THE B.C. MOUNTAINEER

2012

The B.C. MOUNTAINEER
Journal of the B.C. Mountaineering Club

Volume 71, 2012 **ISSN 0045-2998**

Cover photos:

Front Cover: **Camp beneath King Pk. on Mt. Logan. Photo: G. Kollmus.**

Inside Front Cover: **Ascending Mt. Shuksan (top) to the summit (bottom). Photos: S. Liarsky.**

Inside Back Cover: **Two views of Golden Hinde in September, 2011 (top) and August, 2010 (bottom). Photos: P. Gumplinger (top) and G. Zenger (bottom).**

Back Cover: **Atwell Pk. and Mt. Garibaldi (top) and the West Lion (bottom) in winter. Photos: B. Finlayson.**

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THE BRITISH COLUMBIA MOUNTAINEERING CLUB

Club Philosophy

The British Columbia Mountaineering Club is an incorporated society founded in 1907 which celebrated its centennial in 2007. Its pioneer members did much of the early exploration and mapping of the then unexplored mountains near the young city of Vancouver. Most of the mountains in the lower mainland of B.C. were first climbed by BCMC members.

Today, the BCMC is dedicated to the enjoyment and exploration of the mountains, valleys, and alpine regions of British Columbia through activities such as climbing, hiking, backpacking and ski touring. The primary mode of travel is by foot. Mechanized transport is secondary and is restricted to access only. The club feels that pedestrian access allows the greatest appreciation of the mountains with the least impact.

In addition to direct involvement in the outdoors through trips and camps, the Club is active in conservation, trail and hut construction and maintenance, mountain safety, and education. tion and maintenance, mountain safety, and education. The club has assisted in publishing several guidebooks, including Kevin McLane's "Alpine Select" guide, the Alpine Guide to Southwestern B.C., 103 Hikes in Southwestern British Columbia, A Climber's Guide to the Squamish Chief, Guide to Climbing in South-western British Columbia, and the Stein Valley Wilderness Guidebook. Club members regularly act as volunteer instructors in basic summer and winter mountaineering courses offered by the club to its members.

The BCMC flag flies around the world, as here in a mountain hut behind O. Albinsson, I. Rupners, and P. Gumplinger in Austria. Photo: S. Gumplinger.

The club has been very active in conservation land use issues almost from its inception. The existence today of Garibaldi Park is a direct result of the discovery and exploration of the area by the Club. Starting in 1913, BCMC members petitioned the provincial government requesting protection of the area as a park, and in 1927, the Garibaldi Park Act was proclaimed.

More recently, in the 1970's it was a club member who first drew the attention of society to the values of the Stein Valley. During the 1980's it was club members who were most active in defending the interests of wilderness ski tourers against commercial heliskiers. In the 1990's, club members were involved in B.C.'s Protected Area Strategy and have been instrumental in the establishment of Pinecone – Burke and Tantalus provincial parks, as well as others. Today, club members are actively involved in attempts to protect some areas against the intrusion of motorized recreation, particularly snowmobiles. The club continues to play an active role in land use issues relevant to B.C. mountaineering and generally trying to maintain opportunities for non-motorized mountain recreation.

Club Trips and Activities

The Club runs a website (**www.bcmc.ca**) in which its various activities are described.

The most important function of the Club is the running of an extensive schedule of different grades of hiking, climbing, and ski touring trips. Usually, a variety of overnight and day trips is scheduled each weekend throughout the year. These trips are all free and are also open to prospective members.

Club members organize yearly summer climbing camps/expeditions to various parts of the province. Numerous climbs, many of them first ascents or new routes, have been made in such areas as the Kakwa, Kawdacha, and Monkman areas, N. Rockies, (1993-1995), Lake Lovely water (1999-2005), the more remote parts of Garibaldi park (most recently in 2009 - 2011), Stein valley area (most recently in 2003 and 2004), Ape Lake area (1983 and 2001), Mt. Waddington area (most recently in 1999, 2000, and 2004), Mt. Fairweather (2007), Bendor Range (most recently 2012), and the Selkirk Mountains (most recently in 1999 and 2000).

Celebrating a summit (Judge Howay). Photo: M. Labecki.

Occasionally, expeditions are organized by the club to more remote areas such as in Alaska or South America, or to Canada's highest mountains (most recently to Mt. Logan in 2010). Extended hiking trips are also organized, most recently to the South Chilcotin mountains (2007 and 2010), Tweedsmuir park (2009), Jasper National Park (2008), and the Mt. Edziza-Spectrum Range area (2004 -2006).

The ski touring program occurs throughout the winter and spring. This has included a Christmas ski camp as well as spring ski camps to such areas as the Lillooet Icecap, Kokanee Glacier, Bridge Glacier, Fairy Meadows, Columbia Ice Fields, Stanley Smith - Lord Glacier area, Franklin Glacier, the Southern Chilcotin and the Homathko icefield.

Backcountry skiing offers delights and opportunities to improve skiing skills. Photos: D. Robertson (left) and R. Woodsworth (above).

Rock climbing practice is held mid-week during the summer months. Beginners can receive instruction and more advanced climbers can hone their skills. Rock practice is held in the evening at Lighthouse Park, Murrin Park, the Chief, or Smoke Bluffs. In winter, mid-week night skiing has been organized at local ski hills. To help the beginner in developing his or her climbing skills, the Club organizes instruction courses and from time to time organizes training climbs. The purpose of these climbs is to allow people to gain experience on roped climbs.

In December and June the club publishes its 6 monthly trips programs. Updates are given in club electronic and printed newsletters and on the club's website. Members on the club's email list receive trip updates when they occur.

Social Events

Social gatherings are held monthly from September through June on the second Tuesday of each month at 7:30 pm, in the upstairs room at the ANZA Club, corner of 8th Avenue and Ontario Street in

Vancouver. The meetings are informal and the chairs comfortable. Beginning with general club business, there is usually a slide show, film, or talk on some aspect of mountaineering. In the past we have also featured product demonstrations by local mountaineering stores, auctions, and equipment swap meets. Refreshments and cookies are served. Beer can be obtained from the licenced premises below the meeting hall. At the November social the Club conducts its Annual General Meeting.
Details of these events and other special activities are announced in advance in the club's monthly printed and electronic newsletters and on the club website.

Membership
The BCMC has several categories of membership: active, associate, youth, life, senior, and honorary. Persons interested in joining the Club can obtain further information by contacting the Membership Chair (**info@bcmc.ca**), viewing the website, or by attending a club social event. Club social events and trips are open to non-members as well as members.



You find "interesting" people, and from many countries on BCMC trips.
Photos: A. Dzujkova and A. Dzujkova collection.

Library, Archives, and Publications
The Club maintains a library with an extensive collection of books, photographs, guidebooks, and periodicals on mountaineering. It is open to use by members and details about the collection and its use can be obtained by contacting the Club executive.
The club archives, spanning well over 100 years of mountaineering history, are probably the largest set of mountaineering archives in B.C. They are now housed in the North Vancouver Museum and Archives, where they are available for viewing.
The Club produces ten issues per year of its newsletter. The newsletter contains club news, trip schedules, access information, trip reports, and other news. This journal, the B.C. Mountaineer, is produced every two years and contains accounts of recent climbs, camps, expeditions, photographs articles about mountain natural history, studies of mountains, and other material.

Huts and Shelters
There are five BCMC huts, all of which are open to the public and are free to club members. Huts in Garibaldi park were donated to the public.
Club huts and their general locations are:

HIMMELSBACH:	Russet Lake, Garibaldi Park
MOUNTAIN LAKE:	Mount Sheer, Brittania Beach
NORTH CREEK:	North Creek, Lillooet Valley
PLUMMER:	Claw Ridge, Mt. Waddington
WEDGEMOUNT:	Wedgemount Lake, Garibaldi Park

Conservation Guidelines
In order to conserve the alpine environment, Club trips try to adhere to the following guidelines:
1. Pack out all garbage.
2. Where pit toilets are not provided, select a screened spot at least 50 metres from any water and dig

a hole 15 to 30 cm deep. Cover the hole with soil and ground cover. Keep water sources free of contamination.

3. Alpine life, whether flora or fauna, is fragile and not in abundance. Plants and animals are not killed unless in an emergency.
4. Stay on trails and do not cut corners on trail switchbacks to avoid erosion.
5. Light small campfires. Use only dead wood and remove traces of the fire site. Ensure that fires are properly extinguished. Do not light fires in alpine areas or in areas where fires are not allowed.
6. Camp in forests or on non-vegetated areas to avoid damage to meadows, lakeshores and stream banks.

Nature offers BCMC members much that is worth protecting. Photos: G. Kollmuss (left - on Mt. Logan) and Blair Trenholme (right - on Judge Howay).

BCMC trips offer companionship and rest from the stresses of normal urban life. Photos: D. Diaconu (left - on Mt. Logan) and A. Dzujkova (right - on the Misty Icefields).

OVERSEAS AND FAR AWAY

Hoch Tirol Ski, 10-20 April, 2012

Silke Gumplinger

This is a translation by Ilze Rupners of an article originally submitted to the German Alpine Club - Jena section.

"Where are you from?" an Austrian alpine policeman asks us.
We, being Silke and Peter Gumplinger, Ilze Rupners and Ove Albinsson, live in Vancouver, are members of the British Columbia Mountaineering Club as well as (the Gumplingers) the German Alpine Club - Jena section.
"And what are you doing in Austria, when you have so much better snow in Canada?" is the next question. Yes we do have better snow but we don't have many huts or mountain roads that take us up to the snow or tree line. If we go on a ski tour, we have to take everything: tent, sleeping pad, sleeping bag, stove and food, in addition to ski mountaineering equipment. A week's worth of food is pretty much the maximum that we can manage without food drops (previously flown up by helicopter). And then when the weather is bad, we are sometimes stuck for days in a tiny mountaineering tent. A hut to hut tour in the Alps is a luxury vacation for us.
The first time we heard about the Hoch Tirol was 3 years ago while we were skiing the Haute Route in Switzerland. During a bad weather hut-bound day we got to talking with an Austrian mountain guide who told us about this ski trip. Information is available at www.hochtirol.info/
So finally it's happening. We are to leave the Tuesday after Easter. We've scheduled 2 weeks for a traverse that should take only 6 days. But the weather in the mountains can be unpredictable and so it was.

The Plan:

Day 1: From Kasern in the South Tyrol Ahrntal (1621m) via the Umbaltörl (2848m) and Regentörl (3056m) to the Essener-Rostocker-Hütte (2208m) Elevation Gain: 1720m, Elevation Loss: 1160m

Day 2: From the Essener-Rostocker-Hütte (2208m) climb the Grossen Geiger (3360m), via the Türmljoch (2842m) to the Johannishütte (2121m) Elevation Gain: 1152m, Elevation Loss: 1239m

Day 3: From the Johannishütte (2121m) via Defreggerhaus (2962m) to the Grossvenediger (3674m), descend to Innergschlöß (1691m) and the Matreier Tauernhaus (1512m) Elevation Gain: 1553m, Elevation Loss: 2162m

Day 4: From the Matreier Tauernhaus (1512m) over the Amertalerhöhe (2784m), and Granatscharte to Sonnblick (3088m), then to the Alpine Center Rudolfshütte (2311m) Elevation Gain: 1925m, Elevation Loss: 1121m

Day 5: From the Rudolfshütte (2311m) to Granatspitze (3086m), descend into Dorfertal to Kalser Tauernhaus (1500m), accommodation in Kals. The official tour description for the Hoch Route Tirol has you take a taxi that afternoon to the Lucknerhaus and then ski to the Stüdlhütte, but we figured we deserved a "rest day" here.

Elevation Gain: 775 m, Elevation Loss: 1586m

Day 6: Taxi to the Lucknerhaus (1920m), climb up to the Stüdlhütte (2801m) Elevation Gain: 881 m

Day 7: from the Stüdlhütte (2801m) on Adlersruhe (3454m) to the Grossglockner (3798m), then descend to the Lucknerhaus (1920m) Elevation Gain: to 997 m, Elevation Loss: 1880m

And that was the plan. But because we had scheduled 2 weeks, we were hoping to continue further over Heiligenblut to Rauris.

Day 1

We knew that the first day would take 7 1/2 hours, so we were not particularly happy that our hotel served breakfast at 7 am. But we needed to eat and so we caught the bus to Kasern at 8 am. From there, we continued on foot to Kasern Heiligenblut where we finally donned our ski boots. It was 10:30 am.

A mountain guide with a client came by and asked us whether we were back already back from our tour. When we told him our plan, he thought we were starting way too late. However, we still hoped to reach the Essener Rostocker Hütte in time for dinner.

In the Windtal. Photo: P Gumplinger.

And so we started our tour, following an old smugglers route. It was easy climbing at first and then steeper towards the Windtal. The weather was gorgeous and soon we were warm, too warm. We needed to take a lot of drink breaks. When we reached the Umbaltörl (2848m), we could see Regentörl far across the valley, our high point for the day. We also spotted a group of 3 skiers ascending - the only people that we had seen that day. We had a great view of the Dreiherrn Spitze (3499m), but unfortunately it was not in the cards that day.

After a short descent to the Umbalkees in unpleasant conditions we again put on our skins and began the ascent to the Regentörl (3056m). Since we were not yet acclimatized to the altitude, we were progressing slowly. Finally, we made the high point and put the skins away for the day. The ski down to the Essener-Rostocker Hütte in breakable crust was not enjoyable. We arrived shortly after 5:30, just in time for dinner. We were mighty hungry. We were pleasantly surprised to find they had showers. At home in Canada we would be digging out tent platforms, setting up tents, rolling out sleeping pads and sleeping bags, melting snow and finally cooking dinner. We love the Alps!

En route and up to the Umbaltörl. Photos: P. Gumplinger.

Day 2

This stage of the ski tour is described as: "*a scenic impressive mountain tour; the route-finding down the Aderkamm can be difficult especially in bad weather. Alternatively in the spring this can be avoided by descending a steep couloir south of the Aderkamm*."

The weather was forecast to deteriorate during the course of the day but we went as we figured we could always backtrack. We were also pretty keen on the first mountain summit of this tour - the Hohen Geiger.

For the first hour it was flat and then it steepened. Meanwhile the bad weather had arrived and we were in a whiteout when the contours, the snow, and the horizon merge into one. You no longer know what is up or down. At home in the Coast Mountains of British Columbia this is unfortunately a common phenomenon. But these were the Alps and we were following a ski track. Turn around? Never!

Before us at the ski depot for the summit slope was a large guided Polish group. We had to wait a long time as they broke trail but their guide kicked great steps. Finally we were on the summit of the Hohen Geiger (3360m) and we saw - nothing.

Back at the ski depot, the skins were removed and then we 'only' had to find the way to the Johannishutte. We crossed a slope to a flat glacier, and then through steeper terrain west past the Grossen Happ, above the Kleinen Geiger via a

rocky ridge down to the Türmljoch. When visibility is good there is no problem, but in a whiteout, it is difficult to stay orientated. We stopped often to consult the altimeter and map and so found our way to the Türmljoch. There we had two options: descend over the Aderkamm, which is not recommended in bad weather, or a 650 m descent of a steep couloir. We were still in a whiteout, so we opted for the steep couloir, which was very steep with difficult snow conditions. I must have gotten hung up on a clump of ice, and had a spectacular crash. My binding did not release and I felt a sharp stabbing pain in my left knee (the medial collateral ligament). Now that too! Skiing was out of the question, but I still had to get to the hut. I realized that I could sideslip as long as I didn't weight the left ski. With the help of my ski partners, I managed to sideslip 500m down the couloir. Were we ever happy when we finally arrived at the hut.

Day 3

This day, the highlight of the tour was the climb of Grossvenediger followed by a 2100 metre descent into the valley. The weather was forecast to be stellar for the day but then to deteriorate the following days.

