

## BAFFIN ISLAND: Field Research and High Arctic Adventure, 1961-1967 by Jack D. Ives

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## EXPANDING BAFFIN RESEARCH AND WIDER RECONNAISSANCE, 1963

After two full summers in Baffin Island, there was a great amount of data to work up, group discussions to be arranged, and decisions to be made concerning future plans. The number of permanent branch staff would have to be increased, and additional able and energetic undergraduate summer assistants would have to be recruited. It was apparent that at least one more season of concentrated work around the northwest end of the Barnes Ice Cap would provide very useful results and that the glaciological work on the ice cap should be expanded. In addition, plans were needed to extend the fieldwork into the eastern mountains and fiords as far as the Baffin Bay coast. This would require not only more staff but also an appreciable increase in our operational budget. It also seemed logical to pursue collaboration with other institutions, and especially university specialists, so as to ensure intensification of the interdisciplinary activities.

### Planning for lichenometric studies and glaciology fieldwork

For several years, I had maintained a regular correspondence with Dr. Roland Beschel, a botanist/lichenologist who had earned his DPhil at the University of Innsbruck, Austria, in plant ecology and physical geography. Dr. Erling Porsild of the Natural History Museum of Canada, who chaired the AINA Banting Research Fund, had originally put us in touch when we were both applying for Arctic research grants during the 1955–1956 winter. Roland, then a new immigrant, was on the faculty at Mount Allison University. He had sent me the early papers on his imaginative use of the growth rates of rock lichens as a means of dating rock surfaces, especially glacial moraines in the Austrian Tyrol (Beschel, 1957, 1961).<sup>1</sup> Following his suggestion, I had visited the British Museum in 1957 to examine rock lichen specimens, principally those of the *Rhizocarpon geographicum* group, members of which are especially slow-growing and long-living (i.e., over a thousand years). In London, I had also been able to discuss problems of species identification with the museum's curator. In 1960, however, Roland had accepted a faculty position in the biology department at Queen's University, in Kingston, so visits became much easier.

Roland was a fascinating and likeable, although very intense, personality and was a welcome guest at our new home, close to the Geographical Branch in Ottawa. He showed great interest in my discovery of the “lichen-free”<sup>2</sup> areas north of the Barnes Ice Cap and agreed to come north with me to validate the tentative

conclusions that I had made. This in turn led to his suggestion that we add to our 1963 field party one of his graduate students, Patrick (Pat) J. Webber, who had just completed his master's degree and knew how to identify lichens and work with fossil plant material. Roland proposed that Pat could then undertake plant ecological studies for his doctoral research. He would also be able to help us expand our use of rock lichens for dating the retreat phases of the Barnes Ice Cap—in all probability over a period of more than a thousand years. As a quid pro quo, such an arrangement would justify Roland's visit, both to inspect Pat's progress and to accompany me to Rimrock Lake to cross-check the interpretation of the "lichen-free" areas.<sup>3</sup> In ways such as these, the inclusion of faculty and graduate students from Canadian and European universities, as well as from disciplines other than geography, began to expand.

It was necessary to coordinate Gunnar Østrem's logistical complexities, as he was still straddling overlapping appointments in Ottawa and Stockholm, with his family living in Stockholm. Plans were laid for Gunnar to arrive in Ottawa at the beginning of May 1963 and accompany the early field groups to Flitaway Lake and the Barnes Ice Cap. His main task would be to initiate studies in glacio-hydrology on the Lewis Glacier and Lewis River and to train Canadian undergraduate field assistants to maintain detailed field observations throughout the season.

The next component of the 1963 season would be a series of studies to expand our understanding of the cross-valley moraines, easily accessible from Flitaway Lake. Another objective was to examine the relationship between the retreat of the proto-Barnes Ice Cap from the Foxe Basin coast and the timing of the entry of the sea—one of the closing phases of the last ice age. This work would be headed by John Andrews, aided by a small army of student assistants, and would incorporate Pat Webber. Under Roland's guidance, Pat and John could begin to apply Roland's methods in lichenometry to dating the retreat phases of the Barnes Ice Cap. One of the permanent indicators of

this process today is the significant number of place names on the topographic maps of the area that are devoted to species of lichen, including *Alectoria* Lake, *Umbilicaria* Lake, and *Arenaria* River.

### Breaking new ground: Women in Canadian Arctic fieldwork

Shortly after my return to Ottawa from Baffin Island in early September 1962, I received the now familiar invitation for "debriefing" from Dr. van Steenburgh. These meetings ranked among the most fascinating and instructive (even inspirational) of all my experiences in the department. On this occasion I was asked to outline at some length what I thought had been achieved so far in Baffin Island and what my plans were for the future. Dr. Van, as he was usually known to the senior staff, asked me many penetrating questions. He was especially interested in my account of the "lichen-free" areas; he posited that I might have hit upon a very interesting new phenomenon. When I mentioned my connection with Roland Beschel, he strongly supported the relationship.

I raised the possibility of helicopter support. Dr. Van advised me to proceed with caution, as a significant increase in expenditure would be needed. He suggested that perhaps by the end of the next field season, I would be in a position to request an augmented budget, but that to do so would require convincing justification. If I could manage that, I would have his full support. He was also interested in the trend toward involvement of university faculty and graduate students from disciplines other than geography. This he warmly supported, but again he advised that an explicit justification would be needed.

