". Both of the solid rock areas were crossed by lines of volcanic dykes. The spit joining the two solid areas had several whalebones, as well as wooden boat wrecks on it. The flatter areas of the two rock islands were characterised by a great variety of vegetation and many nests of eider ducks and pink-foot geese. We identified fourteen species of flowering plants, including some superb examples of potentilla crantzii and stellaria humifusa. Arctic terns were everywhere (one of the objectives of the Cambridge Expedition was the study of arctic terns), and we found a nest containing two eggs. A family of purple sandpipers flitted along the short of a small lagoon.

After lunch on Copious we were put ashore just below the Russian hut on the eastern shore of Wijdefjorden beneath Grossfjell. The hut itself was exceedingly well-built of wood, with quite superior accommodation, looking rather like an Austrian Alpine Club hut (apart, of course, from the portrait of Lenin!). Climbing above the hut on to a low, but dry, hill we discovered several plants "new" to our expedition, including the famous "spider" plant (saxifraga flagellaris) and a dandelion! The pedicularis lanata was very fine. On one side of the hill were several flat-bottomed dry canyons, probably glacial overspill channels, similar to those

29 July 1981

Above – Polar bear footprints – Kap Kjeldsen

1 August 1981

Above – Swiss National Day Dinner in Coplous – Ny-Alesund

in West Wales. The view southwards to the end of the fjord was in cloud, though some of the nearer peaks of the Atomfjella, like the Einstein group, and the Tryggvebreen glacier were close enough to be seen under the cloud.

Mike started Copious back northwards at 6.30pm and after dinner we gazed from the warmth of the lounge at the impressive glaciers of the Dei Tri Isfjella as we passed close to the eastern shore of Wijdefjorden.

Friday 31 July

By midnight Copious was back round Grahuken, but after passing the point of the Reinsdyrflya peninsula she ran into a great deal of pack ice. Those of us who were asleep were soon awakened by the noise of Mike gently nudging aside ice-floes with Copious's bow. After an hour or so Copious reached open, but rough water with a strong southerly wind blowing. The ensuing passage round the islands on the north-west tip of Spitsbergen was very rough, and it was not until we entered the shelter of Smeerenburgfjorden, between Danskoya and the mainland, that it was possible to have breakfast. After this brief interlude of calm Copious again ventured into the open sea; and it became so rough that several of the party retired to their bunks. It was only several hours later, at 4pm, when we reached Krossfjorden, that we again experienced calm waters.

Eventually Mike anchored Copious in one of the inner bays of Krossfjorden, beneath the glacier of Tinayrebreen which calved smallish bergs into the fjord. Having been shipbound for twenty-four hours, we were all keen to land, and we started a long walk at about 5.30pm, while Mike, Tim and Mark successfully retrieved an anchor which had been lost by Copious in the same bay two weeks earlier. The land party soon blundered into a family of ptarmigan, with one female and eight chicks, which were virtually hidden by their natural camouflage. Leaving the ptarmigan we made for Camp Zoe on the strand; but before reaching it we found some crowberry, empetrum nigrum, which according to Seton-Gordon is rare in Spitsbergen. Camp Zoe, a small hut, was rebuilt by Norwegians in 1971, but had been in use for at least two decades before. There were two bunks in the hut and the stove was still alight. We arrived back at Copious at 8pm with the weather much calmer.

Saturday 1 August

We left our anchorage at 9pm and voyaged south-westwards to Ebeltoftodden, where just above the sandy strand is an area of several old graves, which the Norwegians have designated as a cultural monument. Some of the graves were being exposed by the erosive forces of the sea, and here and there were human

bones. Also in the area were the remains of a radio station and some old huts together with an upturned boat once used as a refuge. A small grey hut, large enough to house two, was clearly still in use.

On a low rocky headland nearby were two fluffy, but relatively large, glaucous gull chicks. These were still protected by their parents who dived on any over-ambitious photographers. On the landward slope of the strand we discovered mertensia maritima, oyster plant in flower, a plant which hitherto I had seen only on the north-western coast of Iceland. Upward from the strand, at the bottom of a low rocky cliff accommodating a few little auks and snow buntings, we found a number of "new" species of plants, including erigeron humilis (Highland fleabane), cardamine bellidi (a low plant), saxifraga hieracifolia (hawk-leaved saxifrage), the beautiful blue campanula uniflora and taraxacum brachyceras. I also took photographs of crysopteris fragilis, saxifrage nivalis and mouse-eared chickweed with calamogrostis neglecta. Coming down from the cliff we walked across a low mainly dry plain with much patterned ground (stone circles and stripes) in the lowest, wetter areas. On this area we saw not only purple sandpipers but also turnstones, two males and a female with several chicks. While waiting for the dory we saw an arctic skua mobbing a glaucous gull.