Under no circumstances did I want to stay back at the hut. The whole evening, I had kept my knee elevated, iced and bandaged. It was still difficult to walk but I could ski tour uphill no problem. And as long as I got to the top, I figured I'd get down somehow. I noticed that Ilze was traveling way slower than her normal speed. She told us that she knew something was wrong when she couldn't hold down her breakfast. But staying in the hut was not an option for her either. Slowly but surely we made it to the Defreggerhaus. The weather was gorgeous and it was quite warm. Incredibly Ilze managed this without being able to eat or drink anything.

After a break at the Defreggerhaus, we crossed Rainerkees glacier to RainerTörl at 3420m. From there you could see the Grossvenediger - it was so close. We crossed a flat glacier and in a few kick turns we reached the slightly steeper final pitch (3674m). The panorama was breathtaking. Then we had a 2162m descent over the Schlatenkees to the alpine village of Innergschlöss and then a flattish valley until Matreier Tauernhaus. Thanks to the

View from the Grossvenediger summit (top), then skiing down the Schlatenkees. Photos: P. Gumplinger

previous day's bad weather, we had great powder snow and my knee was not complaining at all. It was amazing skiing the Grossvenedigescharte and then the Schlatenkees glacier. Lower down the snow got heavy and my turns became more cautious. After a last steep section, we reached the valley floor at 1700m.

Innergschlöss is rightly called the most beautiful valley (end) of the Eastern Alps. From there onwards, it was very flat and we wished we had our cross-country skis. Then the snow ended and from Aussergschlöss onwards we had to continue on foot. There were still many kilometres to the Matreier Tauernhaus and despite using my poles as crutches I moved very slowly. It was an ordeal and it was late when we reached the Matreier Tauernhaus. The host greeted us warmly, dinner was waiting for us, we had double rooms with shower and toilet, and there was also a wood-fired sauna. What more could you ask for? We were in paradise.

Innergschlöss. Photo: P. Gumplinger.

Day 4

We looked out the window - the mountains were gone! All we saw were thick grey clouds and it alternated between rain and snow. We rolled over and went back to sleep. We spent the day eating, sleeping, watching TV, taking a sauna, doing laundry (very necessary), walking (when the rain stopped) to find the start of the next stage, watching the animals in the Petting Zoo and playing guitar.

Day 5

The weather had improved; it was not perfect but good enough. We wanted to continue. But Ilze still felt weak, so she and Ove decided to take a bus, train, taxi and ski lift to the Alpine Center Rudolfshütte while Peter and I took the route over the mountains.

We had to carry our skis the first 500 metres until we hit snow. We passed the toll for the Felbertauern tunnel, went left of the Daber creek through larch and spruce forest to a steep rise. At about 2000m, we continued with skis past Dabersee, over the Daberkees, until we reached AmertalerHöhe at 2780m. From here, we could see the Granatscharte (2974m), the notch we had to cross that day. The weather had deteriorated. We quickly pulled off skins so we could ski down to Landecktal in good visibility.

While we were taking a break at our low point at 2400m, the weather socked in and it started to snow. Very quickly it became a full blown snow storm where you couldn't see your hand in front of your face. A good thing we had looked at the route from the AmertalerHöhe. We quickly entered the coordinates for the Granatscharte into the GPS. Peter broke trail and as I fell back about 30 m. I could barely see him or the track. Thanks to the GPS we found the gap we had to cross. Needless to say, under those conditions we had no ambitions to climb the Stubacher Sonnblick. It would have been another 114 meters up to the top.

We then had another problem. We were in a complete whiteout and had to drop onto an unknown glacier 660 m to Rudolfhütte. We had the hut coordinates from the GPS, but unfortunately the GPS did not show us where the crevasses were. So in wonderful powder we had to ski down slowly doing the snow plow(!). Then the weather gods allowed us a quick view as the fog lifted. We could see the hut. We skied down quickly, worried that the weather window would close. When we arrived at the hut, Ilze and Ove met us at the entrance. They were just as glad as us that we had managed to do the crossover.

Day 6

Whiteout. Weather forecast: bad. We had the opportunity to explore the Alpine Centre Rudolfhütte. In many huts there isn't much to do. Here they had an indoor climbing gym, fitness room, swimming pool, sauna, and table tennis. You could also lift ski there. The breakfast and dinner buffets were good and substantial.

Day 7

Still a whiteout. We went back into the sauna, ate more, drank more beer and imagined how we would have sat out the bad weather in a tent in Canada.

Day 8

Looking down to the Rudolfhütte. Photo: P. Gumplinger.

The day was a go. The weather forecast promised improvement. We looked out the window and saw - whiteout. No big deal. It was very nice in the hotel but we were getting cabin fever. We saw a few mountain guides leaving with their groups. So very shortly we were outside in our ski gear in the fog.

We followed a good ski track and after an hour ascent, the fog lifted. For the first time, we could see the Sonnblickkees, the glacier we skied down in a whiteout. The hut was below us and around us a magnificent mountain backdrop. We climbed the Sonnblick (3088m) and enjoyed the panorama. We considered whether we would try for the Granatspitze (3086m), but decided that one 3000er was enough for the day. We were looking for an appropriate place in the ridge to descend. The entrance was short and very steep but doable. Then we got to enjoy some good powder snow until we hit the breakable crust. At Dorfersee the terrain flattened and we skate-skied our way to the Kalser Tauernhaus. The snow was wet and it was on again off again with the skis. On the way, we went through an interesting tunnel, the Daberklamm, with headlamps. At the Gasthof Taurer (1521m), which unfortunately was closed, we ordered a taxi to Kals.

We stayed in the Haus Alpina in Kals. After dinner in the KK Cafe (excellent Austrian cuisine), we went back to the pension and were soon joined by the host, Josef Oberlohr. Two of his brothers, Konrad and Rupert, had emigrated to North America and lived in Vail, Colorado. We know Conrad and Rupert, and they had recommended that we stay at Haus Alpina. There was much to talk about as Josef kept offering us more Marillen schnaps.

Sonnblick summit. Photo: P. Gumplinger.

Day 9

We were not in a hurry. The 881 m ascent to the Stüdlhütte (2801m) we could do in a few hours. After a leisurely and very pleasant breakfast we took a taxi to the Lucknerhaus (1920m). There was no snow there and it looked like we would have to walk a few kilometres along a gated road. While we were putting our skis on our packs, we saw a dark minivan with skiers drive up to the gate. As one of them was closing the gate, Ilze and I ran up to them and asked if there was room for our backpacks. In no time flat our backpacks, skis, and all of us were in the van being chauffeured to the valley station of the cable car at about 2100m. (The cable car was used only to transport supplies to the mountain hut). Our ride ended there.

We found out that our van companions were members of the Austrian alpine police and instructors for aspiring police mountain guides. The course was held up at the Stüdlhütte. Before we even had our skins on, they were halfway up the mountain. (In Austria, the alpine police mountain guides investigate most accidents in the mountains. In situations involving a guided group, they would decide whether charges should be laid against the mountain guide).

We took our time as it wasn't even noon yet. On the way we passed by the Lucknerhütte (2241m), which is closed at this time of year, and so on to the Stüdlhütte. It had begun to snow again and we were happy to reach the hut in the early afternoon. We planned on staying two nights as the weather forecast for the next day was not great for climbing Grossglockner.

After we had cleaned up, we were sitting in the dining area enjoying Tyrolean Kaspressknödeln and beer. Suddenly the door opened and a "seriously injured" person all tied up in a bivi-sack was deposited onto the kitchen counter by the "mountain rescuers". The training was finished for the day. Soon all sixteen alpine police - trainers and trainees - had gathered in the dining room. Musical instruments appeared, brought up by the cable car: a guitar, a squeezebox (an accordion with no keys just buttons) and even a bass trombone. It promised to be an interesting evening.

Skiing and hiking beside the Darberbach. Photos: P. Gumplinger.

As things got started, we were dumbfounded. We had the feeling that this was a professional brass band playing and of course everyone was singing in harmony. We knew some of the songs and so joined in merrily. Even “Country Roads” was played in honour of the Canadians. Later it was time to waltz. Good thing we were acclimatised, dancing the waltz and polka at 2800m can be quite exhausting. I don’t believe that we respected the 10 pm quiet hour that evening.

Day 10

The weather forecast was not great, but we decided to attempt the Grossglockner anyway. We only had 2 days and then needed to be on our way to Munich. After breakfast, we waited until we had some visibility and began the ascent. As we crossed the Salzkopf and reached the Ködnitzkees glacier, the weather deteriorated again. We continued and managed with difficulty to find a safe route across the glacier to the ski depot for Adlersruhe (3454m). Luckily we were on snow until we arrived there. The winds were strong and there was no view. It was very cold. When we took off our skis, we saw that the new snow had made climbing on the rocks dangerous. We were not sure if it was the many beers or the waltzing, but with these conditions we were not motivated to continue our ascent. For a brief moment we could see the Adlersruhe, also called the Erherzog Johannhütte. The summit was in clouds the whole time. For me the consolation was that I had climbed Grossglockner in the summer although on a different route.

We took the skins off and descended the Ködnitzkees glacier in the whiteout. Lower down, the wind had dropped and it was warmer, so we slowly thawed out. We got to the hut just after lunch - no problems. Our new friends from the alpine police had finished their training, and were getting ready to leave for the Lucknerhaus. They raved about the Lucknerhaus , - the rooms were nice, there were hot showers and also a sauna. Once we found out that the weather was going to be worse the next day, we opted for another musical evening instead of a second summit attempt.

We left for the Lucknerhaus and yes we did get a nice double room with a bathroom. The hot shower felt great. The dinner was good and the portions generous. The beer of course was also good. Peter had been fighting a cold for 2 days, Ove was tired and so they both went to bed early. No way were Ilze and I going to leave. Once again as soon as the instruments were brought out, the ‘après-ski party’ was back in full swing. The grandparents (the original owners who built this chalet) and whose children were running the Lucknerhaus joined us as did the granddaughter with her harp - lots of singing and dancing again.

The grandfather told me how he expanded the Lucknerhaus after the war - he is also an Oberlohr and of course knows our American Oberlohrs Rupert and Konrad. Shortly before midnight, the grandmother disappeared into the kitchen and returned with a gigantic Brettljausn for 20 people. (The Breettljausn consisted of lots of bread, cold cuts, cheeses, other garnishes) In addition, there were quite a few bottles of red wine provided on the house. Good thing that we were not climbing Grossglockner the next day.

Day 11

Our last day of skiing. Last night it snowed at the Lucknerhaus. Everything was white, and it was still snowing. We planned to do a ski tour to the Gridenkarköpfen (3030m). The owner recommended that we go via the Peischlachtörl (2490m) to the summit and then back over the Kasteneck (2835m), bypass the Glorer hut (2651m) returning to the Lucknerhaus.- a very interesting tour.

We carried our skis a long way, past the Niggl-Alm to the Peischlachtal. There we put on our skis. At the Peischlachtörl we turned up into narrow canyon and continued on up between the rocks - very spectacular! The weather closed in and again we had no visibility. Ilze and I took over trail breaking in the deep snow. We followed a draw up to the summit ridge where we left our skis and continued on foot. In a few steps we were on Gridenkarköpfen - just like in Canada - a cairn with no summit cross and no visibility.
Powder snow for the downhill was a real treat. It was really fun to ski down through the canyon walls. Back at the Peischlachtörl, we saw enough to tackle the Kasteneck. Once on top, we were faced with a steep but short descent which in summer when you can see the path is no problem. However the new snow made the rocks slippery and dangerous. As usual in situations like this, Peter had me go first to break trail. Just above the Glorer hut, we put on our skis again and managed to ski all the way to the Lucknerhaus in the usual variable visibility. Unfortunately the alpine police had departed in the morning and we spent the night without musical entertainment.

Day 12

The day had come to say good bye to the Austrian Alps. To make it particularly difficult for us, there were blue skies and sunshine. On the bus to Kitzbühel, we saw huge piles of avalanche debris. Maybe this was not such a good day for mountain climbing.

The Pyrenees revisited, July-August, 2011

Michael Feller

After an extremely enjoyable traverse through the Pyrenees from Cauterets in France to Torla, in Spain in 2009 (M. Feller. 2010. BC Mountaineer vol. 70, p. 19), another trip to the Pyrenees was desired. This time Evelyn and I were joined by Ehleen and Erich Hinze, with the intention of again traversing from Cauterets to Torla, but by a substantially different route further to the east and including the 3rd highest Pyreneean peak – Monte Perdido. So our small BCMC party assembled in Lourdes, a remarkable town in southern France, noted for the millions of pilgrims visiting it each year in search of a miracle cure to whatever health problem they have.

From Lourdes we travelled by bus, with a most unpleasant and unfriendly driver, to Cauterets – that attractive, friendly, and delightful resort town surrounded by steep, forested, and rocky mountains. The next day we had an orientation / acclimatization hike up the main valley into the beautiful Marcadau valley with its emerald-green, grassy valley floor, whose meadows were dotted with occasional conifer trees and small groups of people. This was the valley up which we had headed on our previous trip, but this time we just visited its lower section.

The next day the traverse began. With relatively light packs – 15 kg or so – as huts and hotels eliminated the need to carry camping and cooking gear as well as breakfast and dinner food (a lightweight inner sleeping bag sheet was our only sleeping gear), we headed up the hiking trail from Cauterets through dense hardwood forest into the Gaube valley. Breaking out of the dense forest, we arrived at the Gaube lake, which was inundated with people, most of whom arrived by cable car attracted to the lake's hotel, its flowery meadows (which included my favourite yellow-orange-red Lotus flowers almost at their peak), and views of surrounding high rocky peaks. Hiking beside, then above, the lake, we left the crowds and entered the truly wondrous world of the high Pyrenees. Our well-defined trail led us up through parkland forest beside a cascading stream. The forest gave way to open rock – alpine meadow – shrubland vegetation where red flowering rhododendrons were prominent. Eventually, on top of a rocky bump, we reached our first night's destination – the refuge des Ouellettes de Gaube (huts in the French mountains are called refuges; those in the Spanish mountains are called refugios). We had visited this refuge via a different route on our previous trip and I was finally able to personally thank the refuge manager for posting to me some important papers I had left behind there – but my train tickets were non-usable as I could not get them before they were needed and the ticket, and nothing but the ticket, (not ticket or seat numbers, etc.) were required to board a train – incredible in an electronic era.

Heading up past Gaube Lake (left) to the upper Gaube valley (right). Photos: M. Feller.

After dinner, a restful night, and breakfast (we could have lightened our packs further by obtaining lunches as well from the huts, but chose to have our own) we set off up into the sunshine into the very spectacular cirque above the hut, surrounded by the vertical rock faces of the Vignemale massif, which we had climbed on our previous trip, although not by the vertical rock! Instead of climbing up to the Petit Vignemale, which we had done on our previous trip, we turned east up a side trail, climbing steeply up to a pass – the Col d'Arraille, then dropped equally steeply down into the Lutour valley on the other side. Half way down we had lunch then headed up a side trail into the upper Lutour valley which, above a headwall, was dotted with many small lakes squeezed between rocky, flowery meadows. Above this little paradise rose rocky peaks resembling Washington's Eastern Cascades.

Many photos later, we descended back to our lunch spot, retrieved our packs, and continued on our descent, by then into clouds which had silently crept up the valley. An hour or so of descent had us near our destination for the day – the refuge d'Estom – but where was it? The map indicated that it was near a largish lake, but no lake, nor anything else, was visible. Suddenly the refuge loomed above us out of the mist only 20m away. We had been travelling beside the lake for some time without realizing it.

A delightful French "bangers and mash" dinner had this writer's stomach working properly for the first time in months. Another good night, protected from the damp mist, was followed by an early breakfast, as we had a long day ahead of us. We stepped out into a sunny day and began descending a well-defined trail down a valley very similar to the Gaube valley, except this one, the Lutour valley, had more waterfalls. After half an hour or so we left the main trail, turning east up a side trail leading to the French Alpine Club's Refuge Russell, named after the Irish-French eccentric who climbed most of the major Pyrenean peaks in the 1800's and had his love affair with the Vignemale (see M. Feller. 2010. BC Mountaineer vol. 70, p. 19). En route to the hut we passed several small piles of cut firewood with signs urging passers-by to carry some of the wood up to the hut. Not many passers-by came this way, judging by the entries in the hut log book, however, but the hut was quite comfortable, with an interesting piped water supply. Beyond the hut the trees slowly disappeared, as almost did our trail, as we climbed steadily up through shrub-covered moraine and talus. Red rhododendrons again became prominent, as we stopped for lunch. Beyond our lunch stop we climbed steadily up to a bare rocky pass – the Col du Culaus – on an increasingly

From the Ouellettes de Gaube hut looking towards the Vignemale (left). Photo: M. Feller.
Upper Gaube valley east of the Vignemale (right). Photo: E. Hinze.