After this much encouragement, I decided to tempt fate: "Dr. Van, what do you think about my adding women to the Baffin Island expeditions?"

That produced an emphatic response. "Why not? But you will have very strong opposition, especially from Bob Code [director of personnel] and the GSC.

Give it a try . . . but again, you must make a convincing justification. The reason you give *cannot* simply be a plea for equality of treatment for women. You must have a specific reason.”

Therein lay the kernel of my campaign to break down the veritable bureaucratic brick wall and open our Baffin field operations to women, especially undergraduate students. The specific justification would centre around Dr. Cuchlaine King. She had been my undergraduate tutor at the University of Nottingham and a member of two student glaciological expeditions that I had led to southeast Iceland. I wrote to her to see if she could be tempted to come from England for at least one field season on Baffin Island. She did not hesitate, although her arrival was delayed until 1965.

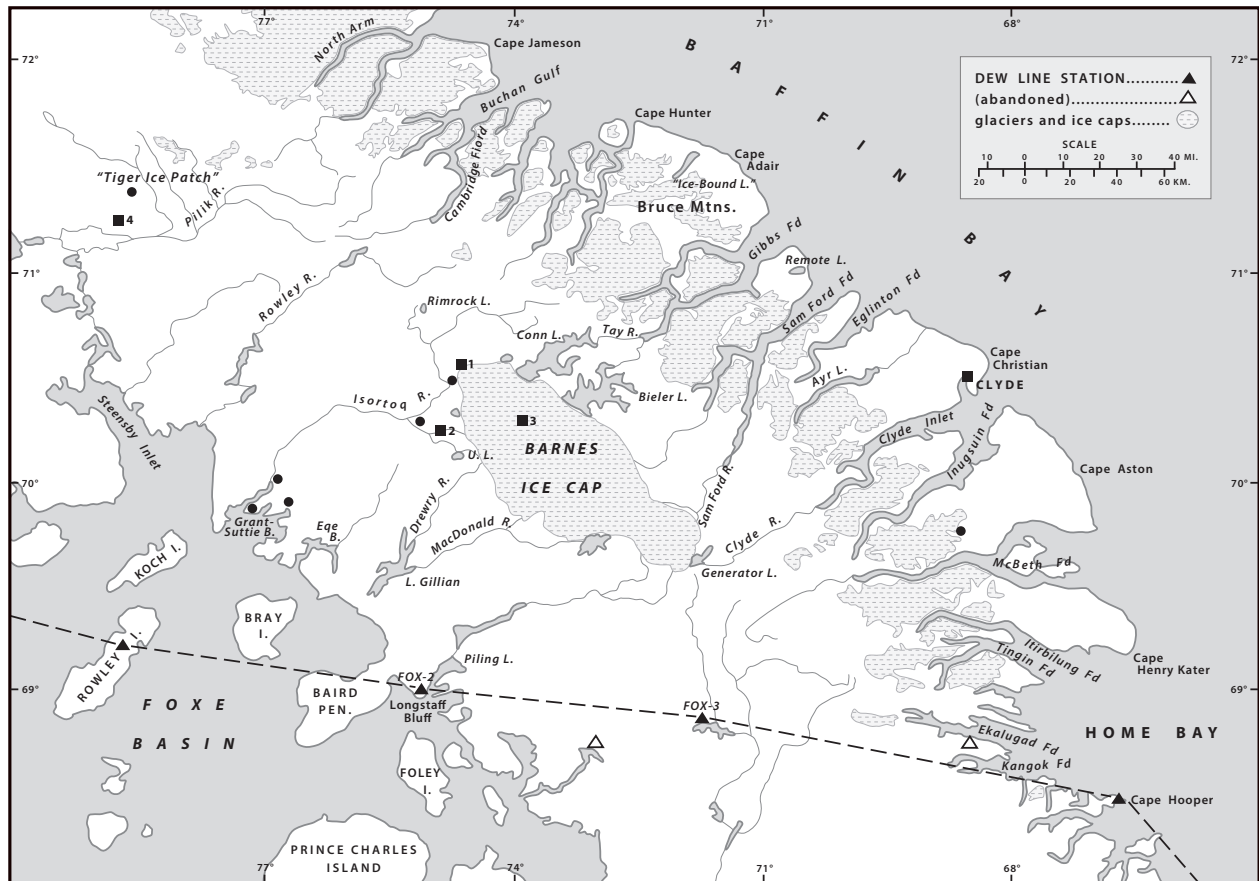
### The 1963 Baffin Island field season

The scale of operations in 1963 was increased significantly, with a total of seventeen participants, not including two aircraft pilots and an engineer. Following the early season activities supported by a ski-wheel Otter chartered from Wheeler Airlines based at Frobisher, two Beaver floatplanes were chartered from Northern Wings for the open-water period, to be flown by our old friend Spike and another pilot, Jim Cole. (Map 6)

As in 1962, distinct lines of activity were scheduled. Brian Sagar, assisted by Rolf Kihl, Chris Bridge, Pierre Gaudreau, and G. Emery, was again based on the crest of the ice cap. Gunnar Østrem, with Mike Church and Bill Rannie, was scheduled to begin glacio-hydrological studies on the Lewis Glacier and Lewis River. George Falconer and assistant Kent Sedgewick were flown in to the Baffinland Iron Mines camp at Mary River, close to Pilik Lake. They were invited by Murray Watts to use the company's base camp, a most satisfactory result of the previous summer's surprise encounter.