After lunch we sailed in gloriously clear and sunny weather out of Krossfjorden into Kongsfjorden, landing again at the quay at Ny-Alesund. We had time to go ashore for a few hours, and I decided to walk southwards along the strand, but apart from arctic terns and eider ducks there were few birds. Walking back we crossed an arctic skua territory, and after allowing us to photograph and sketch, the birds proceeded to mob us furiously when we walked. At 8pm we had a superb dinner of chilli con carne and apple pie to celebrate the Swiss National Day for Clinton and Jackie Geiser. Despite the onset of dense sea-fog we proceeded in the dory across the bay to a driftwood bonfire built on the beach by the crew. After enjoying fried sausage meat and potatoes, we returned back to the ship at 1am, still in dense fog

Sunday 2 August

Copious left Ny-Alesund at 2am still in thick fog; and because of the danger of going aground on the shallows of the Forlansundet Mike decided to take the open sea route on the western side of Prins Karls Forland. By breakfast we found ourselves in gloriously clear and calm weather sailing past the snow-free peaks on the western side of the Forland. Copious sailed into Isfjorden in the mid-afternoon, and after passing close to the Russian settlement and coal mines at Barentsburg we anchored at the entrance to Colesbukta still in beautifully clear and bright weather.

After going ashore we walked eastwards along the strand seeing almost immediately several examples of the oyster plant. Amongst the "new" plants we identified were lapland buttercup, cardamine nymanii and

2 August 1981

Above – Trapper's house or summerhouse, Colesbukta

Above – Pencil sketch of Oscar II Land from Colesbukta

cotton grass. On the western side of Colesbukta were several obviously used summer houses, while on the other side of the bay were the unsightly ruins of a disused coal mine. Here and there were old bore holes, presumably for coal, as well as "fossilised" vehicle tracks. One feature of this area was the wide coastal plain, characterised by an abundance of pedicularis hirstuta. There were several arctic tern colonies along the strand, and kittiwakes and purple sandpipers were also present in considerable numbers. The "new" bird of the area was the tiny grey phalarope which took advantage of the very calm waters in the gently shelving bay.

Before being picked up by the dory we met a Swedish walking party by a substantial trapper's hut. We discovered that they were walking round to Longyearbyen, and that on their trek they had walked into the Russian settlement of Barentsburg. While there they were informed that the total population of the settlement was 1,200 persons plus 600 pigs. In the evening we had our last full dinner on Copious, excellent roast turkey washed down with white wine, compliments of the captain.

Monday 3 August

Leaving Colesbukta at 8am, we sailed eastwards along the southern coast of Isfjorden, past the ruined coal mine at Grumantbyen, and then turned into Adventfjorden to eventually moor at the quay at Longyearbyen. It was quite a shock to see the ugly sprawling settlement, with its port, and many working mines as well as derelict ones. Walking away on the road from the port area we looked up at cliffs which despite the proximity of man were buzzing with little auks. On the floor of the valley only a few hundred yards from modern housing blocks, wandered tame reindeer, all marked with red tags. In the same valley under the gantry of an aerial coal conveyor we found the rare flower, polemonium boreale, the only one we had seen during our trip. Further along the road, in a converted miners' canteen we found the excellent Svalbard museum, which had only just opened. It showed all aspects of life in Svalbard, from basic natural features to the history of Svalbard, including photographs from the last war showing the ruins left after the German battleship Tirpitz shelled Longyearbyen in 1943.

We returned to Copious to a final lunch and to pack so that the crew could clean the boat in readiness for another party. Six of us, disappointed at not seeing any arctic foxes during our trip, hired a minibus to take us further into Adventdalen, where we were assured by the bus driver that we would see foxes at a derelict mine*. Unfortunately, no foxes appeared, (though we saw masses of cotton grass in the valley) and after returning to Longyearbyen I spent the rest of a sunny afternoon sleeping on some rocks.