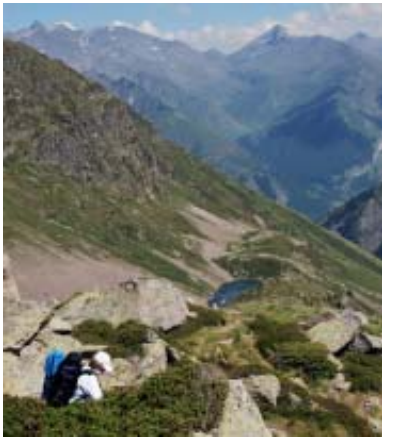
sketchy trail. At the pass we paused to admire the surrounding rocky peaks and review the map, as the next section had no real trail and the log book at Refuge Russell indicated a number of parties had got lost there. We were soon to be another such party.

From the pass our route would be an intricate long descent to the Pau valley to the town of Gèdre, our destination for the night. Initially we descended through a meadow – talus – moraine landscape containing spectacular clumps of bright blue gentians and other highly colourful flowers, down to a small beautiful turquoise-coloured lake, from


Alpine flowers are a highlight of the Pyrenees in July. Photos: M. Feller.

where we had to climb up to another lake, presumably less attractive as it was called Lac Noir. We missed the unobvious route to this lake and ended up doing some major boulder hopping before we found a route up out of the boulders onto a meadow ridge, down which we headed on an increasingly defined trail. This ridge, probably an old lateral moraine, provided magnificent views of the surrounding mountains and valleys. We left the ridge using a side trail which took us to an old weather station, then a hut, then a large lake, where we joined a major trail which took us over well-constructed bridges and





From the Col du Culaus (top left) descending to Gèdre. Photos: M. Feller.

past old mines into meadows covered with blue and yellow irises. At the bottom of the meadows we came to a few unoccupied farm buildings and then forest. After a short time in the forest, the trail descended to a gravel road. For the preceeding approx. 10 hours, we had encountered only 2 people and had had to apply considerable map and terrain – reading skills, suggesting that wilderness experiences were still possible in this part of Europe.

In contrast to this, I pulled out my cell phone to call our hotel in Gèdre, telling them we would be un peu en retard. This resulted in them offering to keep their restaurant open for us. The road led down to the picturesque small town of Gèdre, beside the Pau river and the main road to the major tourist resort town of Gavarnie, a town we were hoping to avoid. We finally reached Gèdre just after 9 pm – a 13 hour day involving 1050 m of ascent and 1650 m of descent. Needless to say, an excellent dinner and night's sleep were much appreciated.

Next morning we peered over the red geraniums in the outside window box to view a cloudy raining scene. The plan had been to do a day trip up a nearby peak, then the following day ascend a ridge and hike south through the mountains to a hut high above Gavarnie. The weather kept us in the valley the first day, so we entertained ourselves with a bus trip to see the sights, or lack thereof, at Gavarnie – a highly over-rated tourist trap with none of the charm or friendliness of Cauterets, in my opinion. Evelyn also took up the challenge of a ride down the "bob luge" at Gèdre.

The next day, the rain continued, so we restocked lunch supplies from Gèdre's only store then tried to catch the bus to Gavarnie, having abandoned our plan of taking the high route to the next refuge, but the driver was too lazy to pull into the Gèdre bus stop and seemed keen on leaving us stranded there – bus drivers on this trip were anything but pleasant or helpful in France. We ended up taking a taxi to Gavarnie, thanks to the assistance of the Gèdre tourist office, whose indoor climbing wall was being swarmed up by a large group of children. From Gavarnie we started hiking up the valley towards the popular and very spectacular Cirque de Gavarnie, which is claimed to contain Europe's highest waterfall, at 444 m. We left the main hiking trail and ascended a side trail steeply up into the clouds and open meadows to the Refuge des Espuguettes – the bad weather route to our intended destination. En route we entered the French Pyrenees National Park, which had a large sign indicating the many activities that were banned for conservation purposes. Behind the sign dozens of sheep grazed away most of the herbaceous vegetation.

After another pleasant night of rest and food, we set out up a trail to the ridge above the refuge – our intended approach route to the refuge. Leaving the trail, in thick cloud, we scrambled up an increasingly narrow and rocky ridge until we reached the first summit of the trip – Piméné. Unfortunately our only view was of the inside of a cloud. We had lunch, waiting for a clearing that never came. Several hundred metres below the summit, on the descent, the clouds lifted and we got our first views of the Cirque, the Gavarnie valley, and the surrounding peaks. Several vultures soared past, being much more abundant on this and subsequent days than their endangered status would indicate, suggesting that species protection laws are working, as is claimed.

The next day dawned sunny and we descended through vast meadows of irises, apparently inedible to sheep, along a very interesting trail which traversed along the bases of different cliff

Conservation and sheep grazing (top) and the summit of Piméné (bottom). Photos; M. Feller (top) and E. Feller (bottom).

bands down into the Cirque. There we fortified ourselves with ice-cream from a café, then continued on up into the Cirque. A smaller trail, marked on the map as a poorly defined dangerous route, was to lead us up through the cliffs of the Cirque to a high valley to the east, although such a route did not appear obvious. However, being in the well- and long- trodden European mountains, the route materialized, following steep, partly hidden, gullies and ledges. Over our shoulders to the southwest, the 444 m high waterfall sprayed down, surrounded by spectacular jagged peaks – one of the most spectacular sights in the Pyrenees.

Irises, Gavarnie. Photo: M. Feller.

Reaching the upper valley, we traversed more gently up moraine and talus to the Refuge des Sarradets (also called Refuge de la Brèche). Along with dozens of other people we waited for the call to dinner. Here we met an extremely fit British doctor on his honeymoon while his new wife worked back in England – a weird mob the Poms! He seemed to be running everywhere, planning to do in one day what we had planned for 3 (he didn't quite succeed, however, and ended up cutting his trip short, probably due more to the weather than his fitness). A friendly Spanish party, as eager to speak English to us as I was to speak Spanish to them, a Belgian couple, and many others, shared our bunkroom. We, unfortunately had the lowest floor-level bunks, or the "rat hole", as Evelyn put it.

Our guidebook suggested that a 3100 m peak on the main ridge above the hut made for a pleasant excursion, so we set out up this peak – Taillon – the following day, along with approx.. 1000 other people (this estimate was based on the number of people we counted while we were on the mountain). Initially, we were accompanied by just a few dozen people from the refuge, but a road end car-park an hour or so from the hut, delivered huge crowds from Gavarnie and other areas.

From the refuge the trail / route ascended a moraine wall, rock bands, and snow slopes up to a spectacular gap in the vertical rocky ridge. This gap is known as the Brèche de Rolande on the French side and the Breca de Rolando on the Spanish side, the ridge-top being the international border. According to legend, Roland, the nephew of Charlemagne, was being pursued by the Saracens. He came up to an unclimbable rocky wall near the ridge-top.

In the spectacular Cirque de Gavarnie. Photos: E. Hinze (top) and M. Feller (bottom).

He had a valuable sword he did not want to fall into the hands of the Saracens, so he smashed it onto a rock, hoping to break it. This resulted in the ridge cleaving in half, allowing him and his troops to escape. Geologists have spoiled the story by claiming that the gap was simply caused by a collapse of part of the weathered limestone rock. We didn't have to bash the ground with our ice-axes, so we had a less stressful climb than Roland up through the Brèche to the more gentle, but still relatively steep, and more rubbly Spanish side. There we turned west and traversed beneath steep cliffs then through a smaller brèche to reach the upper scree slopes of Taillon. Several major trails had been worn into the steepening scree and, using different trails, we converged on the rocky summit. Although there were only about 20 – 30 people on the peak, we gazed down at the hundreds following us up and the enormity of the mountain's use became apparent. The peak provided an excellent viewpoint for the vast number of mountains stretching from the Vignemale to the northwest to Piméné and distant peaks to the northeast, the Cirque peaks to the east and to our final objective to the east southeast – Monte Perdido – at 3348 m the 3rd highest peak in the Pyrenees. We also noted the first part of our route from the Brèche down the Spanish side towards the base refugio for Monte Perdido. We were later to regret not doing this more thoroughly.

After a lunch stop, we descended back to the Brèche where we were held up for long periods by the crowds negotiating the Brèche and the moderate snow slope beneath it in a less-than-confident fashion. Eventually we got through the bottlenecks and amused ourselves by watching the crowds from below.

The next day was to be a pleasant amble up through the Brèche then mainly down the Spanish side to refugio Goriz, the base for Monte Perdido. Low cloud and rain in the morning

Climbing above the Sarradets hut to the Brèche, then to Taillon with the mob (at least 80 people in top right photo). Ehleen and Evelyn on the summit. Photos: M. Feller and E. Hinze.

did not augur well, but we and several other parties set off. Remembering the route from the previous day, we ascended to the Brèche then descended the talus on the Spanish side to find the rough trail leading to Goriz. We then attempted to follow the map and bits of trail through an intricate system of benches, cliffs, talus, sinkholes, moraine walls, ravines, and plains, with visibility less than 100 m. Numerous trails added to the confusion. Eventually, a couple of hours from the Brèche and after much searching, we halted at the edge of a plain. Intuition said to cross it heading east, but the best trails headed south beside it. Forays east and south were inconclusive. While trying to determine what to do, the Spanish party materialized out of the mist from behind us. They were soon followed by the Belgian couple. The Spaniards believed we should head south, but the Belgian's GPS said east. Bowing to the general superiority of "local knowledge", we headed south. Soon we came across another Spanish party who said we should be heading east, so east it was, over the plain, up and over a pass, then down to another plain, where the clouds miraculously lifted and the rain stopped, showing us to be en route. We had lunch, then Evelyn and Ehleen decided to get lost again in perfect, sunny visibility, heading off after the Spaniards. No amount of shouting by Erich and I could get them back onto the correct trail. Erich and I then descended the trail down a cliff band to the refugio where we, along with 150 other people (this refugio is reputed to be the most heavily used in the Pyrenees) waited for the women and the Spaniards who turned up after a detour of well over an hour. Many beautiful flowers and spectacular limestone terrain made for great photography while we waited. Camping is only allowed near huts in this region of the Pyrenees – a sensible way of minimizing environmental degradation – although we did encounter a few tents and tent platforms well away from huts. We retired early for the following anticipated strenuous day.

Next morning we managed to obtain a first sitting breakfast then set off into a cloudless day, although Ehleen decided a rest day was in order. Monte Perdido reared above the refugio and us as we followed a series of trails up the north, and fortunately shady and cooler side of the mountain. A couple of small cliff bands required some class 3 scrambling and snow slopes were frozen, but the anticipated footsteps in the snow (we did not take crampons) provided a good climbing base. We crested a moraine wall up into the sun just above a beautiful small lake – Lago Helado, although it was ice-free and not living up to its name. We caught up with a large youth party at this point. Their relative inexperience caused them to send showers of rocks down the slopes, so we let them move up to where they could not harm us. A sign warned of danger beyond!

We ascended talus, snow and rock, a somewhat exposed, smooth, slabby stiff class 3 rock band presenting the crux of the climb. Above this a trail switchbacked steeply up a talus slope to a broad rocky ridge, which led more gently to the summit, then well-adorned with the youth group and several other parties, although only a small fraction of those we encountered on Taillon – perhaps 60 people for the day. The 360^{o} views were just excellent with the Ordessa canyon, visited on our previous trip, with its band of bright yellow flowering Erizón shrubs, being prominent to the southwest well below us. The Vignemale appeared on the horizon to the northwest. We had lunch, took numerous photos, then made a leisurely descent back to Goriz, where another delicious dinner awaited. This day had definitely been the highlight of several on the trip.

Next morning we set off on the longest distance day of the trip. Fortunately it was cloudless again as we headed up some rough trails to a pass – the Collado de Arrablo. The trail then became indistinct as it headed down a very steep side valley into the main Añisclo valley. The side valley consisted of several major cliff bands with sloping benches between. The route was not at all obvious but weaknesses in the cliff bands, in the form of steep gullies or small ledges, appeared and the trail twisted steeply down. A major waterfall was passed and we re-entered the Erizón band before plunging down into the upper Añisclo valley – a place of incredible beauty, covered with flowery meadows and small clumps of trees, above which rose cliffy peaks, as in the Canadian Rockies, and several major waterfalls, one of which was on a stream coming directly out of a limestone cliff band. Native irises abounded and, for the first time in 4 days, we found a major well-defined trail.

Evelyn ascending lower slopes of Monte Perdido with Ordessa canyon below (left) and Erich on a class 3 cliff band (right). Photos: E. Hinze (left); M. Feller (right).

Ascending the upper slopes of Monte Perdido. Photos: M. Feller (left) and E. Feller (right).

Ordessa canyon from the summit (left); BCMC - Spanish party on the summit (right). Photos: M. Feller.



Izard (left) near Collado de Arrablo; descent (middle and right photos) into the upper Cañon de Añisclo (bottom 2 photos), with waterfall coming out of a mountain (2nd bottom photo). Photos: E. and M. Feller.

The trail snaked down the Cañon de Añisclo, which became heavily forested, first with conifers then with broad-leaved hardwoods. Large discontinuous cliff bands and cliffy peaks soared above. We started to encounter more people, some resting by swimming pools in the now quite large stream. The trail continued down valley to a trailhead at a carpark on a road, but we were aiming for a small town high above the valley. We left the main valley trail and took a side trail which switchbacked steeply up the side of the canyon. Talus slope sections of this trail offered unimpeded views of the spectacular Añisclo valley. There are 3 major canyons in the Spanish side of the central Pyrenees. Ordessa we visited on our previous trip. The Añisclo is the second – rugged and wild in a different way, and with far fewer people than Ordessa. Climbing out of the canyon, we crossed a small pass which took us high onto the slopes of the main Vió river valley, into which the Añisclo emptied. These slopes consisted mainly of dense shrublands – a degraded ecosystem resulting from clearing of the original forest, many years of grazing, then abandonment of the land. Our trail wound through a few small



Walking through iris meadows in the upper Añisclo (right above) to the lower Añisclo (right). Photos: M. Feller.

terraced abandoned orchards to the almost-deserted town of Sercué. Well preserved, but abandoned stone buildings clustered together, their owners having deserted them for areas offering a chance to earn a living. Beyond Sercué the trail continued its traverse through the degraded shrubland up to a flatter bench on which lay the small town of Nerín, which had remained viable as its inhabitants had adapted the town to tourism. With a modern hotel, our destination for the night, several small-scale commercial recreation enterprises (cross-country skiing in winter, hiking and sight-seeing in the summer), a bar advertising Australian Fosters Lager, and a charming ancient stone church, it had survived land abandonment, which was widespread in the region. After a long and strenuous 21 km day (400 m ascent, 1350 m descent), restaurant meals, the first warm bath in a week, and clean sheets awaited - a fitting end to a perfect trip.

Wai'ale'ale - Kawaikini (Kauai), 21-23 October, 2011

Peter Gumplinger

This is our first vacation to the Tropics. Our destination is Kauai, the Garden Island, and its famous Na Pali Coast Trail is our prime objective. But we have more time available so Silke researches other trails, of which there are many on Kauai, especially in Kokee State Park around Waimea Canyon (the "Grand Canyon of the Pacific"). She comes across the warning: "There is no trail to Wai'ale'ale - don't even consider it – experienced hikers have disappeared into the swamp never to be seen again". This advice, of course, peeks her curiosity and soon she finds online resources dedicated to the adventure of reaching the highest point on Kauai and what has the dubious reputation of being the wettest spot on earth.