The largest group, under John Andrews, with Pat Webber, was to focus on the geomorphology, glacio-hydrology, and botany and lichenometry of the area around the northwestern margins of the ice cap, along with the interrelations between late-glacial sea levels and the retreat of the proto-Barnes Ice Cap from the Foxe Basin coast. Flitaway Lake was again to be the main base of operations, its threat to disappear the previous summer turning out to be an apparent false alarm, although we were to remain on tenterhooks. Eventually, later in the season, a substantial transfer from Flitaway to King River was undertaken. (Fig. 18)

Perhaps the most remarkable feature of the summer was the success achieved by John Andrews and Pat Webber in training the student assistants. The party's research task was to apply the lichenometric techniques to relative dating of the progressive surface exposure following eastward retreat of the western margin of the proto-Barnes Ice Cap, during the final phases of the last ice age to its position in the 1960s. Extensive “old” deposits of fossiliferous peat were located and sampled. In addition, the team completed the precise levelling of the raised marine shore features along the Foxe Basin coast, the potential importance of which had been realized during the 1961 reconnaissance. John's work led to the identification and dating of the marine limit, which he determined represented an actual contemporaneous sea level (or “strandline”; see Løken, 1960). Furthermore, he was able to show that lobes of the remnant Baffin Island ice cap still penetrated to tidewater in the Grant-Suttie Bay area when the late-glacial sea had reached its highest level on the exposed headlands. The regional tilt was up toward the southwest, thus confirming our hypothesis based on the 1961 reconnaissance (Ives & Andrews, 1963). John also confirmed that the age of the associated Isortoq moraines was between 7,000 and 5,500 radiocarbon years. Another notable innovation in Canadian Arctic research was Gunnar's introduction of Norwegian methods for calculating turbulent glacier meltwater runoff. This



MAP 6: Sites of camps and bases for 1963 (see also Map 7): (1) Flitaway Lake, (2) King River, (3) Barnes Ice Cap crest, and (4) Mary River–Baffinland Iron Mines base. (UL represents Umblicaria Lake.)

involved training Mike Church and Bill Rannie to take care of the season-long discharge measurements of the Lewis River using the “relative salt dilution” method (Østrem, Bridge, & Rannie, 1967). In practice, the approach required all of Mike’s inventiveness to overcome problems inherent in Gunnar’s methods, in part resulting from the extreme turbulence of the river. Gunnar was also able to obtain another large ice sample from the Barnes Ice Cap ice-cored moraine close to Umblicaria Lake, this time early in the season using the ski-equipped Otter.<sup>4</sup>

Brian Sagar, supported by Rolf Kihl, Chris Bridge, G. Emery, and Pierre Goudreau, reoccupied their old camp on the crest of the ice cap in late April.

Using the Otter, snowmobiles, and skis, they inserted ablation stakes over an extensive area. They operated as a self-contained group on the ice cap until the end of the season, with one exception. Brian made a “breakout” visit to Flitaway Lake, where Gunnar invited him to give a talk on the work in progress to the quite large group then present. The main “land party” left Ottawa on May 23, early enough to use the Otter, although it was into June before the Flitaway base camp became fully operational, owing to bad weather that restricted airborne operations.

During this early period, a curious personal problem caused a degree of consternation and required my intervention from Ottawa. When Gunnar arrived in





Fig. 18: King Lake after the emergency move from Flitaway Lake. In contrast to Flitaway's abrupt fall in level, King Lake has risen, due to the warm weather accelerating melt on the ice cap that supplies most of its water. (Photo: August 1963)

Ottawa, he confessed that he had been exposed to mumps through one of his children. As he had never contracted the disease as a child, this presented a delicate problem for the entire group, especially as treatment for an adult male would involve confinement to a darkened room. This would hardly be possible at 70°N during the summer solstice. I authorized his departure but had to ensure that the chartered Otter be kept on hold for an extra ten days, to await the end of the mumps incubation period. It was an expensive adjustment, and I was very relieved when I heard from Fox-2 that Gunnar had remained in excellent health. I am sure it was also a relief for him and his colleagues in the field.

After a break in Ottawa from his ice cap duties during the first part of the season, Rolf Kihl returned in early July to re-establish the geomorphological lab at Flitaway. Considering the large number of field assistants that John had working on till fabric analysis and overall soil sample collection, Rolf made an important and timely contribution.