* In 2013, while on a cruise to Spitsbergen on Fred Olsen's Balmoral, I took a guided walk to the Adventdalen glacier, passing this same (plugged) derelict mine, but as in 1981, saw no Arctic foxes.

Later in the evening we all met at the restaurant of the only hotel and there had an excellent steak dinner. Our plane to Tromso did not leave until 3.40am the next morning so we retired to the lounge of Copious, which moored in the fjord by the airport. At 1am we landed in pouring rain (the first of the whole trip) in the dory by the airport, quickly retreating to a café to await the plane. There we met Malcolm Ogilvie, of the Wildfowl Trust, who had been leading an expedition which had ringed 1,000 barnacle geese on an island in Belsund, further south. Our plane arrived on time, and after briefly meeting the incoming party which included two freelance natural history TV programme producers, we boarded the plane, with a few inebriated coal miners. I broke my homeward journey at Bergen before eventually returning to Aberdeen on 4 August and catching the last train south back to Cheltenham.

APPENDIX 1

SPITSBERGEN – A SELECTED BIBLIOGRAPHY

All the books listed below in the author's own collection*, only a few relate entirely to Spitsbergen; most only have chapters or parts devoted to the place.

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Eides, J W, Forlag (Arrangers and Publishers): "Svalbard – A Norwegian Outpost", English edition, J W Eides Forlag, Bergen 1950

Explorers Club: "Explorers Club Tales", (Vilhjalmur Stefanson – An Arctic Mystery (Andree) page 238), George Harrop, London, 1937

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Glen, A R: "Under the Pole Star – The Oxford University Expedition 1935-6", Methuen, London, 1937

Gordon, Seton FZS: "Amid Snowy Wastes", Cassell & Co, London, 1922

Hisdal, Vidar: "Geography of Svalbard", (Polar Handbook Nr 2), Norsk Polarinstitutt, Oslo, 1976

Hogg, Gary: "Airship over the Pole", Abelard-Schumann, London, 1969

Illingworth, Frank: "North of the Circle", Travel Book Club Edition circa 1950

Illingworth, Frank: "Wild Life Beyond the North", Country Life Ltd, 1951

Larsen, Thor: "The World of the Polar Bear", Hamlyn, London, 1978

Lovenskiold, Herman L: "Avifauna Svalbardensis", Norsk Polarinstitutt (Skrifter Nr 129), Oslo, 1964

McKee, Alexander: "Disaster in the Arctic – Ice Crash", Granada (paperback) St Albans, 1981

Ministry of Information: "Combined Operations 1940-42", HMSO, London, 1943

Mountevans, Admiral Lord: "Arctic Solitudes", Lutterworth Press, London, 1953

* In 1981; by 2015 that collection of Arctic books has grown considerably (space is running out!)

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Ogilvie, M A: “The Winter Birds”, Michael Joseph, London, 1976

Perry, Richard: “The Polar Worlds”, David & Charles, Newton Abbot, 1973

Phipps, C J: “A Voyage Towards The North Pole”, first published 1774, Caedmon Reprints, Whitby, 1978

Ridgeway, John: “Gino Watkins”, Oxford University Press, London 1974

Ritter, Christiane: “A Woman in the Polar Night”, trans by Jane Degras, Allen & Unwin, London, 1954, and Travel Book Club Edition 1955

Ronning, Olav I: “Sv` albard Flora”, (Polar Handbook Nr 1), Norsk Polarinstitutt, Oslo, 1979

Scott, Peter and Fisher, James: “A Thousand Geese”, Collins, London, 1953

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Tilman, H W: “Triumph and Tribulation”, Nautical Pub. Co, Lymington, Hants, 1977

Ward, Lock and Co: “A Handbook to Norway”, Ward, Lock and Co, London, circa 1930

Watkins-Pitchford, D J: “Sky Gypsy – The Story of a Wild Goose”, (Fiction), Eyre and Spottiswoode, London, 1942

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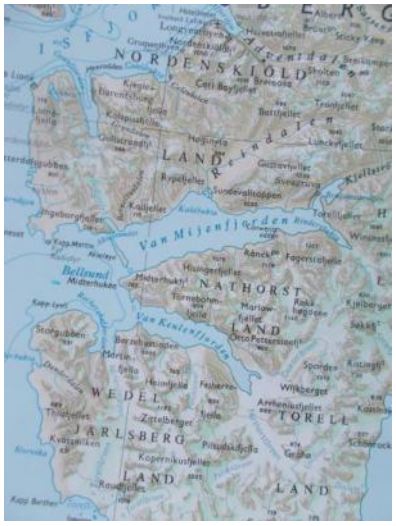
M V Copious – RIP Belsund, Spitsbergen

Bell Sound 1630

Louise Hollinrake

In 1630 English whaling ships of the Muscovy Company were sent to Spitzbergen in the Svalbard archipelago. After a successful whaling season, they were to rendezvous in Bell Sound where there was a good anchorage and a whaling station.