Thanks to Bob Burd (Waialeale.org) and Don Nelson (COHP) there is good beta available and a chronology of recent sorties. Six years ago a 'Gang of Four' from the County High Pointers (COHP - http://www.cohp.org) took five days to reach Kawaikini, the actual summit of the Wai'ale'ale massif, and return. It took them 8 hours alone to forge and tag a mile-long section they ended up calling "Purgatory" (http://www.cohp.org/hi/hawaii.xml). Armed with this information, Bob Burd succeeded on his second attempt to reach the summit in a single day, hiking about as much in the dark as during daylight. We also learn from a forum post that all has likely changed in late 2011 with the completion of a fence by the Kauai Watershed Alliance. Pink ribbons had been sited in preparation for a new fence that is going to run the entire distance across the drainage boundary. Were such a fence to be constructed, it would certainly reduce the hardest portions of the route-finding to a triviality. The fence is meant to keep feral pigs out of the most fragile areas of the remote Alakai Swamp. We have to see for ourselves!

Although we aren't totally committed to this plan since Silke isn't very fond of bushwhacks, we rent a good 4x4 just in case. When a kayak in the off-season is unavailable to paddle down the Na Pali Coast, our vacation plans default to Wai'ale'ale.

The Mohihi-Waialae loop-trail affords access to the far reaches of the Alakai. Going in via Waialae Camp is much longer than coming in from the end of the Camp 10 road but the last 6-10 km of this dirt road can be muddy and deeply rutted. It's a serious undertaking during heavy rain and there are two places where streams flow over the road. The Kowaikoi stream crossing can be particularly sketchy. From the end of Camp 10 road it is approximately 18 km to Kawaikini with a net elevation gain of 500 m. We start the trip in the early afternoon and not without some trepidation, but only minutes into our hike we stop and feast on delicious strawberry guava. The trail follows the abandoned Mohihi ditch before it drops down and crosses Mohihi stream. It is well maintained here with wide strips of vegetation mowed down to the ground on both sides of the worn path. We are led eastward, parallel to Koaie gorge. We find short, metal mileage markers in this section, each one 1/4 mile apart, and pass an overlook bench with views of Waimea Canyon with its ever-eroding, multi-hued, serrated cliffs. Where once a rain gauge was mounted - only two vertical pipes remain - the trail goes from well-maintained to unmaintained. We find the unmaintained section quite good as it roller-coasts along a ridge before

Kawaikini in the distance above the Kaoie Ck. valley (left); Waimea canyon from the lookout bench (right). Photos: P. Gumplinger.

broadening and flattening out. At this point, mud holes become a factor and we very briefly lose the way trying to avoid them. The forest comes in multiple tones of green and we stop often to admire giant tree-ferns. We are in a mysterious world of ferns and ohia lehua trees, and although the vegetation is so much different from what we know, we feel instantly at home here. Four miles in, the trail veers right and descends steeply down to Koaie Creek, the largest tributary of the Waimea. We have no trouble fording the stream, its water reddish with tannin from the ferns, and arrive at the aluminium shelter, Kaoie Camp, probably built by and for hunters. Some old rubbish and musty blankets are lying in a heap at one end. A small table is in the other corner. No doubt there are mice but it is surprisingly dry inside. A good place for cooking meals but we will camp outside in our own tent. There are almost no insects at all in the Alakai, nary a mosquito or biting fly, so there is no need for bug spray. Sun sets fast in the Tropics and not so far from the equator there is a max 13 hrs of good daylight. I quickly recce next morning's continuation and find some white fabric ribbon and other flagging to the east of the shelter. It doesn't look convincing but since others have gone that way before, I think this is probably the route. However, Silke finds other less faded ribbons heading off at right angles to our entry clearing. I follow those now and confirm that she has found a better course. In the early morning, droplets begin to fall from branches on our tent. We had read that there is no appreciable change in creek levels during average precipitation, although it has been suggested to bring a rope for stream crossings. Kauai streams can rise within a few minutes from being benign and fordable to raging torrents. We didn't bring a rope.

Descending (top) down to Kaoie (bottom). Photos: P. Gumplinger.

At first the trail continues due south for a short distance and through some swampy spots that you wouldn't ordinarily think would be the trail. We are wading through shoulder-high uluhe ferns. This must be the fern grotto the online reports mention and we feel confident we are on the right track. The trail then heads steeply uphill with the occasional thorny blackberry vines lashing our legs and forearms. Key to handling the bushwhack section are long pants and a long-sleeve shirt. I am using a bamboo rod as my low-tech, lightweight walking stick. We have no maps, only printouts from Waialeale.org. The climb out of Koaie Stream canyon has one sketchy traverse where the trail has slid completely away. We use roots and branches for belay. Our venerable MEC rad-pants are getting soaked from brushing against the wet vegetation but our upper bodies are only

damp and mostly comfortable. Our short gaiters are getting soaked too and before long the wetness enters our Meindl leather boots. We'll just have to accept that our feet will be wet all day. We are on a poorer trail than yesterday evening, but one that is far more flagged, and we are quickly on our way to the 'Arrow' (22.09094-159.55096). The Arrow is an old landmark with the image carved in a fallen log. We are BC bush savvy and immediately recognize the turn-off even without the arrow and GPS. I continue just to confirm that our present trail makes the expected abrupt turn west and drops to a stream crossing. We eventually find the arrow behind a pile of wood debris. Oddly though, it is pointing the way we came. We leave it exposed for the next adventurer to see.

Immediately behind the marked log and turnoff are no flags, only a faint trail. One basically needs to transition from one indistinct ridge line to another roughly heading SSE to SE. We soon follow ribbons of various colours and ages. Some are blue but they too seem to go in the right direction. Blindly following flags in the Alakai can be folly and blue ones usually mark bird transects which we now also find at regular intervals crossing our path at right angles. These are line transects used in one type of bird census survey technique - a path along which one records and counts occurrences of birds. Just as the mud holes are getting more extensive, we suddenly arrive at a faded, orange cone situated at the edge of Sincocks bog. These badlands are alien and yet the scene looks familiar. We've seen this cone before in photos on the Internet. What is new is that there is now a brand new KWA (Kauai Watershed Alliance) galvanized steel fence-line extending to the horizon in both directions. The bog is a wide open area with short little plants and spongy ground. The low-lying vegetation is mostly lehua-maka-noe (a small shrub restricted to the high bogs of Kauai with leaves and flowers like those of lehua, in turn a tropical tree of the myrtle family with clusters of bright-red flowers and hard, durable wood). Beyond the new fence is an older lower fence with a red gate. We have seen that picture before too. Now, the final undertaking is to just follow this spanking new fence to Wai'ale'ale. We walk on top of a fence mesh laid flat presumably to keep pigs from digging under the barrier. That mesh also prevents us from sinking deep into the squishy ground. What a bonus! Twice we come across round circular enclosures evidently constructed to bait the pigs inside, with one-way gravity-held swinging gates on opposite sides. The pigs can leave but not re-enter. The fence is sited in a semicircular traverse around Kapoki, the severely eroded crater rim of this dormant volcano, around the largest caldera ever formed in all the Hawaiian Islands. We have completely avoided the main obstacle of previous parties, the "Trail of Destruction" - the one-mile bushwhack between Bogette and Kapoki. Away from the fence everything is a jumble and there are no recognizable landmarks. The hiking would be up, over, and around all manner of downed logs and other organic obstacles.

All the wetness is keeping us from sweating and being thirsty. Just as well because we brought nothing more than a litre of water each. In spite of this being the land of deluges, there are only a few spots with good water on the entire route. A slight drizzle had been falling intermittently since early morning, but typically in the Alakai, the drizzle has turned to a steady rain. The convenient fence mesh on the ground has come to an end. Soaked, and making no effort to avoid the wetness whatsoever, we splash through wet and muddy sections, water sloshing around inside our boots. We arrive at several nearly vertical slopes where we must grasp the fence posts for dear life or else we'd slip right back. We are careful not to stress the new construction too much. Sometimes we sink into mud holes up to our calves, creating enough suction to almost yank our boots right off. As we forge on, the trees are becoming more stunted from the wet, cool climate until it is treeless. We have arrived on the open range of the high plateau, an other-

Hiking along the fence, with Aloakai swamp behind (right). Photos: S. Gumplinger.

worldly place where not even the ubiquitous ferns are genetically programmed to deal with so much water and cloud cover. The fence faithfully follows a divide running west from the summit ridge a few hundred meters south of the Wai'ale'ale rain gage. It splits the Waimea and the Wainiha watersheds and is the district boundary between Hanalei and Waimea districts. Off the north side of the ridge is a magnificent shallow valley with a stream meandering across a broad grassy meadow. And then, 4.5 hours after leaving camp, we sense a demarcation. From the east, the wind is blowing up and over the lip of the rim making it quite obvious that we have reached the edge of an abyss. A combination of fog, driving rain and the strong wind obscure what would be a spectacular drop nearly straight down. The new fence keeps going, plunging into the crater, and only ends barely within view. We are getting a bit chilled and add Gore-Tex shells.

The helicopter tourist industry has taken to referring to the semicircle of cliffs along the summit rim as "The Blue Hole" or "Waialeale Crater", but it is an erosion feature. It is the box canyon at the headwaters of the west branch of the North Fork of the Wailua River. The rim is guarded by cliffs more than 900 m high consisting of wet, slippery and loose volcanic rock. The combination of chemical weathering and rain leads to the formation of the characteristic knife-edged ridges and near vertical Pali's or cliffs of Hawaii. It is misleading to call the exposed crud in Hawaii rock because it is more of a stiff clay.

We turn north searching for the summit pond, Wai'ale'ale ("rippling waters") and explore for the Hawaiian stone heiau (place of worship) called Kaawako. The tiny lake appears like a mirage as we blunder over an uneven surface in a complete whiteout. Rain keeps the summit shrouded most of the time so we are not disappointed. We spot the shallow, grass overgrown ditch that the ancient Hawaiians had cut, diverting some of the overflow east into the Wailua (Blue Hole) drainage. But we fail to conclusively locate the pagan heiau. We find a stone-encircled mound with somewhat different vegetation and a recent skid mark from a helicopter landing nearby so we declare this feature to be the remains of the altar reverted back to nature.

Rippling Waters. Photo: P. Gumplinger.

In ancient Kauai, Mount Wai'ale'ale was a most sacred place. Each year, Hawaiian chiefs and priests would climb Wai'ale'ale's steep eastern face. Conventional wisdom says the ancients were able to reach the rim by climbing steeply up a ridge and over the prominent false summit Pohakupele (Pele's Rock) to the upper plateau of Wai'ale'ale, where they would make offerings of flowers and wreaths to their god Kane, the god of creation and fertility. The rest of the modern story is that this path was last climbed in 1874, once even by a haole (white person), but a rock slide has since made the treacherous route impassable.

We return and climb the small hillock on which the famous rain-gauge is located. This point is designated Wai'ale'ale (1570 m) and marks the eastern edge of the Olokele Plateau. There are various generations of rain gauges to be found, but only one appears to be in operation - a white cylindrical container with an open top several cm wide. In some years this is the wettest place on earth: 11430 – 11810 mm/year. The online real time data (http://waterdata.usgs.gov/hi/nwis/uv/?site_no=220523159341201&PARAmeter_cd=00045) shows that rainfall sometimes reaches a brutal 100 mm/hour. We take the obligatory photos and hurry back to the new fence.

The true summit of Mount Wai'ale'ale is 1598 m in elevation and located at Kawaikini ("waters-in-multitudes"), a separate peak connected by a narrow neck to the plateau. With the Mountaineer in mind and knowing that our report would be incomplete without actually reaching this highest point we press on. Unlike the area around the rain gauge and pond, the ridge south to Kawaikini is narrower and we are forced to keep near the ridge to avoid the ever deepening ravines to the west draining toward Olokele. With visibility limited to about 60 m, we can't tell just where the summit might be so we follow the undulating rim up and over various smaller bumps along the way. A dark, almost black feature appears in a ravine. Upon closer examination the mirage takes on the form of a large boar. The animal is looking at me and appears unfazed. It seems to me as if I am having a stare-down with a black bear.

Is that how feral pigs on Hawaii behave when confronted with a human? They are hunted so is this beast brave or dumbfounded? Suddenly it hightails and sprints out of sight. The evidence of their rooting is abundant as we continue in search of the summit. In the end, the summit is little more than a bunch of grass and small bushes. The GPS comes out for the first time and confirms that we are indeed on the summit - Kawaikini 22.05775 - 159.49699.

The whole day had been in the twilight with cloud cover. Momentarily forced away from the rim by the topography, with all the views looking similar, it is very easy to get disoriented. And I do - my foggy brain starts messing with me! A shallow ravine into Olokele looks for a moment as if it is the big cliff itself and I begin to walk in the wrong direction. Even the wind is of no help as it seems to shift direction. I had failed to take a GPS way-point where we had arrived at the fence. I just didn't think I could possibly miss following the rim. Fortunately, Silke remains cool and quickly points me in the right direction again. Back at the fence we are rewarded with a fleeting glimpse of the Blue Hole and a cascading waterfall. It has been two hours since we arrived at the rim and it is time to go back. The return slog is uneventful, but the puddles seem larger than before. The weather improves a little and near Sincocks bog a lone helicopter is seen flying low across Alakai Swamp. How did he get here flying visual flight rules? The plateau is still mostly shrouded in mist and there are billowing clouds all around us. The helicopter seems to be en route to the Na Pali Coast. We are glad now for the inclement weather and the sense of adventure all day. This is a cut above swarms of tourist helicopters buzzing overhead. We arrive back at camp after another 4.5 hours, making it an 11 hour return trip.

Day 3 dawns clear and we have an enjoyable hike back to the car. For a second time we admire a stand of Sugi pines near Mohihi stream. This aromatic evergreen is a member of the redwood family and grows in Hawaii to around 25 m in height and 45 cm in diameter. Nearing the end of our foray into Aloakai Swamp it dawns on us that we hadn't seen very many of the beautiful endemic birds that can be found nowhere else. Close to the trail head we meet an Hawaiian dressed in camouflage pants and a bright orange t-shirt with a heavy caliber hunting rifle in hand. He relays our arrival to his friends with his walkie-talkie. On the Sunday drive out there is more traffic and many rental Jeeps on the road. We change and wrap our filthy smelly clothes into plastic bags, odour tight, as best we can, before they go inside our luggage. The wash won't happen until we are back in Canada, and who knows, the famous, red Kauai mud stains may never be liberated.

Hiking the southern (and best?) section of the John Muir Trail, 6-18 September, 2011

Brian Wood

My bucket list has included hiking the John Muir Trail (JMT-340 km) for many years and its time had finally come. The JMT overlaps a small portion of the Pacific Crest Trail (PCT-4000 km) as it traverses Yosemite, Kings Canyon and Sequoia National Parks in California, so most hikers are required to comply with the rules pertaining to the US National Park Service (NPS). The trail traverses many passes and valleys in the Southern California Sierra Nevada with tens of thousands of metres of elevation gain and loss. Following my wife's sage advice to act my age, I cherry-picked hiking the southern portion only. This has about 7600 m of elevation gain (and slightly less elevation loss) and some say is the most scenic long trail in North America. As all our campsites would be above 2400 m, and much of the trail is above 3000 m, and massive trees can grow at these elevations, we knew it would be quite different from a hike in our BC Coast Mountains. I advertised the proposed trip in the BCMC media for several months providing some info and links to very informative websites, but most of those who had expressed interest initially eventually backed out, leaving just my brother, Peter, and me.