From the highly convenient Mary River base, George and Kent received considerable assistance. Ron Sheardown, Murray Watts's "pilot-in-residence," took them on an extensive reconnaissance flight across a large section of the northern Baffin terrain, almost as far as the Inuit settlement at Pond Inlet. They were also able to spend five days working on

Fig. 19:  
With canoe on Rimrock  
Lake. Roland Beschel  
(right) couldn't resist a  
spin on Rimrock Lake  
with his doctoral student,  
Pat Webber (left), after  
inspecting our rock lichen  
stations. (Photo: August  
1963)



and around what became known as the “Tiger Ice Patch,” a day’s backpack north of the camp. There they greatly benefited from the cache that the “iron miners” had put down for them the year before. The ice patch had been examined by George on air photographs in Ottawa. It had been immediately apparent that the discussion generated by the initial interpretation of the “lichen-free” areas farther south warranted detailed investigation of an actual field site where a small, thin ice patch had been retreating, at least since the first air photographs had been taken in August 1948. In the process of scrutinizing the ice patch, George discovered mosses and lichens emerging from beneath the receding ice margin. He raised the possibility that such vegetation may have survived dormant, not dead, for a very long period. Recent extensive research has demonstrated that mosses and lichens have survived for at least fifty thousand years. This is now being used as significant evidence in support of the highly relevant conclusion that Baffin Island’s summer temperature over the last decade (i.e., post-2000) had been higher than at any time

since at least the onset of the last major glacial period (Falconer, 1966; Miller, Lehman, Refsnider, Southon, & Zhang, 2013; La Farge, Williams, & England, 2013). The significance of this finding is discussed in greater detail in chapter 11.

I spent nearly six weeks in the field myself, from mid-July until the end of August. My purpose was primarily a mission of inspection and a start on eastward exploration to determine the next series of field areas that should be tackled in the mountains and fiords. I was also able to be up north to welcome Roland Beschel, who arrived for the final two weeks of August. During his visit, as consultant to the Geographical Branch, he was to review the level of reliability of the extensive lichenometric work that had been spearheaded by Pat and John and to supervise Pat’s identification of a suitable doctoral research project. Roland and Pat also flew with me to Rimrock Lake to examine what had become the type area for determination of the cause of the “lichen-free” pattern that was so extensive across the central and eastern sections of Baffin Island. (Fig. 19)



## Lakewater levels and “The Little Beaver”

In early August we had another scare. Once again, Flitaway Lake threatened to live up to its name, suddenly dropping in level by more than a metre. This prompted another precautionary evacuation to King Lake to our south (actually a broad lake-like expansion of the King River that drained directly from the Barnes Ice Cap). The days of August 9 and 10 were spent collapsing the lab and most of the tents and, with the two Beavers, ferrying everything to the much more stable southern site. Here, on a long sandy spit connected to a small island close to the south shore, we built a comfortable new base camp. Fieldwork then settled down to a new routine, if “routine” is the appropriate term. The various field camps were once more reoccupied. Roland accompanied Pat, and our pilot Jim Cole worked round the clock to move the various parties from one campsite to another. Mike Church and Bill Rannie had remained behind at Flitaway so they could complete Gunnar’s full program of observations on the discharge of the Lewis River.

I returned with Spike and Roy, his engineer, to the King River camp, where Rolf and Pierre Gaudreau were processing a large number of soil samples in the field laboratory. By this time, Spike had begun to expect a surprising level of luxury. He was insisting that engineer Roy accompany him on every flight, which had the effect of reducing the Beaver’s payload by about a hundred kilograms. Much to the open amusement of the students, Spike insisted that Roy piggyback him onto and off the plane at each takeoff and landing. (It was normal practice for everyone to jump off the pontoon into the water when a single leap to dry land was not possible.) Spike’s Beaver became known, sarcastically, as “The Little Beaver” on account of its small payload compared with that of its twin, piloted by Jim Cole. (Fig. 20)

Following a smooth landing on King Lake, Spike propelled the Beaver so that its pontoons, as usual, glided gracefully onto the sand spit. We went

into the main hut to prepare supper. After supper a radio schedule with Brian Sagar on the crest of the Barnes Ice Cap warned us that, even at our much lower elevation, we should be prepared for our first below-freezing temperatures of the summer. Brian reported a hard freeze on the crest of the ice cap and predicted that, as the surface meltwater around his camp was already frozen, the level of King Lake was liable to drop during the night, because most of its supply of water was melt from the ice cap. That warning led to my first serious confrontation with Spike.

After closing the radio sked with Brian, I suggested to Spike that we should all help turn the Beaver around so it faced out into the lake and then anchor it so that it was afloat. Spike gave a very disgruntled response, protesting that he had done enough work for one day. He also claimed that I didn’t know what I was talking about. He had “flown around Labrador for almost twenty years” and was “well aware that lake levels didn’t fall until late September or early October.” I delicately pointed out that we were more than 1,500 kilometres north of his home territory of Labrador, and furthermore, our lake’s supply came from the ice cap and it was freezing in place. Unfortunately, Spike took my response as a challenge to his superior judgement, which did not ease the situation.

Much debate ensued. Hadn’t it been agreed that while I was expedition leader, he was air commander? Eventually we were able to reach a compromise. We turned the Beaver so that it faced outward but was still firmly grounded on the beach. With no trees around, in contrast to southern Labrador, one of Spike’s fears—and it was a reasonable one—was that a sudden high wind could be disastrous for an inadequately anchored plane. In “normal” circumstances when north of the treeline, it is wise to drive a float-plane’s pontoons hard up on a sandy beach. In such a situation, two anchors could be embedded farther up the beach. South of the treeline, a plane could also be roped to any sturdy trees close by. And so to bed; it now approaching late August, we all fell asleep in the darkness.