Then the fleet would leave together for the voyage home. August 20th was the deadline, considered the last safe date to avoid becoming beset for the winter.

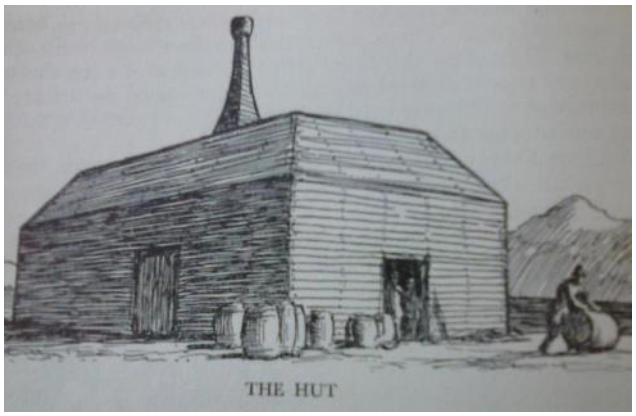
On August 15th, on the way to Bell Sound the captain of the whaler Salutation sent 8 men to shore in a shallop to hunt some reindeer for food on the homeward passage. This was in the region of Green Harbour. They killed 14 deer, planning to return to the ship with them the following day. However, fog came in and they realised they had little or no chance of locating the Salutation. In the words of Edward Pellham, one of the eight:
“And thus upon the fatal 20th of August, a thousand sad imaginings overtook our perplexed minds, all of us assuredly knowing that a million of miseries would ensue if we found not the ships whereby to save our passage home.”

Two men were dispatched overland to Bell Sound to catch the fleet before they left, but when they got there the Sound was empty.

“Well we knew that neither Christian or heathen people had ever before inhabited those desolate climates. We also knew that merchants had offered great rewards to any that would winter in those parts – and yet could never get any man to expose his life in so hazardous an undertaking.”

Hunting in Green Harbour they added another 7 deer and 4 bears to the larder, then they decided to row to Bell Sound, and arrived there on September 3rd.

There they found a substantial wooden hut built by the Dutch for coopers to live in while they made oil barrels. They decided to do everything they could to improve their chances of survival in this house.


THE HUT

They brought wood from smaller huts and a thousand bricks from furnace chimneys. They found 3 hog's heads of builder's lime and used this with shore sand to make mortar. With all this they built a smaller hut within the big one, then lined the spaces between the walls and ceiling with wood from the site, including seven unserviceable shallops. This gave more insulation and could be used as firewood later. The internal space measured 20 feet by 16 so they built 4 small cabins within it, for 2 occupants each .
While 6 were employed building the other 2 were preparing the venison to ensure its best chance of preservation.
Inside the hut was a stove for heat and cooking. By stoking up the fire around a piece of dense, green wood, it would stay in all night, bursting into flame when they opened the stove in the day time. The fire did not go out for eight months.

" Our beds were the deers' skins dried, which we found to be extraordinary warm, and a very comfortable kind of lodging to us in our distress."

By the 10th of October this work was completed. That brought different problems:
"With nothing now to exercise our minds upon, our heads began then to be troubled with a thousand sorts of imaginings. Then had we leisure (more than enough) to complain ourselves of our present and most miserable conditions, and to bewail our wives and children at home. Thus tormented in mind with our doubts, our fears and our griefs, and in our bodies with hunger, cold and wants, that hideous monster of desperation began now to present his ugliest shape unto us. We redoubled our prayers unto the Almighty

for strength and patience in these our miseries. By his assistance, therefore, we shook off these thoughts and cheered ourselves up again, to use the best means for our preservation."

They were anxious about having enough meat and enough fire to cook it. So they began to roast half a deer every day to store for the future, leaving enough raw to roast a quarter every Sabbath.