We planned to hike about 180 km from north to south which is about half the JMT trail length and we would try to fit in an ascent of Mt Whitney (4420 m) if our condition and the weather worked out. As in any end-to-end hike, a vehicle shuttle was required which complicated trail head access, especially as

there were only two of us, and public transport or hitchhiking were not really options. Another complication was that this JMT section was very isolated and re-supply would be onerous so we opted to carry all of our supplies, i.e. no food cache. While the trail quality is excellent, we knew the rugged terrain would take its toll on our resolve, so we limited ourselves to hiking about 15 km per day. The hike would take us about 12 days, and allowing for one rest day or bad weather day and one reserve day, we would need two weeks of supplies. As we using a siliconized nylon single wall tarp-like tent we had hoped that our packs would be less than 23 kg each, but when we included our NPS-approved bear-proof food canister (over 1 kg each) at the start we found that our packs weighed exactly 23 kg each. I should add that many JMT/PCT hot-shot "thru-hikers", travelling 30-45 km per day would cover the whole 240 km of the JMT in 7-10 days, and many would have packs weighing less than 10 kg as they re-supplied regularly to reduce pack weight. Dedicated lightweight thru-hikers would also plan to camp by strategically located "bear-boxes" at larger camp sites to avoid having to carry the food canisters. The bear boxes were at greater spacings than our projected daily distances. Also, we are old fashioned and enjoy creature comforts such as hot meals and drinks, and preferred to have spare clothes if it got wet or cold. In addition, we were determined to have time "to smell the roses", enjoy the views and the campsites and not have to hike in the dark as some of these hot-shots do. Note that the NPS prefers that hikers camp in areas that have been previously used as campsites, but there are many options because the JMT has over two hundred reasonably cleared camping areas that are often visible from the trail. This simplified planning considerably.

To set up the shuttle, we unloaded my motorbike (1979 and dirty, so not appealing to thieves) from Peter's truck at our exit trail at Whitney Portal near Lone Pine on Highway 395. We then drove in Peter's truck down to Hwy 395 then north to pick up our two bear proof food canisters at Bishop USFS office. These cost $10 each for two weeks. Continuing north and then west over Tioga Pass we entered Yosemite NP, but as it was Labour Day with long line-ups it took us nearly an hour to get into the park. We had a chance to watch some climbers in Tuolumne Meadows, then drove west and south through Yosemite NP to pick up our reserved Wilderness Permits at Prather. After camping at Mono Hot Springs Resort, followed by a quick dip in the hot springs, we parked the truck at the Florence Lake Resort, packed our food into the NPS containers, and loaded them with our other gear into our vintage Serratus backpacks. Finally, at 12.30 pm on Tuesday 6 September (the day after Labour Day) we left the resort in hot sunshine with a few other hikers in the resort's boat (saving ourselves the 6 km walk along the lake) and started the hike from the east end of Florence Lake. After walking about 8 km, our first stop was the old Muir Trail Ranch which is a popular re-supply depot for JMT/PCT thru-hikers. As we had only just started we were "maxed out" with food and could not take advantage of all the free unclaimed hikers' food which was offered by the ranch. We were sure that we could have fully supplied ourselves with all the food we needed for our trip as there were many full buckets from which we could select high quality trail food. The ranch has a policy that any food remaining unclaimed after a couple of weeks from the pick-up date stated on each bucket is donated to the local food bank, so the local poor folks are probably very familiar with what the average hiker eats. We walked another few km to our first campsite which was at the junction of the JMT and the Piut Creek Trail. The site was open and located under some tall Jeffrey pines. Already there were several groups with whom we compared notes on gear, weights of backpacks and lengths of trips. Our food was simple and lightweight and was cooked by pouring boiling water and soaking the food for five minutes in our plastic measuring cup which we insulated to save fuel and pot cleaning. Bugs were negligible as it cooled down at night - another good reason for travelling after Labour Day

The next day dawned clear and cool, but soon warmed up as the sun rose. After the usual morning aches, we started walking at about 8.30 am, making us one of the last to leave the camp, which was not unusual as some folks believe in very early starts. Consequently there were few parties on the trail. We soon entered Kings Canyon NP and started the gentle climb up Evolution Valley where we forded Evolution Creek which was quite low at that time but can be very high in the early season - another

reason for going after Labour Day. The valley was very scenic and we soon arrived at the McClure Lake Ranger Station where the ranger warned us of the typical weather pattern of clear cold mornings, often followed by clouding over by noon and a short electric storm often with precipitation in the afternoon. In fact we experienced this predicted weather only occasionally, so it seemed that their weather forecasting is about as good as ours! The walk up the valley was very scenic with rocky ridges on both sides and the surprisingly tall trees became scarcer as we approached our camp which was about halfway up the climb to Muir Pass, and located in some tall lodgepole pines below some steep switchbacks where there was no camping for several km. Camping at about 6.30 pm meant we were making supper in the dark, and we noted that many other hikers kept on arriving late into the evening.

On our third day our routine became more efficient and we were on the trail before 8 am because we had to climb over 800 m to get over a pass before the predicted storm. The day started by ascending a long series of switch backs which were well engineered in the steep slopes, and after passing several scenic but exposed alpine lakes we joined a few hikers in the rock igloo-like Muir emergency shelter at the pass (3650 m) at about 3 pm in windy cool drizzle. The descent to our next campsite was relatively quick, across some snow patches then down some well engineered switchbacks and across talus slopes where we saw hoary marmots who did not seem to whistle as much as their Canadian cousins. We could feel and see a storm sweeping down the pass behind us but we could not camp at our first choice because of camping restrictions to protect the habitat of an endangered frog, a restriction that seemed to be respected in spite of the number of folks who pass that way. It was getting colder and the sky was getting even darker as we hurried on and at the next available spot we quickly pitched the tent to avoid the short heavy rainstorm. This campsite was particularly scenic and the tent was sheltered by a small stand of beautiful whitebark pines

Day 4 started with clear skies and beautiful wide views as we continued our gentle descent, made possible by blasting a trail across big smooth slabs, which seems typical of the USNP approach to trail building in rugged rocky terrain. Eventually we crossed Big and Little Pete meadows where there were peaceful pools with large areas of tall grasses providing good habitat for many birds. Near here we thought we saw two blue grouse. Le Conte Ranger station is located at the low point of this trail section which is near a junction with Bishop Pass Trail which provides one of the few access trails to the “outside world”. Our north-south 180 km section of the JMT was intersected by several generally east/west trails which access the outside world, usually over at least one high pass. These trails are used as re-supply routes or bail-out routes for thru-hikers and as portions of loop trails for those hikers who hike only a short section of the JMT. Most of the people we met seemed to be “mini-thru” hikers on 5-6 day loop trips because this time of the year was considered a bit late in the season for the full JMT or PCT thru-hikers. We then ascended a short section of the Middle Fork of the Kings River but soon left this river to follow Palisade Creek. We camped near the base of a steep section called the “Golden Staircase” which we decided to do the next day as there would be

Heading to Muir Pass (top); descending from Pinchot Pass (bottom). Photos: B. Wood (top); P. Wood (middle, bottom)

no good camping for a few km. We were glad we stopped there, as it was a nice area and we managed to pitch the tent before the evening shower arrived.

We left camp at about 8 am to climb up the Staircase which is a series of tight switchbacks ascending a relatively narrow “gulley” on what looked like a headwall just below the Palisade Lakes, again under clear skies and sun. We were on the east side of the next pass, Mather Pass, so the temperature was good for the climb, the views behind us were magnificent and we had a few marmots for company. Once over the headwall, we had a gentle climb past the scenic Palisade Lakes and the last stand of trees, then another series of switchbacks with patches of snow on the north side of the final ridge over a pass. There we met another group of hikers heading the other way, so we had a rest and the usual chats and exchange of experiences. The descent from Mather Pass was impressive in that the terrain from the ridge looked really steep, but the trail negotiating the steep face was well engineered and we had excellent views ahead of us overlooking the Upper Basin which had many small lakes in rocky hollows. A surprising variety of wild flowers were still in bloom and looking very healthy. We had planned to have an extra night there to enable us to explore the area for one day without a pack, but the weather looked threatening as we pitched the tent in a grassy hollow at about 4 pm. This was an early stop for us but we wanted a high camp as the terrain seemed quite tent friendly. This area was very open and we noticed some other campers some distance away who were having trouble pitching their tent in the rising wind.

After a windy night we woke up to a light covering of snow, which was not very surprising as we were at 3500 m and it was definitely quite cold. The clouds were low and there were minor flurries so we stayed in our bags until 9, giving the weather a chance to improve. Soon the weather did improve and we continued our descent following the South Fork of the Kings River. At the low point of our trail section (3300 m) we crossed the Taboose Pass trail and started the gentle climb towards Pinchot Pass which was quite close 450 m above us and about 5 km away. At 4 pm we stopped at the last good site before the pass and quickly pitched the tent as the rain, wind and hail started, as usual for a relatively short burst, followed by a dry cool evening.

We started Day 7 at 7.30 am in cold and clear weather with a surprising amount of ice inside and outside the tent. We noticed a lot of black smoke that did not stop once the MSR Dragonfly finally started roaring. Large flames and smoke came from the base of the burner, so we finished boiling the water as fast as possible then checked out the stove when it was cool. The base of the burner elbow had a hole which was bigger than the regular fuel jet and lots of fuel squirted out of the hole when the pump was pressurized and the stove inverted. We assumed we would be

Brian descending cliffs beside Lone Pine Ck. (top); Mt. Hitchcock and Hitchcock Lakes (bottom). Photos: P. Wood (top, bottom right); B. Wood (bottom left).

losing more fuel through the hole than the regular jet, and this would soon burn up our fuel supplies, as well as being somewhat dangerous. We tried plugging the hole with a short length of diaper pin from the first aid kit as this pin was fatter than a regular safety pin. For those wondering about this diaper pin, it was a 35(?) year old baby diaper pin from my kids, not an adult diaper pin - we were not there yet! For good measure we held the pin in place with chewing gum and thin stainless wire. By the time this was completed (but not tested) it was 10.30 am and the weather had warmed up which made our last km or so to the top of Pinchot Pass very pleasant. We arrived there before noon. At over 3600 m the Sierra passes are quite bleak, but we did not have to descend very far before we were in tall trees with many flowers where we enjoyed a leisurely lunch in hot sun. We carried on, descending along Woods Creek and at about 4 pm near some spectacular water chutes over smooth slabs we decided to camp as we were well below 3000 m and thus were permitted to light a fire in case Repair Plan A did not work, which we soon found to be the case. As the stove still produced lots of smoke and flame, and little useful heat, we boiled our water over our first (and last!) fire of the trip and discussed Repair Plan B. We knew we would have problems without a functioning stove as many of the campsites were above 3000 m above which no fires were permitted. Repair Plan B involved plugging the hole with a screw from sunglasses, but the screw was a bit too small and was barely held in the hole, and so we tried chewing gum and thin wire again to hold it in place. A short test after dinner found that the stove did not work at all, and all we got was a small leak of fuel from our barely plugged hole and no fuel through the regular jet! This was discouraging, but was soon remedied when Peter realized that the screw point was jamming the shaker jet device into the regular fuel jet, and blocking it completely. Thus Repair Plan C involved unscrewing the regular fuel jet, which proved to be very difficult, removing the shaker jet device, and re-installing the regular fuel jet. After this final tweaking, we had most fuel coming out of the proper fuel jet and very little leaking out of the almost plugged hole, so thankfully we seemed to be back in business. As it was then dark we decided to test the stove properly at breakfast, and after a quick warm up around our fire - very welcome - we retired into our sleeping bags to escape the rapidly falling temperature due to a beautiful clear and very starry night sky.

The next day dawned clear and cool, and we tested the stove successfully when making breakfast. It seemed that the chewing gum squashed around the screw soon charred with the heat, possibly helping to plug the hole even more, as there was very little smoke and flame. If this repair worked for the next week we should be able to survive. Most of our food required cooking, so we were quite relieved. We followed Woods Creek to a trail junction, then crossed it on a magnificent steel suspension bridge - wow the US NP Service do a great job on their bridges! I guess it is better than having to pull bodies out of the creek as many PCT thru hikers coming from Mexico have to cross this creek early in the season when the river runs really high. Soon the day warmed up as we climbed gently along Baxter Creek catching views of magnificent peaks further up the valley. We met a friendly ranger (yes, rangers still exist in the US!) hiking down the valley and he told us we should check out his brand new replacement cabin at Rae Lakes as it had just been finished the day before. The scenery along the trail kept on improving as we passed beautiful lakes and had a magnificent view of nearby Fin Dome and the more distant peak of Painted Lady by Glenn Pass. We arrived at the new Rae Lakes cabin (3210 m) by noon and mentioned the leak problem with our stove to the two young workers. We were immediately supplied with their left-over tubes of JB Weld which was probably better than our chewing gum for plugging the hole in our stove. We also scrounged some extra white gas to compensate for the extra gas we had been burning through the hole, so we felt well prepared for the rest of the trip. The two workers were very excited as they were leaving for home the next day, having been there in the wilderness for months. They had just varnished the floors in the very smart log cabin. The cabin was made from a BC log house kit (Pacific Log Homes!) which was surprising considering the current “Buy American” policy of the Federal Government. At this cabin we met another party which had one person whose boot sole had totally come off the boot (a disintegrating foam plastic through sole?). He was expecting to complete his portion of the trip using his flip-flops. This is another argument for carrying “Crocks” or




Between Mather and Pinchot passes (left top); ascending Pinchot Pass (right top); Peter near Woods Ck. campsite (right bottom); Junction Pk. seen while ascending Forrester Pass (bottom left). Photos: B. Wood (left top, right); P. Wood (left bottom).

their knock-offs, as they are much better to walk in if one's boots disintegrate, or for fording creeks. However, we also met a hiker who was planning to walk the whole JMT wearing rugged New Zealand-made flip-flops, so who knows what is really necessary on these good trails? After crossing the narrow neck of land which provided the trail between the Rae Lakes the weather seemed more threatening so we thought we should have lunch before the final climb over Glen Pass. We met more folks here than usual probably because of good camping in scenic areas which are accessible via Kearsarge Pass, a reasonably convenient access route to the JMT on the other side of Glen Pass. It took us about two hours to climb the remaining 3 km or so to the top of the pass where we met more folks than ever, sitting around admiring the views. During the descent the skies darkened but the rain held off until we reached our camping area at dusk near Bullfrog Lake. There we had a short shower followed by a dry and clear night.

Day 9 dawned cold with ice inside and outside the tent but it soon warmed up after breakfast, so we took the time to dry the melted ice from the tent and substituted JB Weld for the charred chewing gum to hopefully improve on our repair job. We knew the JB Weld (2-part epoxy resin) would probably not cure at the prevailing temperatures, but it was worth a try and it might cure before it charred in the heat. We were on the trail by 11 am, continuing our descent to Vidette Meadow, then starting the climb along Bubbs Creek beneath the Kearsarge Pinnacles. Forester Pass at 4020 m was the next pass and our highest so far. It had a long high approach without good campsites, so we decided to camp at the last reasonable forested site (Center Basin Creek) before the higher section in case as the weather looked like it was going to deteriorate. It was only 2.30 pm and we had not climbed much that day but our weather forecast soon proved to be correct and we could shelter from the usual afternoon storm, this time of hail. Also, perhaps we were having too many cool nights and did not want to test our new tarp-like tent in high winds. A solo hiker arrived at our campsite in the dark at about 8 pm, after having crossed Forester Pass in the hail storm. This hiker left camp in the dark at 6 am the next day, so I guess he had a lot of ground to cover, probably to his next food cache.

The next day started off as cool and clear, and the gentle but long hike over bare rocky terrain and past a few bleak lakes to the top of the pass was very spectacular as we were crossing the Kings Kern divide which defines the border between Kings Canyon and Sequoia National Parks. As we approached the top of the pass we crossed long sections of quite hard snow and we kept on wondering how the two guys wearing flip-flops managed. Luckily there was a fairly deep set of tracks across the snow which might have saved them from a long slide to oblivion, but it must have been cold on the feet. At the pass

at 11 am we met a three-generation family of hikers where the grandfather was wearing his normal hiking gear which included sandals and gaiters, so perhaps it is we who were “out of step” with our high-cut leather boots with Vibram soles. We chatted and compared notes for an hour before scurrying off in opposite directions following an onslaught of wind and hail, which again did not last long and one does not get very wet in a short hail storm. Our long and gentle descent finished by crossing Tyndall Creek after which we started the climb to the Big Horn Plateau , which we had seen from the high trail from Forester Pass. The plateau was unusual as it had scattered stands of tall pines, perhaps Foxtail or Jeffry pines, and the ground had little underbrush growing in the rocky sand. When the trees die they can stand with bare trunks and branches reaching upward; when they fall their bare limbs add to the surreal atmosphere of the plateau which also had a lake in the middle, with little vegetation around it, presumably due to the winds. We had thought of camping there, but it seemed so exposed, it was still early, and we felt we should make up for our recent short distance day, so we decided to head down to Wallace Creek in the valley. This was a good decision as we arrived there in ample time to have a leisurely meal in a very pleasant setting.