Fig. 20:  
“The Little Beaver.”

Engineer Roy is piggybacking senior pilot Spike Burnett, to ensure that Spike doesn't get his feet wet. King Lake. (Photo: August 1963)



I was up early the next morning as usual. I crept outside to admire the still clear sky—not a ripple on the glassy surface of the lake—but I saw with alarm that its level had fallen noticeably during the night even though there had been no freeze. There stood the Little Beaver—high, dry, and quite some distance from the nearest shallow water of the lake! Smiling grimly to myself, I went back into the hut and began to prepare coffee. When ready, I took a steaming mug over to Spike, who was just beginning to emerge from his sleeping bag.

“What’s the matter with you, Jack? Why have you taken on the duties of nursemaid?”

“Because I think you will need this, good and hot,” I replied. “I only wish I could top it up with something much stronger.”

Spike’s response: “What on earth does that mean?”

To which I replied, “Spike, please drink it hot, then go out and take a look at the lake.”

Poor Spike! He shot out of his sleeping bag, spilling his coffee, rushed out of the hut, and simply stood there in amazement for a few moments. Rolf, Pierre, and Roy, all still half asleep, were roused by a string of bellowed obscenities, which eventually trailed away into speechlessness. I bit my tongue hard to keep back the almost inevitable “I told you so.”

Breakfast was acutely tense. When Pierre eventually set the rest of us going in a bout of laughter, Spike just rushed out of the tent to stare again in silence at the Beaver. Pierre whispered, “Should we ask him where he keeps his spare set of wheels?”

“Don’t you dare,” I replied, “or you will be in real trouble from me!”

What to do? We began by taking out the large plywood sheets that formed the floor of the Parcoll

hut. These, along with pieces of smooth fabric, were placed in front of the Beaver's pontoons. Next we harnessed lengths of rope to both fore and aft pontoon struts, two lengths on each side. Spike crawled into the pilot's seat. Our plan was that the four of us would heave on the ropes as Spike started the engine and partially opened the throttle. With Pierre behind me and Rolf and Roy on the far side, we pulled mightily, inch by inch bringing the Beaver a little closer to flotation. Spike opened the throttle a little more and the Beaver trembled from nose to tail. With a series of little jerks, we inched it closer and closer to the water. Finally, after several much-needed rests and severe strain on ropes and engine, we had the plane in the water—but only very shallow water at that, and it was still some way from where it would float. More pulling, with Spike opening the throttle even more so that I was afraid I would see the plane disintegrate. Eventually I found myself thigh deep in the lake; as we gained partial flotation we realized that our efforts would succeed. Spike signalled me from the cockpit that he was about to try three-quarters throttle.

At that moment an anxious thought raced through my mind. Pierre was just in front of the tailplane. What if Spike suddenly unstuck the Beaver and it shot forward quickly? I was in the act of turning to warn Pierre when it did exactly that. Pierre, fortunately, had had the same thought and had ducked, but I was turning into it. The tailplane clipped me on the temple. I lost consciousness and dropped into the lake. The very cold water brought me to my senses almost immediately to observe the Beaver gently floating and a very anxious Spike looking out to see what damage he had done. All I received from the adventure was a soaking, a large bruise on my temple, and a broken pair of sunglasses. It was time for mid-morning coffee, well deserved by all concerned. Spike expressed profound apologies for knocking me out and nearly drowning me, but I laughed it off and our usual good spirits were finally restored.

## Reconnaissance to the northeast coast: Critical moments in logistics

Jim Cole, piloting the second Beaver, rejoined us after an extensive tour of work along the Foxe Basin coast as far north as Steensby Inlet. A spell of fine weather prompted a reconnaissance to the far northeast coast on the edge of Baffin Bay. Since 1961, we had accomplished so much fieldwork in the area between the Barnes Ice Cap and the Foxe Basin coast that it was time to shift focus toward the mountains and fiords in the northeastern coastal region.

Gunnar and I had made a single reconnaissance flight to Cape Adair the previous year, and graduate student Dave Harrison, with Dick Cowan (both had completed master's degrees based on work at the McGill Sub-Arctic Research Lab), had spent two weeks working in a small area of the Bruce Mountains this summer. No other investigations had been attempted since the 1950 AINA expedition to the southern dome of the Barnes Ice Cap and the fiord and mountain area between Clyde Inlet and Sam Ford Fiord. Air photo interpretation during the 1962–1963 winter had made it clear that here was a prime research area relatively close at hand. However, there were significant logistical problems to be overcome and an aerial sortie appeared essential.

A reconnaissance to the northeast coast with Jim and the Beaver would require more fuel than the regular tanks could hold. So we hefted four ten-gallon steel drums of fuel into the rear of the cabin. We assumed that along the way we would be able to find open water where we could land and refuel. On Jim's insistent questioning, I assured him that Spike had landed Gunnar and me on a very suitable lake the previous summer. It lay close to sea level in a wide glacial trough subject to high winds that should have aided in clearing away the previous winter's lake ice and would surely provide a safe landing along the planned route. We would also be flying out there ten days later than last year, when it had been completely open without a single piece of floating ice on its

surface. Spike readily confirmed this and gave his approval. As things turned out, however, this proved to be a clear error of judgement, and we were very fortunate not to suffer the consequences.