From October 14th to February 3rd the sun did not break the horizon. Until January 10th they found water under the ice on the shore. After that they had to melt snow and ice.

When they took stock of their food at the end of January it seemed it could not last more than a few weeks, making them fear famine and lose hope. They prayed three times a day and tried to dismiss despair.

February 3rd brought a change, when "the glorious sun, with his glittering beams, began to gild the highest tops of the lofty mountains. The brightness of the sun and the whiteness of the snow both together was such as to have revived even a dying spirit.
And also that day we saw a bear coming towards the hut, whereupon we straight, arming ourselves with our lances, issued out of the hut to await her coming."
The bear was hungry and threatening but they advanced on it with their 2 lances and managed to kill it. Then they had to rush inside to warm up before dragging the bear in to butcher.
This bear fed them for 20 days and was "much better than venison". More bears came into the vicinity and they saw at least 40, killing 7 of them. They were able to increase their food allowance and sometimes had 2 or 3 meals a day beginning to build up their strength again.

Birds began to return to the cliffs, and foxes followed. "For them we set up 3 traps like rat-traps, and baited them with the skins of fowls we had found upon the snow. We caught 50 foxes in them, all which we roasted and found very good meat."

They made catapults of whale-bone and caught "60 fowls about the bigness of a pigeon."

Every second day they went to the top of a mountain to see if there was any open water in the Sound. On May 25th it was very cold with an east wind, so they all stayed inside. Unseen by Edward Pellham and his friends, 2 Hull whalers came into Bell Sound, and a shallop came ashore.

“We were about to go to prayers. Thomas Ayers was in the outer hut near the door. The Hull men, now coming near our hut, hailed it with the usual word of the sea – Hey!
Thomas answered -- Ho!
This sudden answer amazed them, causing them to stand still, half afraid of the matter.
But we within, hearing them, joyfully came out of the hut, all black as we were with smoke, and with our clothes tattered with wearing. This uncouth sight made them further amazed at us: but perceiving us to be the very men left there all the year, they came with us into our hut.
We showed them the courtesy of the house, and gave them such victuals as we had, which was venison roasted 4 months before, and a cup of cold water, which for novelty’s sake, they kindly accepted of us.”

So the long ordeal was over. The whaling fleet arrived on May 28th and the commander, Captain William Goodlad, welcomed them aboard his ship. When the fleet sailed on August 20th they joyfully said goodbye to Bell Sound.

Modern Hut

Whaler’s Furniture

Edward Pellham’s account was written in 1631, sold in London shops, translated into Dutch and sold in Holland. It resulted in planned over-wintering by both nations.

Brooks Range Trips

George Beckett

Porcupine Caribou

In early June 2017, dropped off by a tundra-tyred bush plane on a gravel bar where the Ekaluakat River exits the foothills of the North slope of the Brooks Range in the Arctic National Wildlife Refuge. I began a south westerly meandering route though the mountains, crossing the Egaksarak, Leffingwell, and Aichilik rivers, passing loose herds of caribou from the main (200,000+) Porcupine Caribou herd on their way to their summer calving grounds on the coastal plain, with accompanying

bears freshly awoken from their winter sleep and hungry.

I followed the Jago river up to its glacier bound headwaters, scrambled over the 7,500 foot continental divide, then down to the Upper Sheenjek river valley, before circling around to a tributary of the East Fork of the Chandalar then heading back to my eventual pick point beside Double Mountain.

The Continental Divide

At around 130 – 140 miles in 16 days it wasn't a fast pace, I really didn't know what to expect, as most sources quoted 6-8 miles per day for fit folk due to the terrain and I erred on the side of caution. It meant there was plenty of time for evenings either spent climbing the nearby hills in the midnight sun, fishing or just sitting there taking it all in.

It was Stefansson, Leffingwell and Kantner that had bought me here, to a place the size of Scotland with no roads or tracks and just a couple of small Gwich'in and Inupiat villages on the periphery. It was an incredible experience and I vowed I'd be back to the Brooks.

August 2019. I set off from the Nunamiut village of Anaktuvuk Pass in the Gates of the Arctic NP on a more ambitious trip, greater distance with more ascent/descent, travelling at my usual pace with the use of a packraft to paddle some of the Grade II/III white rivers along the way. I was also interested in what range I could manage unsupported and with no resupply.