Large pine trees near Bighorn Plateau (top) and Palisade Ck. (bottom). Photos: B. Wood.

Day 11 had perfect weather all day and we started off at 8.30 am by climbing gently through a beautiful open forest containing some large pines, similar to the plateau of the day before. Shortly before Crabtree Ranger Station the PCT separated from the JMT and continued south to ultimately reach Mexico. As we passed close by the ranger station we noticed a large plastic box positioned close by the trail to make sure we could not miss it. The message was quite clear - we were then entering the “Whitney Zone” which is a very regulated, high use area where one is not permitted to dig cat holes for burying solid human waste. Instead of burying it, one packed it out. They kindly supplied detailed instructions and two plastic bags per person, a medium–sized garbage bag and a smaller zip-lock bag. The larger bag was to accommodate poor aims of solids only, and afterwards one put the large bag, with air displaced and well folded, into the smaller bag which was then zip-locked. Thus, from there to the trail exit (two nights away for us) one had to not only “pack out your garbage” but also “pack out your poop” in the “wag-bag” provided. Special containers were at the trail head for disposing of wag-bags. As dog owners are supposed to “pick up after their pooch”, rules for using a human wag-bag are probably an inevitable progression! We were told that there was good compliance with this rule, and certainly we did not see signs of toilet paper or waste in most places. The next section of the trail became more spectacular as we progressed east and climbed gently towards the very long N-S ridge which runs for kilometres between 4000 m and 4300 m and has Mt. Whitney as its highest point. At tranquil Timberline Lake we stopped for a snack and contemplated the map to decide where we might camp, then moved on, passing above Guitar Lake while admiring the trail builders who engineered the final sections of the trail up the imposing west face of the ridge. In the midst of a rugged landscape of boulders, rocks, sand and small lakes we found a reasonably sheltered flat spot by about 3.30 pm at about 3600 m, which was our highest campsite yet. The weather was the best we had experienced for days, and it seemed perfect for camping at this spectacular site so we relaxed and aired our sleeping bags as we knew it would be a cold clear night. While it was clear overhead, we had some clouds to the west that provided a little colour for one of our few sunsets on the trip.




Views around Mt. Whitney - Pinnacle Ridge from the South Ridge (left top); Mt. Whitney from the east (right top); Fin Dome and Dollar Lake while ascending Glen Pass (right bottom); high on Mt. Whitney (left bottom). Photos: B. Wood.

Day 12 dawned clear and cold after a very calm night, thank goodness. By 10.30 am we arrived at the junction with the short trail from Trail Crest (4160 m). Trail Crest is a ridge walk which is the normal access to Mt. Whitney's summit from either the east, the very popular and shortest approach from HWY 395, or the west - which was our route from JMT and PCT. As that day was Saturday and it might be the last good day for the season, we knew there would be crowds, but we were not prepared for what we saw. Hikers were everywhere, mostly travelling very light, some even without day packs so the weather forecast must have been good. Anyway, following common practice we cached most of our heavy gear there, and joined the mob whose members were travelling light along the last few km of the ridge trail to the summit. As expected, the trail was well engineered but quite airy in parts with steep drop-offs down the almost vertical east face which is the classic climber's route. Looking down it was hard to imagine that the 1931 first ascent route is now rated at "only 5.7" which in those days with the old gear would have been much more intimidating and difficult than with today's gear. As the trail was well above 4000 m, some of the day hikers (most of whom were much younger than us) were having altitude problems as they had had no chance to acclimatise, whereas we older folks had been living mostly above 3000 m for nearly two weeks and were well acclimatised. I am sure that those folks in runners or sandals with no hiking poles had a few tense moments crossing several patches of hard snow on the trail, but luckily much grit was embedded in the foot holds. At 1 pm we arrived at the summit and examined the rugged rock-walled emergency hut sprouting various antennae and lightning conductors. I was sure that that area could have some horrendous weather at any time of the year, and we were lucky to be seeing the whole area at its very best, apart from the crowds. Looking east and down we could see about 3 km of vertical relief over about 12 - 16 km of horizontal distance to Hwy 395; looking west the mountains were

much closer. After enjoying the view for about an hour we retraced our steps back to our packs near Trail Crest, had lunch, then set off to descend as far as possible to escape the crowds. The initial descent from Trail Crest soon got into an impressive series of 100 tight switchbacks which seem to last forever. We were thankful that we were descending and felt sorry for those still ascending, even at 3 pm. I expected there would be many using headlights to get back to the popular campsite at Trail Camp at about 3650 m that weekend. We passed Trail Camp and were amazed how many people had squeezed their tents between the boulders, the trail and the lake. Also, it seemed like a party atmosphere was building up, so I assumed there would not be much peace for sleeping there that night. Consequently we carried on down the trail and found a nice site at about 4.30 pm above Mirror Lake, and we still met many folks coming up past our camp. Our site was not a large area for camping but many others had managed to squeeze in their tents, and we chatted with some interesting mini thru-hikers camping near us. We had been told by a ranger that over 20,000 hikers per year pass through the Whitney Portal trail towards Trail Crest, and having seen the crowds that day we could believe that number.

The next day we said our long farewells to our neighbours and by 10 am were descending in warm sunshine, passing many hikers ascending. We arrived at the Whitney Portal parking lots at about 1 pm, and after lunch and packing the motorbike, were on the road at 2.30 pm for the start of our 600 km vehicle shuttle back to the truck. The 1500+ m descent to Lone Pine was done mostly in second gear and by the time we arrived at the bottom I was getting used to the heavily loaded, top-heavy bike with the light front wheel. We motored in warm sunshine to Bishop to return our bear-proof containers to the USFS, then found a motel where we could wash up and repack more efficiently. The next two days provided us with perfect biking weather to drive in tee shirts, windbreaker, and shorts through Yosemite, and back to Florence Lake to load the bike onto the truck and wander back to Canada via the Coastal Redwood Highway where the huge trees impressed me even more than when I first saw them nearly 50 years ago.

In summary, in spite of the logistical complications with the vehicle shuttle and carrying all our food, this trip was well worth it and of course our luck with the weather gave us a good impression. You now know that the JMT/PCT does not follow the actual mountain range crest as the name, Pacific Crest, implies. Instead it crosses many passes through the ranges which are accessed by good trails in high valleys, and in theory at least is made for pack animals, although we saw very few except at the Muir Ranch. Nevertheless, due to the trail's elevation and its isolation, there are many factors, such as the unpredictable weather, creek crossings, and many residual snow patches, which could make route finding tricky early in the season. Those who want a more challenging, less crowded, and more consistently higher route, should check out the 310 km Sierra High Route, most of which is not on trails and requires map reading skills. The high route traverses timberline country from Kings Canyon itself to north of Yosemite NP. Perhaps my story will inspire others to try this lesser known route, which has good maps and guide books. One advantage of travel before Labour Day is that there are free shuttle buses in Yosemite NP, which simplify access to the north end of the JMT, but the trails and camping areas are much more crowded so one must make wilderness permit reservations much earlier than if you start after Labour Day. Even this late in the season, there was no problem finding water at or near the campsites, many of which were close to the trail, and we only used our chemical water treatment occasionally. You might note that our many years of combined experience, plus good weather luck, enabled us to do the whole hike in daylight without having to wear rain gear, except for short periods at camp. Thus our epic-avoidance protocol worked well for us, which proves the old saying about "old mountaineers, but not old and bold mountaineers". When US trails are compared with those in Canada, especially trails in BC Provincial Parks, the US trails are much better maintained and the camping areas are amazingly clean, even if most camping areas do not have toilets. In addition, we paid NO parking fees at either end of the trail, and while we chose to reserve our wilderness permit (cost $15 each) to ensure entry when and where we wanted, if one's dates were flexible one does not need to reserve a wilderness permit so these trails could be used freely.

Southern Coast Mountains / Cascades

Canyoneering in western North America

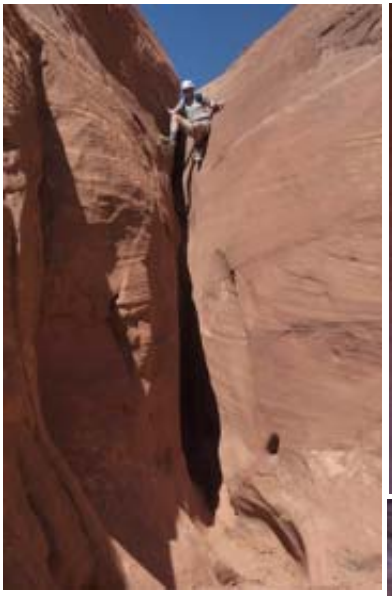
Kevin Swanson

The sport of canyoneering goes by many names in various parts of the world: canyoning, creeking, gorging, etc. Some call it “hiking with ropes.” Others refer to it as being “kind of like fun, only different” - a sentiment to which many outdoors enthusiasts can well relate.

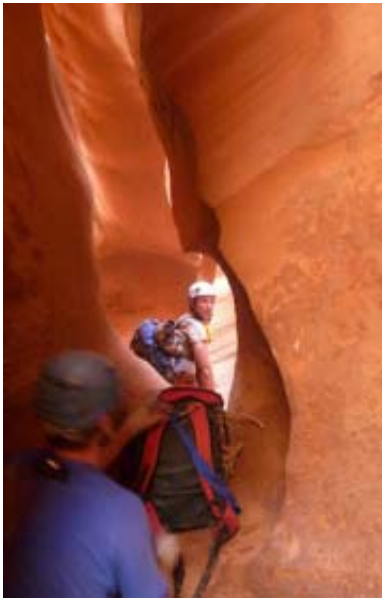
My forays into canyons began with non-technical canyon hikes in the American desert southwest, but I soon wanted to be able to explore further, to see what was below that pouroff, to see what was above that dryfall. When I learned that people actually rappelled and downclimbed into those places, I had to join in.

Since then, I’ve gained dozens of new, fantastic friends, and travelled to some incredible – and incredibly challenging – places. I have discovered that people have explored canyons here in our own backyard of Southwestern BC, and that more people are interested in continuing to explore.

The challenges of canyoneering, the teamwork involved, the beautiful sights seldom seen by others – all contribute to the draw of the sport, and I look forward to many more years of experiencing these special places.



Kevin (white shirt and hardhat) and friends in Egypt 1 canyon in Utah.Photos: K. Swanson and K. Swanson collection

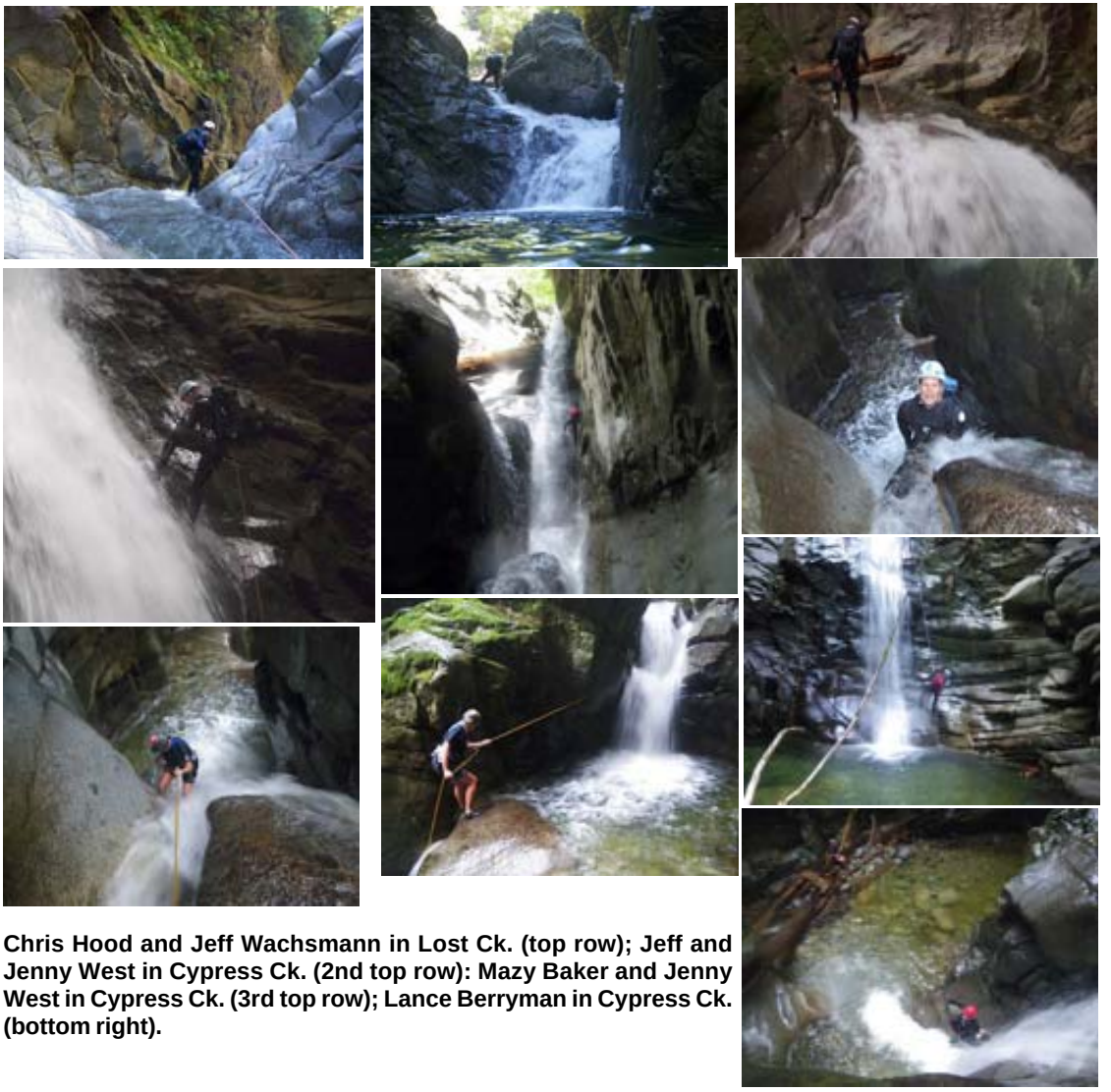







Kevin and friends in Neon Canyon (top row), Birch Hollow (middle row and right bottom), and mystery canyon (middle bottom). Photos: K. Swanson and K. Swanson collection.

Canyoneering in SW B.C. North Shore mountains. Photos: K. Swanson



Chris Hood and Jeff Wachsmann in Lost Ck. (top row); Jeff and Jenny West in Cypress Ck. (2nd top row): Mazy Baker and Jenny West in Cypress Ck. (3rd top row); Lance Berryman in Cypress Ck. (bottom right).

Bighorn (1924 m) – A wet bash around its slabs, 1-2 October, 2011

Karl Ricker

This epistle might be re-titled: “Coquihalla-Coldwater (aka “Coldcoqu”), A Missed Adventure on Sev’s Route”. Sev Heiberg saw a route to Bighorn while climbing Alpaca by a north face route in 1984. At the time, it was an easy ramble to the Vicuña-Alpaca col from the upper Coldwater logging road which terminated under Guanaco Peak. From the col Sev saw what appeared to be an easy stroll along the

base of the north face of Alpaca on granitic slabs to the mountain's lengthy north-west ridge. That terminates as a rising exfoliating dome of slabs - Bighorn Mtn., which has an elevation of 1924 m from the provincial 1:20,000 scale TRIM maps. Along the way to this ridge there is a tarn nestled inside a fairly recent moraine, just beyond the north face, which would be an ideal overnight campsite to launch the limb on Bighorn. Sev had a good plan, provided the trip could be done on a dry weekend – wet slabs are not my cup of tea! I dithered on scheduling the trip but finally my conscience caught up.