We packed an emergency tent, sleeping bags, climbing rope, and a goodly pile of ship's biscuits (also known as hard tack, pilot biscuits, or "door knockers"), chocolate, pemmican, and canned sardines, and set off soon after breakfast on August 24. We flew almost due north, passing over the Lewis Glacier and Flitaway Lake in the general direction of the head of Cambridge Fiord. On approaching the fiords, massive stretches of broad ridges came into view. They were the Cockburn Moraines.

On sighting the head of Cambridge Fiord, we changed course to a northwest heading for Coutts Inlet and North Arm, the most northerly of the east coast Baffin fiords before Pond Inlet. The scenery along North Arm was spectacular from our flying height of about six hundred metres above sea level. The rock walls rose high above us, and where valley glaciers flowed down into tidewater, we could clearly see how they had expanded after the main ice age outlet glaciers had receded inland onto the plateau, some thousands of years ago.

We emerged from the fiord in the vicinity of Nova Zembla Island, close to latitude 75° north, and turned due east toward Cape Jameson on the outer coast. There had been absolutely no open water along the flight route so far, except for inadequately small areas where mountain streams discharged into the fiords. The prospects of finding a refuelling spot for landing were appearing bleaker by the moment, but I was still optimistic. Now, as we crossed the coast into Baffin Bay everything appeared solid white, except for a distant glimmer of open water that would have been at least fifteen kilometres out into the bay. Jim nudged me. "Jack, you had better locate your famous lake before too long. Are you sure you can find it?"

"No problem," I replied with confidence. "Before we reach Cape Adair we should be able to turn

southwest into a huge deep valley, and then I'll show you ten kilometres of beautiful water."

We crossed Buchan Gulf and sighted Cape Hunter. Jim mentioned again that he was anxious to sight open water as there had been nothing so far but frozen lakes, frozen fiords, and pack-ice-strewn Baffin Bay with its streams of mighty icebergs on their way south. We overflew Cape Hunter. Jim had now become noticeably perturbed: "Jack, where the hell is this bloody lake of yours? We're getting very low on gas."

We were flying along an impressive sheer mountain wall and I turned to Jim, still confident. "You see that big opening ahead; that's the entrance to the valley. You'll see the lake in a few minutes." We rounded the cliffs and entered the mouth of an immense glacier-cut valley . . . and there lay our lake—frozen solid from end to end! Jim sharply banked the Beaver and headed out to sea toward the middle of Baffin Bay. "Surely you're not aiming for Greenland, Jim?" I said, my previous confidence in shreds.

"Don't worry about that, we'd never get halfway there," he replied. "But we had better find some open water soon, as the fuel gauge is reading almost empty. Take a look!"

After a few more anxious minutes over the sea ice, we did come across a wide lead, surprisingly free of icebergs or loose pieces of pack ice. Jim went straight for the water and landed not a moment too soon. So, finally, we sat gently rocking in the middle of an ocean of floating ice. The coastal mountains looked a very long way off—probably at least ten kilometres. It was almost still, only the lightest breeze rippling the water. Sitting there was a calming experience. Our hearts stopped racing and our pulses slowed back to normal.

Understandably, Jim wanted to refuel, get out of there, and fly back over land as soon as possible. He jumped out onto the pontoon, opened the rear cabin door, and began to wrestle with the first of the ten-gallon drums of avgas. Alarmed, I jumped out after him, got my hands on the climbing rope, and

proposed to belay him onto one of the struts. It is necessary to explain at this point that the rear door of a Beaver is separated from the fuel cap by the wing struts. I saw that Jim, with a heavy drum of avgas on his shoulder, would have to duck beneath and around the struts, leaning out over the water.

“Wait a moment, Jim, and I’ll tie you on for safety.”

“No need,” he replied, “I do this kind of thing all winter in the Gulf of St. Lawrence.”

“This is different, Jim. If you slip off the pontoon, I will never be able to get you back on.” But he insisted it was routine and told me to get back in my seat and leave him to it. I agonized while he repeated the trick three more times, to put forty gallons into the Beaver’s main fuel tank, ducking beneath and around the struts with each heavy load. When it was over, he climbed in beside me.

He could sense my feeling of relief, then surprised me still further: “If I had fallen off, I’m sure you could fly the Beaver back to King Lake, right?” I replied that I was not so sure about that, and even if I could, I would have one hell of a task to explain how, and why, I had lost my pilot. That finally got him laughing. He started the engine and we began to race down the open lead, taking off with plenty of water to spare. He banked and headed inland to the coast, flew the full length of the frozen lake, and emerged over the icy waters of Dexterity Fiord. We then continued due south and climbed up above the inland plateau heading across Conn Lake toward the Barnes Ice Cap.

Once we were well away from the mountains and flying smoothly, Jim proceeded to give me tips on how to handle the plane if an emergency arose: “The takeoff would be easy. You’ve watched me and Spike do it many times. But when you approach King Lake, you should descend directly and smack down vigorously on the water on the first go. Don’t worry about gently touching the water with the pontoons, nor about the landing conditions. Just get the damn thing down! If, in an extreme case, you break off the

pontoons, get out quickly and depend on your life jacket and hope somebody is close by with the canoe.” This was all well and good, but I was relieved I never had to put it to the test.