From Anaktuvuk Pass I paddled some challenging sections of the Upper John River to the Hunt Fork, before disappearing west into the mountains on a route designed to see as much of this part of the Brooks Range as I could. For days I didn't see another soul, just wolves, caribou, ground squirrels and eagles, following ridgelines and sticking to the high ground where I could, to stay out of the tussocks and keep the views.

Natat Lake was one of the highlights, the autumnal colours in the late afternoon sun, coffee on a small rocky promontory covered in discarded caribou and Dall sheep bones, Kutuk Pass was another, hard bare ground making for fast travelling whilst ravens harassed a couple of wolves searching for food beside one of the small lochans.

I joined the swift flowing Alatna river 20 miles or so downstream from Gaedeke Lake and paddled to the confluence of Arrigetch creek, heading into the majesty of the Arrigetch Peaks and the crux of the trip, the ascent of and descent from the backside of Ariel.

Ariel Summit

I was fogged in for a day in the Upper Arrigetch, fog that left a thin coating of ice and some snow at higher elevation when it cleared the next day. It made for a couple of heart stopping moments with a heavy pack and disco leg until I sat on the very airy summit. The descent was much the same, down climbing carefully on a steep scree slope with a 600 foot sheer drop on one side helping me focus.

The high passes from Awlinyak Creek into the Upper Noatak were somethings else entirely, it took almost 2 days to cover 9 miles across this boulder strewn section, rocks the size of family cars that wobble when you step on them and the frequent rockfalls bought to mind a certain Aron Ralston.

In one instance a shear rock wall several feet high at the top of a pass blocked the way with just a 4 or 5 foot gap at one side – Skinny Bou Pass it's called – with good reason.

The Upper Noatak was full of berries and beautiful, it took a couple of days walking until there was sufficient water to float and once in the packraft every corner turned provided another stunning vista.

There was another element too. Brown bears and lots of them, looking for spawned salmon. They swam across the river in the middle of the night close to my tent, patrolled the river banks one eye on me the other on the riverside, and on one occasion when I was paddling along close to the riverbank daydreaming in the morning sunshine charged out of the willows and nearly into the raft while I furiously backpaddled into the middle of the river, bear spray at the ready. The bear stopped on an overhanging set of willow roots woofing softly – irritated, watching me drift away down river.

Busy Riverfront

I left the Noatak 70 miles or so downstream and headed up through the stunning Nakmaktuak Pass, abundant with jagged peaks and limestone caves and followed the Ambler canyon to the head of the Ambler River, which is just the most pristine, wildest and most beautiful place I have ever set foot in.

Ambler River Headwaters

My intention was to paddle the uppermost sections of the Ambler before slowly floating to Ambler village around 80 miles away. I couldn't find much route data on the upper section, just one other 4 person group that had paddled it with fairly vague descriptions other than some of the sections had to be portaged. So, it was off into the unknown. Luckily by this time my load was fairly light and everything (apart from the bear spray) stowed away in the tubes. It was great fun, a totally exhilarating edge of your seat couple of days, boat scouting and running on sight, always with the thought that you were a long way from help at the back of your mind as a decision-making aid.

I made it to Ambler Village 4 or 5 days later, the Ravn airline check in lady was gutting and cold smoking Chum Salmon, subsistence food for the coming winter. That same evening, I was in Kotzebue at the Northwest Arctic Heritage Centre listening to Adeline Raboff, a Neets'aii Gwich'in lady from Arctic Village speak about the origins of some of the indigenous groups in this area. Adeline's ancestors were from the Upper Noatak, a region I had just travelled through – it was a nice link to finish the trip.

360 plus miles in 23 days, a stone and a half lighter and bruises on the soles of my feet that took six weeks to get the feeling back into. Looking forward to the next one.

Both the Arctic National Wildlife Refuge, specifically the 1002 area on the coastal plain and parts of the Gates of the Arctic are under threat from either oil or mineral extraction. The 1002 area is the heartland of the Porcupine Herds calving grounds and the proposed Ambler Road in the Gates of the Arctic NP would carve out a huge section of wilderness, impacting subsistence hunters and affecting water quality. Fortunately, strong opposition from the native and environmental protest groups seems to be having an effect, at least in the 1002 grounds, as growing numbers of commercial banks join the divestment movement and won't finance extraction in these areas.

Further details on both of the above trips can be found at alwaysnorth.co.uk