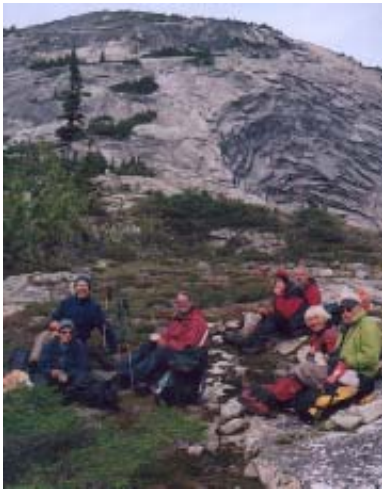
However, since 1984 the status of the upper Coldwater road has been slow degradation; logging has ceased in the basin years ago, and its current state put the whole proposal in question. Ed Zenger, who had been there in the upper Coldwater in recent years, said we should go to Bighorn via the Anderson River roads to the west, because he had current info saying they were okay and would easily put us at the base of the peak, but he neglected to say what lay above the road! The suggestion didn't sit too well, being determined to fulfill Sev's dream. Besides, recent stories on the internet described the Anderson approach as a tough, bushy grind, and hardly appealing. The Coldwater-Coquihalla approach was far shorter than 27 km of twisty logging roads along the Anderson. Furthermore, the Anderson hardly fits the billing of a Coquihalla trip(!), although that criterion was not always followed beforehand.

On the way home from the Rockies in late September, I picked up Norm Hansen at Merritt to check out the Upper Coldwater on a very wet day. Reaching the Little Douglas campsite at km 7.8 was no problem, but thereafter a tunnel of low alders hung over the road which slowly worsened and brought us to a halt at km 11.6, about 1.5-2.0 km short of where we would leave the road and push up to the Vicuña-Alpaca col – the route to Bighorn. But the cars would have to be taken back to near Little Douglas to find room to park them, and the milieu of wetness in the bush, a descending snowline, and potential slippery slabs did not augur for a successful venture. The trip was only 5 days away. I acquiesced and opted for Ed's suggestion, assuming he would be with us to lead the venture, his way!

The meeting place for the trip was the brown funky store at Yale – at least we could get a coffee there. The weather forecast was not good. Four opted out by Friday night, leaving us with nine plus a dog. Come 3 p.m. on Saturday at Yale, everyone showed up except one. Where was Sir Edmund? A phone call to him at 3:30 pm drew no response. We left in the misty drizzle without him. He could find us on his own. Fred and Alice, with map in hand, did a great job leading the procession, erring only once onto a fresh spur road which ended far above the valley floor beneath a mountain labelled: "Mt. Hazleton", on the Backroads of B.C. atlas. Bighorn was about 2.5 km to the south-east. Descending, the now unused main road was gingerly driven to a point directly below the objective, and camp set up thereon – 4 tents plus Heinz and Emily's luxurious camper van. Fred countered their luxuriousness with a dining fly and table set between two vehicles! Eventually, the drizzle ceased, the clouds parted, and provided a stunning view of Reh Peak across the valley. Sir Ed was salivating over the challenging rock of Reh, but failed to show up. The evening glimpses of Bighorn showed the sloping slabs directly above us which we had to avoid. On Sunday morning at 8 a.m., I directed a walk up the road to a less-challenging position at grid 300 030 and, unfortunately in the midst of old logging slash, to begin the uphill grind to miss the slabs we saw from camp. John led a very walkable route through the milieu, and Fred took over through the forest above to reach a pile of huge boulders below the slabs which line the ridge between Alpaca and Bighorn. The thinning line of forest continued up to the left side of the large boulders, but they were smaller and more scamper-friendly to the right which sucked us up onto mossy wet slabs! Fred tried to deke to the right to reach more forest, but it petered out with slabs above and below us. At the base of

Camp below Reh Pk. Photo: K. Ricker.

a mighty slab, leading off to the left, Dave led on a treed ledge which gradually ascended back to the line we should have been on. By then the sun was out and the krummholz shrubbery was dry as he wiggled



Wet slabs (top); John and Karl on Bighorn (middle); view from the top (bottom). Photos: K. Ricker and K. Ricker collection.

his way up through several low shelf ledges to reach ridge-top at grid 310 033. He then descended to give us the okay and boost his dog Chilko through the pitches of climbing. The route was liberally marked in orange ribbon as we came up, the ladies being somewhat apprehensive. Then, in full sunshine with views in all directions, the south buttress of Bighorn was about 500 m to the north, rising up as a series of exfoliating slabs of fairly smooth granodiorite. John lead the cautious charge up it. He was keen. About half-way a break-off in the slabs provided the first impediment, but by veering left at the base of it, a line of krummholz provided a ramp to surmount it. Back to the right, and in line with the ridge leading to Alpaca, another break-off of only shoulder-height briefly stopped the ascent, but someone before us had set up a thigh-high stepping stone. The dog was hauled up on a steep slab nearby! But by this time John only had three followers – the ladies rebelled at the angle of the slabs to walk up, and Fred, the perfect gentleman, lead them back down to the base to watch our antics. The final stroll to the summit involved crossing several tarn-filled grooves. We didn't stay long; John and Heinz had the ladies lunches in their packs! The climbing rope was uncoiled to hand line/rappel over the uncomfortable step, but thereafter it was a quick trot on the dry slabs with ever-increasing confidence down to the base and to lunch with the others.

In the interim, while awaiting our return, Fred had another look for an "easier" descent off the 1.5 km long ridge. A line of trees from ridge-top to road level caught his eye. Some were not at all keen on descending our ribboned route, and the sales pitch ensued, John not being happy about not following our ribbons down. Reluctantly, he followed Fred's charge to the line of trees over one kilometre away at the base of Alpaca. But Fred overshot; we laggards saw a large, ugly slab below him. Returning north to about grid 313 024, there was the line of trees facing the edge of the slabs and, fortuitously, a well-used game trail along its base was used until fade-out and disappearance once below it. The descent to the logging slash, though steep through trees, was without further angst. It began to rain to thoroughly soak the never-ending and quite dense slash and 2nd growth. Finally, at 1630 hours we emerged onto the road, in sunshine again, for the one km walk back to camp.

It had been a struggle throughout the day, but in retrospect it was a workout that all of us appreciated. It was probably the roughest trip in the 39 years on the "Coldcoqu" beat, but the terrain was exquisite – nice views, great geology, and route-finding challenges. Now, if we had started the trip from where we were perched on that fresh logging road spur under "Hazelton Peak", we would have missed all the bush

and wet slabs and would have had a more leisurely(?) ridge ramble instead. Somebody else can explore that approach route.

Finally, the natural history of the trip cannot go unnoticed. Unbelievably, and thanks to the late summer, there were paintbrush, asters and valerians in full, unwithered bloom, despite the redness of the low alpine shrubs. We were escorted to the summit by a northern goshawk, greeted there by an American pipit and white-tailed ptarmigan, and dive-bombed soon after by a small falcon (merlin?) while lunching at the base. On the way up, we almost trampled a Pacific (winter) wren, and the Bergers heard a constant buzz of golden-crowned kinglets high up in the forest canopy. A few pikas peeked on the rock pile on the way up, but there were no hoofed animals to be seen. The only bear was several km away from camp, seen on the road on the way home. The geology is Yosemite-style at its best. Perched on top of those exfoliated slabs were blocks of granitic rock, and a few foreign-to-the-site other rock types. A bold surface of glacial striations on the slabs at about 1800 metres indicated that the Cordilleran Ice Sheet ran east-west in this area, and not north-south, and the plucked-out mega grooves at the summit show the same sense of direction. The Pleistocene ice sheet(s) ran roughshod over the top. Under the north face of Alpaca, the fresh nesting moraine, seen in 1984 to be empty of ice and snow, was then filled with old snow (and ice underneath?) and capped with fresh snow above the level of its crests. Certainly, this moraine which was developed in the last few hundred years needs to be examined to see if a glacier is about to rejuvenate. However, if I do the investigation, you can be sure I'll approach the task by using the Upper Coldwater Road and Vicuña-Alpaca col route!

Participants: Chilko and Dave Hughes, Emily and Heinz Berger, Alice Purdey, Fred Douglas, Jenny Faulkner, John Sapac, Karl Ricker and Sir Edmund Zenger (in absentia).

Judge Howay, 16-18 June, 2011

Marek Labecki

This trip was conceived by Alastair Ferries and then made possible through the concerted effort of himself, Craig Speirs, Luke Alexandre, Blair Trenholme, Jeff Han and Marek Labecki (all BCMC members except Blair). A lot of planning and consideration went into it, including analyses of past trip reports, GPS tracks, photographs and possible transportation strategies

On Sunday, May 29th, Alastair, Blair, Craig, Jeff and Luke approached the base of Judge Howay to look at the standard route from the east via the Hanging Valley. They rode Blair's 90 hp motor boat to reach the north end of Stave Lake and then biked up the Stave River FSR. They also brought a canoe, which was used to get back to the boat, anchored away from the dock, and possibly for additional exploration. Near the 15 km mark on the road, they stopped and evaluated the conditions for crossing Stave River. Having waded across a shallow branch of the river, they took a closer look at the bush on the other side, where the route starts.

On Thursday morning, June 16th, the six of us meet by the boat launch at the southwest end of Stave Lake. Alastair provides a 30 m rope, a canoe, a two-wheel transporter for it, and a four-wheel cart for the backpacks. Blair provides the motor boat for transportation across Stave Lake, a bicycle, and a SPOT device. Craig brings a bicycle and a yak trailer for transporting some of the backpack load, Jeff – a bicycle and an ice screw, and Luke a bicycle and a 30 m rope. Each of us carries a snow picket, basic personal gear such as the harness, ice-axe, crampons, slings, biners, prusik slings, as well as an avalanche transceiver. Luke and Jeff carry extra ice-tools, and we all have helmets (except Blair). Some of us bring GPSs, and we've got a total of four stoves, three snow shovels, and a couple of snow probes for all of us.

We must wait at the launch dock because the gate, normally open at 7 am on weekends, is locked until 8:30. We see mostly clear skies above the city, but lots of heavy clouds over the area to which we're heading. The weather is supposed to stay precipitation-free until next evening, then rain is in the

forecast for Saturday and Sunday. We put all our stuff onto Blair's boat and set off across Stave Lake. After an hour or so, we're at a landing dock where everything gets unloaded. The boat is anchored in open water a couple of hundred metres away, and Blair and Alastair canoe back to the shore. Now we need to secure the packs, the extra bags (to be later stashed by the river), and the canoe on the carts and figure out an efficient way of moving it all 15 km up the road. We play with different possible transport arrangements. Finally we get moving, changing our biking and steering shifts every 2 km.

During one of the shifts, the sling pulling the four-wheel cart gets entangled in one of the wheels, dislodging its axle out of the socket in the frame. We have no tools to fix this, but after some struggle we manage to pull the two wooden bars of the frame apart enough to re-insert the wheel and continue the journey. A bit later another problem emerges – the canoe cannot be easily balanced on the transporter without occasionally hitting the ground, resulting in a few small cracks in its fibreglass shell, fortunately nothing too serious. This forces us to move any heavy load out of the canoe onto the four-wheel cart and our backs.

Near the 15 km mark on the road, there is a place suitable for launching the canoe to cross Stave River, which seems managable here although it looked quite turbulent from the road on our way. We stash our bicycles and carts in the bushes, change our footware, and begin the crossing operation. The idea is for Alastair and each of us to paddle across, taking some of the load along, then for Alastair to return with the empty canoe to pick up the next person. Half way across, the canoe is disembarked and pulled a short distance upstream through a shallow section, followed by an energetic paddle across the main river branch to a calmer cove where we land.

Once on the other side, we stash the canoe and all unneeded stuff by the shore and get ready for the bushwhack. Heavy duty gloves and helmets are on. Unfortunately, neither of our GPSs can get the signal right here by the river. We spot some flags marking the route which we attempt to follow. Within minutes, we lose the flagging. Alastair and Blair choose to go lower, while Luke, Craig and Jeff, followed by me, try ascending. My backpack extends about 20 cm above my head, causing me to get stuck in the alder and forcing me to crawl over mossy boulders and mud every couple of steps. One of my brand new hiking poles gets lost in the process. The hardship lasts for about half an hour, then the footing improves and we finally manage to converge in an easier terrain, where we also see the flagging again. Still, the route is not easy – steep and bluffy, a lot of dirt scrambling, branch pulling, and crawling under or over fallen trees.

In less than three hours we reach the Water Platform, a flat step where it's possible to cross a major gully blocking the way to the Hanging Valley. This is also a creek bed, with a huge drop downstream, and the rocks are slippery when wet. We refill our water bottles, as this is probably the first source of water we have encountered since the river.

After a break we cross the Platform and enter the bush on its SW side. We see a couple of flags but lose them right away, entering the alder

The multi-modal approach to the base of the standard route, heading up through the trees to the right of the snow avalanche debris (bottom right). Photos (anticlockwise from top left): B. Trenholme, L. Alexandre, C. Speirs, J. Han.

Route to camp (left) and from camp to summit (right) shown on Google Earth 3D maps.

zone. The going is painstakingly slow but at least not too steep. Alastair and Luke stay lower, where the bush is nasty, the rest of us try to follow faint goat tracks a bit higher. Finally we begin to catch glimpses of the Hanging Valley, blanketed with snow and obscured by the clouds higher up. After a steep descent from the alder zone to the valley, we stop at a spacious, multi-level rocky platform with some running water around and call it our home for the next couple of nights.

Next day we wake up at 5 am to poor visibility but no rain. We come to the edge of the snow and gear up. The snow is hard, our crampons are on and ice-axes are out right from the start. We also put on and check our avalanche beacons. We walk up some avalanche debris, pass by a large waterfall and ascend the slope to the point where we need to cross over to climber's left in order to enter the southern branch of the Hanging Valley.

We reach the mid portion of the valley, where it widens up, and with the whiteout it's not obvious which exactly is the best way up. We try to aim at a bottleneck gully section called the Hourglass. When it clears up for a few seconds, we realise that we are too far left, so we traverse across the steepening slope until we reach a narrow trench extending as high up as we can see. We debate for a while whether to stay inside it, risking being swept by a potential snow slide, or walk up along its edges, facing potential problems with moats between the snow and the rock walls. In the end we decide to continue up in the trench, aware of the fact that we may soon have to rope up to cross a small glacier above the Hourglass, depending on its current condition.

The heat reflected off the snow is beginning to hit us. We realise we are breaking out of the cloud layer and we can finally see some blue sky above. This is nice, but also a potential cause of concern because of the impact on the snow quality. The gully narrows and steepens. We are passing through the bottleneck of the Hourglass.

Coming out of the Hourglass we can't really tell where the glacier is, so the ropes stay in the bag. The slope is at a fairly sustained 45-50 degrees. We traverse slightly to

Approaching the Hourglass (left); climbing above the Hourglass (middle); Marek photographing while Jeff belays Blair up the snow arête (right). Photos: J. Han (left), M. Labecki (middle), L. Alexandre (right).




Clockwise from top left - reaching the summit; Alastair contemplates the summit; SW peak of Judge Howay with Robie Reid peering through cloud to left; the group on the summit (from left - Alastair, Blair, Craig, Luke, Marek, Jeff). Photos: J. Han (group photo); M. Labecki (other photos).

the right, in order to avoid rock bands above, and soon reach the col at the top of the slope, elevation 2200 m.

The col is a relatively narrow saddle with a steep drop into a gully disappearing in the cloud layer below on the other side. To the right (north) is a small rocky subpeak, and to the left a massive snow arête that we hope leads to the summit. It doesn't look too difficult but is steep and exposed enough to raise some concerns, as a slip down either of its sides could be fatal. We rest and discuss our options.