We climbed slowly up the northeastern slope of the ice cap. As we crested the summit, we could see a most ominous bank of dark clouds stretching all the way across our western horizon. It would not be long before a devil of a storm would hit us, although we would have no trouble getting to camp well ahead of it. Distant lakes were glinting in the far west as we seemed to glide down the western slope of the ice cap. King River was soon immediately below us; within minutes, the Beaver’s pontoons were cutting through the water and we quickly beached on the welcoming sand spit.

Spike was waiting on the dry margin and we went into the Parcoll for what was obviously to be a “council of war.” Spike explained that he had just heard over the radio from Fox-2 that Hall Beach was already picking up snow and a major storm was on its way. It was very close to the date set as the end of the field season, so we opted for an emergency evacuation to Longstaff Bluff (Fox-2). Spike was worried that the storm would bring with it low temperatures and the risk of being frozen in on King Lake.

As there were only five of us plus the two aircraft, we were able to scramble and be off within forty-five minutes. The tents were left standing. All we took with us were the expensive instruments, notebooks, maps, and personal belongings. Fortunately, Spike had taken John and Pat and two loads of equipment to Longstaff while Jim and I had been cruising the northeast coast. George and Kent had also been retrieved from the Mary River camp and were on their way to Fox-Main, to connect with standard commercial flights to Montreal and Ottawa. But what about Mike and Bill, who were sitting on Flitaway Lake? Spike was insistent that we must leave them and sort out “that problem” later. He smiled grimly and said in his best philosophical manner, “Storms don’t last forever. You and Jim can pull them out when the



weather abates, but I'm dropping off my payload at Fox-2 and heading straight south for Frobisher, so let's get going!" So we did, landing at Fox-2 just as the first snowflakes arrived. Spike off-loaded, effected a very quick refuelling, shook hands, and departed with Roy for Frobisher.

### To Flitaway Lake to "rescue" Mike and Bill

Jim and I had made the approximately 130-kilometre flight from King Lake to Fox-2 on Spike's tail without incident, buffeted by the very choppy air ahead of the ominous weather front. We had landed with sheets of spray hitting wings and engine cowling as the cloud base was approaching lake level. Snow had just begun to fall. Then we luxuriated in the warmth of the DEW Line station, with steaks, fresh bread, hot apple pie, followed by pool and table tennis, as well as hot showers and clean clothes. There was much forced laughter about Mike and Bill, still out there in the snow and wind, and some dark humour about how they would walk out—or perhaps overwinter! But the joking was symptomatic of a high degree of concern. I was certainly very anxious for them.

The storm raged for two whole days, during which time the surrounding landscape turned a glittering white. Our table tennis abilities improved remarkably and camaraderie with the station crew reached new heights. But what of Mike and Bill? No radio contact had been made. I had a telex from Ottawa asking that I return immediately (if only to struggle with an emergency Treasury Board meeting on which our 1964 budget would depend). I was in a quandary. John Andrews offered to go with Jim Cole to attempt a pickup of the two men, leaving me free to head for home. However, I had made a personal commitment at the start of our Baffin Island expeditions, in 1961, that I would never leave the field until I felt assured the entire party was en route for home, safe and sound.

On the morning of the third day, the sky began to clear. By noon it was a steely blue, without a cloud. But the wind was blowing and gusts of up to one hundred kilometres per hour were frequent. The Beaver could not take off in such conditions—some of the gusts were close to the plane's maximum speed! Jim's prognosis was that, when the wind did drop, the lakes would freeze quickly as the air temperature had remained very low. In that event, a floatplane would be of no use, and the task of retrieving Mike and Bill would take on a more serious hue.

The wind dropped steadily throughout the afternoon. The attempt would have to be made before nightfall because of the risk of an overnight freeze of the lake; at best, Mike and Bill would be starting to feel hungry. We set off about as late as we dared and made a harrowingly slow and bumpy flight northward, slow on account of the strong headwind. The familiar tundra landscape was now totally white, ghostly, hostile, and unrecognizable, except for the many lakes now showing white wave crests on the windswept water and allowing us to be certain of our direction. The land sloped imperceptibly up toward the ice cap; our tents looked stricken as we passed low over the base camp we had evacuated so quickly at King River. We crossed the Lewis Glacier and Flitaway Lake came into view. Clearly, we were headed for a very windy landing.

We flew low over the single tent, but all was still and silent. We hit the lake surface with a thud, bounced, and quickly lost forward motion in the teeth of the wind. We manoeuvred repeatedly to try to come close to the lakeside nearest the wildly flapping tent so I could have a chance of reaching dry land without getting totally soaked. Small pieces of ice were scattered across the water, seemingly jumping on the backs of the wave crests. Worse, as a result of the recent drop in water level of the lake, large boulders poked above the surface all along the shore—a perilous situation. Furthermore, the spray was already freezing on impact with the pontoons and struts. The only thing keeping the lake open, in

fact, was the wind. The air temperature was  $-3^{\circ}\text{C}$  and had been below zero for some time.

To add to the difficulties, we backed into a large rock as we tried to manoeuvre for a landing as close to the shore as possible. This so ruined our twin water rudders at the back of the floats that Jim now had significant trouble steering on the water. He edged into the shore as closely as he dared and called out to me, "Sorry, Jack, but you are going to get a wetting! I only hope I can keep more or less on this spot so you can get back on again with the guys. But make it quick!"

I lowered myself off the pontoon, thigh deep in the icy water, and struggled the few paces to the shore, twice slipping in the lake mud and all but going under. I staggered onto the snow-covered shore and hobbled the twenty paces or so to the tent. As I struggled to pull the tent zipper down, a cheerful voice called out, "There's not much room but you're welcome. Come in and we'll do a brew of hot chocolate."

I replied, "Like hell! You've got two minutes to get out, and five minutes to collapse the tent and throw everything into the plane."

"Oh, a plane? We didn't hear it . . . thought you must have walked from King River, sorry!"

I took that to be a sample of clever Mike Church's warped sense of humour, though many years later he assured me it had been an innocent remark.

They emerged from the tent rapidly enough. We rolled up sleeping bags, tent, odd pieces of clothing, and fortunately waterproofed field notebooks into one big soggy bundle and tottered to the lakeside where Jim was managing to hold on. But he had been forced still farther out from the shore, and by the time I got my hands onto the pontoon, I was almost waist deep with spray breaking over my head. Bill and Mike heaved themselves up onto the pontoon, together with the tent and other effects. As they climbed into the rear, I struggled up over them and into the co-pilot's seat.

Jim, still struggling with the damaged water rudders, did some fancy manoeuvres with his wing flaps to clear the lakeshore and then, reducing throttle,

allowed the wind to drift us back to the end of the lake for maximum takeoff distance.

"Sorry, Jack . . . you'll have to go out again," Jim said. "Take your ice axe and knock off as much of the bloody ice as you can!" I tried that, but not for long as the spray seemed to be freezing on as fast as I was breaking it off. The "black frost"<sup>5</sup> encountered by my hometown Grimsby fishing trawlers north of Iceland in winter came to mind, as well as the dire prospect of slipping off the pontoon. Swimmer or non-swimmer, it wouldn't have made much difference.

Back in the right-hand seat I watched Jim open throttle, and away we roared. But looking sideways at the lake edge of the ice cap, we appeared to be hardly moving. We tensed, waiting for liftoff. Almost in slow motion, it seemed, the pontoons cleared the water. The plane seemed to just creep over pieces of floating ice and it was remarkable that we didn't hit any. We gained about fifty metres of elevation, then steeply banked and as we completed the turn; our groundspeed shot up from barely twenty-five to almost two hundred kilometres per hour, and we raced southward downwind.

I turned back to check on our two rescued researchers. They were sprawled out in a tangled mess of melting snow, soggy tent, and sleeping bags—both quite soaked, with ice in their hair. Mike called over the roar of the engine, "Dr. Ives, I would like to be the first student assistant to sign up for Baffin Island for next year." A warm glow spread through me. From Mike Church, that was praise indeed. In a way, though, this intrepid commitment was typical of almost the entire Baffin Island crew from 1961 until 1967.

All the while we were pursuing this hazardous adventure, everyone at Fox-2, regular DEW Line staff and branch members, had been anxiously awaiting our return. Apprehensions evaporated as we came in to land in the gathering dusk. Hot baths, steaks, and cognac for the four of us, then to bed, exhausted. All night long in my dreams I was seeing the Beaver

hit a chunk of floating ice and plunge back into the lake. I asked Jim about it next morning.

“We very nearly did,” he commented. “Another ten- or fifteen-kph windspeed and we would never have made it. But I am going south. . . . Thanks for the assist, Jack! Sorry to rush, but Longstaff Lake is freezing over. Flitaway will be solid by now, so I must get the plane back to Frobisher and home. See you next year!”

That was pure Jim Cole, one of the best Arctic floatplane pilots I have known. You could never tell when he was afraid, if he ever was. But he told me it was fear that kept his nerves taut and his mind keen, and fear had certainly been there on Flitaway Lake.

“Didn’t you feel the same, Jack?” he asked.

“There was hardly time, Jim, but with me it hit afterwards.”

Yes, there had been some very anxious moments. Only Mike and Bill appeared unperturbed—was that the folly, or the innocence, of youth?

The following morning, as arrangements were made for the entire group to catch a DEW Line lateral flight to Hall Beach, the officer on duty brought me a special-delivery confidential letter. Curiosity prompted me to open it immediately. I was shocked to the core. Dr. van Steenburgh had written to say that Dr. Nicholson had decided to take a year’s sabbatical leave. Dr. Van wanted to see me as soon as I got back, indicating that he needed to discuss with me the prospect of my becoming acting director of the Geographical Branch.

So ended our Baffin Island field operations for the 1963 season. Once back at Hall Beach (Fox-Main) that morning, we caught the regular Nordair commercial flight south. We reached Ottawa very late on the same day, barely twenty-four hours after the nerve-testing rescue from Flitaway Lake and hardly a week after almost running out of gas over Baffin Bay. It seemed a little unreal to be back safe in a warm bed.