Upon some deliberation we decide to set up a fixed line up the arête, using two joined 30 m ropes. Luke and I build a bomber belay station as high as our comfort level allows us to go up unprotected. Blair, belayed by Jeff, leads up planting pickets on his way.

Soon it becomes obvious what we have neglected – the knot joining the two ropes got stuck in the biner at the first picket. To get this fixed, Blair secures himself at his location using another picket, while Alastair prusiks up the rope and feeds the knot through the biner. Then he detaches his prusik from the rope, which allows Jeff to continue belaying Blair up until the knot gets stuck at the second picket, at which point the whole procedure is repeated.

Then about 5-10 m before the top of the arête Blair runs out of rope. Luke and I come to the belay station and suggest an extension of the fixed line using slings and cordelettes, but Blair yells to us that it's not worth the hassle, as the snow is good enough to finish up the final section unprotected. He reaches the top of the arête and we lose him from sight for a while. After that we follow one by one – Alastair, me, Craig, Jeff and Luke – to discover that there's just an ocean of clouds below and nowhere to go any higher...

On the way back to the col most of us prusik down the fixed line. Then Alastair takes down the top anchor and downclimbs, collecting the pickets while on belay by Jeff. Finally, Jeff dismantles the bottom station and we are ready to start a steep descent down the Hourglass. We test the snow a few times and it seems very stable; still, we try to organise our descent so as to minimise the risk of getting caught in a potential slide. Craig and Blair go ahead, followed after a while by the rest of us – first walking down

face-out, spread across the slope, then downclimbing face-in when it becomes too steep, and getting closer together as we descend back into the narrow trench of the Hourglass.
The wakeup call on Saturday is at 7 am, but I become aware of the rain in the middle of the night already. By 6 am I notice that there's a puddle of water under my tent, fortunately not inside it. This doesn't offer a good prognosis for the day, as the steep and bushy descent awaits us. The others are likewise concerned, and we decide to keep our ropes and harnesses handy. The other guys start heading out, walking a distance up the snow slope, and manage to find a less bushy route in the trees above the alder zone.
After crossing the Water Platform, now with wet rocks, the route gets steep, so we need to exercise extra caution. At one slippery and mossy section, veggie belays are just not enough, and a decision is made to drop a handline. Further below, another awkward spot with a fallen tree is bypassed on the side using long tree branches. Then we follow the flagging all the way down to the river without any problems. We canoe back across, retrieve our bikes and carts from the bushes, and load them up. This time, we assign two bikes to pull and two people in the back – rather than one – to steer the four-wheel cart. With this improved transportation procedure in place, we reach the dock on the north side of Stave Lake by 5 pm and the launch place at its south end by 6 pm.

GARIBALDI PARK

The BCMC and Garibaldi Park

Michael Feller

Garibaldi park is undoubtedly of national park calibre. It is probably the park most heavily used by backcountry non-motorized recreationists in B.C., although we may never know for sure due to lack of interest by the provincial government in managing backcountry recreation. The park has been described in superlatives by hiking, skiing, and climbing guides. Thus, Jack Bryceland's "103 Hikes in Southwestern British Columbia" (6th edition, 2008) stated "*The area around Garibaldi Lake is the jewel in the crown that is Garibaldi Provincial Park. …….. No matter how often you experience this place, it is breathtaking every time*." Bruce Fairley, in his "Guide to Climbing and Hiking in Southwestern British Columbia" stated that "*Garibaldi Park contains some of the most stunningly beautiful alpine terrain in all of British Columbia. From the immense lava cliffs of the Barrier, the huge natural dam which impounds Garibaldi Lake, to the isolated icefields of Mount Pitt and Mount Sir Richard, the park unfolds scenic wonder after scenic wonder. ……. No matter whether you are a hiker, climber, skier or naturalist, you cannot claim to have fully experienced the mountains of southwestern British Columbia until you have visited Garibaldi Park*." John Baldwin, in his "Exploring the Coast Mountains on Skis. A Guide to Ski Mountaineering" (3rd edition, 2009), stated that "*As a wilderness destination, it* [Garibaldi Park] *is one of the most important protected areas in the province, especially as intensive motorized use of unprotected areas in southwestern BC grows*."
Unfortunately for Garibaldi park's wilderness and scenery, commercial and motorized interests are trying to claim them, as illustrated by several deletions of parts of the park to allow for expansion of Whistler and Blackcomb, establishment of heliskiing within the Spearheads, regular snowmobile incursions into the park via Brohm Ridge, and attempts by snowmobilers to obtain a snowmobiling corridor through the park from Brohm Ridge to Whistler. Current attempts to build a chain of huts in the Spearheads could well lead to loss of adjacent wilderness areas if (or rather, when) crowds and commercialism storm the huts. BC governments appear to have little interest in protecting wilderness and measure land management success by the number of users and the dollars generated from the land. Unfortunately governments, particularly the present one, have starved BC Parks of the resources required to properly manage our parks, so hiking trails, such as the beautiful one up Garibaldi Park's Paul Ridge from near the carpark, are not maintained then closed. There is no management of visitor

numbers or impacts, so campsites are overcrowded, trails insufficient, and mountain bikers force hikers off the Diamond Head trail with impunity. Political pressures on BC Parks mean that we cannot rely on BC Parks to protect wilderness areas within parks and within Garibaldi Park, in particular. Despite these problems, we must continue to try and protect the wilderness and wilderness recreation values of our park – a park that is very special to the BCMC.

The BCMC has had a long involvement with Garibaldi Park, having organized camps within the area from 1910 to, most recently, 2009 (Table 1). The park was established in 1927 following a campaign mainly by mountaineers, particularly BCMC members. Efforts by the BCMC to get the park established began in 1913 when James Bishop, then the club's honorary president, advocated the creation of a park, based on the club's discovery of the Mt. Garibaldi – Black Tusk area. This advocacy was put out through a whimsical fictional story he wrote, called "A Romance of the Mountains" which was published in 1913 in the club's first publication – "The Northern Cordilleran" and reprinted below. The first 2 summer camps of the BCMC, in 1910 and 1911, were based on the Paul Ridge – Elfin Lakes area and provided a view towards the Black Tusk area, the destination for club summer camps in 5 of the next 6 years (Table 1). A brief previously unpublished account of the first camp in 1913 appears below. BCMC members, lead by club president, Billy Gray, constructed the first trail into the Garibaldi Lake – Black Tusk meadows area in 1912. This trail was to get increasing use in the coming years. Gray also produced the first map of the Garibaldi Lake area in 1913. The trail and map, together with publicizing of the area lead to increased visitation. This together with lobbying by mountaineering interests paid off. The story of the park's establishment has been well recounted by Les Ford ("The story of Garibaldi Park", reprinted in the 2009 BC Mountaineer, vol. 69, p. 76). To date the club has organized no less than 18 extended mountaineering camps in the Garibaldi Lake area (Table 1). The most recent club camp in the park – an extended ski trip in 2009 – was described in the 2010 BC Mountaineer. Reports of more recent trips in 2011 and 2012 also appear below. Club members also organize one to many day trips into the park. Examples of these types of trips are also described below.

Table 1. BCMC extended mountaineering camps in Garibaldi Park, by year

1910 Garibaldi - Red Heather	1932 Garibaldi - Black Tusk
1911 Garibaldi - Elfin Lakes area	1934 Garibaldi - Black Tusk
1912 Garibaldi - Black Tusk	1938 Garibaldi - Black Tusk
1913 Garibaldi - Black Tusk	1941 Garibaldi - Elfin Lakes area
1914 Garibaldi - Black Tusk	1947 Garibaldi - Black Tusk
1916 Garibaldi - Black Tusk	1956 Garibaldi - Garibaldi Lake
1917 Garibaldi - Black Tusk	1959 Garibaldi - Garibaldi Lake
1918 Garibaldi - Mamquam Lake	1965 Garibaldi - Garibaldi Lake
1920 Garibaldi - Garibaldi Lake	2003 Garibaldi - Wedgemount Lake
1922 Garibaldi - Table Meadows	2005 Garibaldi - Black Tusk
1924 Garibaldi - Spearheads	2007 Garibaldi - Singing Pass - Spearheads
1926 Garibaldi - Black Tusk	2008 Garibaldi - McBride Range traverse (ski)
1927 Garibaldi - Black Tusk	2009 Garibaldi - Misty Icefields (ski)
1929 Garibaldi - Black Tusk	

This issue of the BC Mountaineer, then, has a special section devoted to the club's involvement with Garibaldi Park over the last 100 years. It contains articles from previous club publications, as well as previously unpublished old and new articles and photos, and a selection of photos from the club archives. The ecosystems of the Black Tusk trail are also described in the last article. It is the editor's hope that these articles will impress upon readers the enormous value of the park to us and to all who seek true wilderness in BC's southern Coast Mountains. Awareness of this importance should then lead to actions to protect this wilderness from all those who would destroy it, knowingly or otherwise, instantaneously or incrementally. Below are reprinted reports of BCMC summer camps in the Black Tusk area in 1926 and 1947, photographs of which have recently been donated to the BCMC archives. These illustrate the use of the park by the club. It can be seen that some of the activities undertaken and aircraft access would not be allowed today, but we should not judge past events by today's standards. Increasing human use of the Black Tusk meadows through trail construction in 1912 at a time when few recreation access trails existed and wilderness was everywhere is not at all comparable to increasing human use today in the few remaining wilderness areas, such as those adjacent to the Spearheads in Garibaldi park. A moral is that things some of us accept we can do today in the park, such as building huts, might well not be allowed in the future. Acceptable uses change with time, but the value of the park to the club has not changed – it remains extremely high.

A romance of the mountains

J.C. Bishop (published in Northern Cordilleran, p. 9-17, 1913)

Joseph Bishop was the first president of the BCMC - for 3 years until he was made the club's first honorary president in 1910. He remained honorary president until his death on Mt. Baker in 1913, shortly after the fictional story below was published in the club's first journal. He was an active leader of club trips and a strong advocate for the creation of a park in the Garibaldi area. His name appears on glaciers in Garibaldi Park and the Lillooet Icecap as well as a mountain in Mt. Seymour Park.

The early hours of a summer morning found Jack Langton and his pony leaving their home in the Squamish Valley. He was about to make the first trip of the season to his cabin among the foot-hills of Garibaldi, by way of Round Mountain and the Mamquam trail. While obtaining supplies at Brackendale, he received a letter, which proved to be of prime importance. Jack's nature was not unlike a mountain stream. He never lagged, but had to keep moving like the waters of the stream; and, like the stream plunging over a rock, his mind at once plunged into the possibilities which the letter opened up.

The first mile out of Brackendale is rather steep. A packer looks first to the set of his pack and the comfort of his four-footed friend, on whom so much depends. The attention which Jack had to give to these things confused his thoughts about the letter; so he decided to dismiss the subject till he reached his cabin.

For several years, he and two friends had spent their summer holidays in the Garibaldi region. He had built a cabin there, to which he was now on his way, in order to prepare for a visit from the Wards and their sister.

The lower portion of the trail led over Round Mountain. The great timber had been removed from the lower slopes; but some fine trees still remained. Trudging along the trail, his mind constantly reverted to the letter in his shirt pocket. But he loved the trail he knew so well, and determined to enjoy its beauties undisturbed by matters which would need his undivided attention.

It was mid-day before he and his pony emerged from the tall timber. They found themselves on a small plateau covered with stunted trees, thick grass, and moss, with black, silent pools. Masses of snow still showed here and there on the northern mountain slopes.

The dry warm bank of one of the creeks invited him to rest and lunch. A packer commonly loses but little time at mid-day. Jack could not, however, resist the subtle influence of the mountain spring-time, or forego the enjoyment of the all-pervading fragrance with which the atmosphere was charged.

The swift passing of a deer startled the pony into action, which brought Jack to himself. He quickly set pack and was off again. As he passed under Lookout Mountain, one of the peaks of Round Mountain Ridge, he saw Garibaldi towering over the lesser heights. The trail curved like a well-drawn bow across the snow and flanks of the ridge. To the left were great meadows sloping to the west; and a hundred streams drained them to the Little Mamquam. Columnar Mountain showed just across the meadows; and now Jack was looking at the brown spot on the high green slope where his cabin stood. Away to the right were Mud River and its well-wooded valley. Still farther off were the rock-cliffs of Mamquam, rising above its broad snow-fields and glaciers.

Columnar Mtn. in 1911. BCMC archives 5-17.

The trail now led into Green Valley, and, making a sharp turn to the east, brought Shadow Lakes into view. These two rock-basins, though not large, were beautifully situated. They were fringed with trees on the east and west; while the north was open, and mirrored the forms of Lava Mountain and Garibaldi. After crossing the valley. Jack made a turn to the west which completed the bow of the trail, up a steep slope which led to the door of his mountain home. He swung the pack off his pony and rubbed i t down vigorously with a bunch of dry grass.

The animal needed no hobbling; it would come at his call. In a few minutes fires were burning on hearth and in stove, and the contents

of the pack were all in place. He then attended to his own wants and sat down at the door to study his letter. It was a bulky epistle, bearing the post-mark of “Victoria, B.C.”, and enclosing the official sanction of his most cherished scheme.

It was not strange that he forgot for a while the glory of the July sunset as he gazed into space, absorbed in thoughts of the future. The letter ran thus:

“Dear Langton, Your commission as Chief Ranger of the Garibaldi Reserve and Park, which I enclose, will be satisfactory to you, I hope. The authorities recognize that you are the man for the position. Your steady hammering at the subject, and the collection of photographs and sketch maps, which you placed in my hands last November, have convinced them of the importance of your suggestions, and led to their giving you what you have so long striven for.

The enclosed map, which has been prepared from your notes and sketches, covers almost the same ground as you suggested. The boundary of the Reserve takes in Round Mountain, that section of the Mud River Valley which you propose for a game preserve, the whole of Garibaldi and Mount Mamquam, and all those picturesque summits which surround Garibaldi Lake. The finest part of the district is thus secured against encroachment.

I understand you are about to return to the Garibaldi region. Will you have a pony trail made to the Lake if possible? I wish to see these wonders for myself; but I must await the trail for I am not a mountaineer. You will doubtless submit some plans for further work. We can go over these together before drawing up a general scheme. I wish you every success.

Yours sincerely,

_____ _____”

To Jack this letter carried with it many possibilities, of which he dreamed that summer evening. These dreams were not all of park improvements. He had first to build an annex to his cabin. The cabin was convenient and comfortable, though made out of rough materials. But the annex had to be fit for the occupation of a queen.

The glory of the sunset broke suddenly upon him. Prismatic colors played on the gray mists above and turned the mountain tops to burnished gold, while the valley was flooded with rosy light. The picture held his gaze for so long that he seemed to lose his own identity. “No wonder”, he thought, “that early man bent knee and head in worship of the sun.” The chill of the evening brought him back to earth. He re-entered the cabin, lighted his candle, and prepared for a good night’s rest.

The morning mists lay thick over valley and meadow when Jack opened his cabin door. He lost no time in getting to work on the annex.

Its walls were built of flat slabs from the neighboring slopes, which were bedded in cut sods. His skill in woodcraft enabled him to make stools and chairs from gnarled tree-growths. But he did not stop there. He transplanted shrubs, heather and wild flowers to cover the traces of recent building; and the result was a masterpiece of ingenuity and fitness. It took just three days to complete. It was sheltered on the north by the south-east spur of Columnar Mountain. The front looked southwards, over Green Valley and the broad meadows. On the east was Mamquam, from which the range of peaks continued southwards as far as Indian River. On the west a full view was obtained of the trail as it swept around from Lookout Mountain. It was a grand panorama. Meadows, streams, trees that told of winter storms, snowfields, ice-falls and towering peaks were all in sight from Jack’s cabin door.

Everything was now ready for his guests, and the time for their arrival drew near. He pointed his glass at the lower end of the long curving trail. Yes, there they were, crossing the snow on this side of Lookout Mountain. George was leading; next came the two pack ponies, followed by Jean and Billy. But his eager interest in his visitors did not make him overlook the signs of a rainstorm approaching from the south-east. He caught up his camera and hurried down the trail as it swept around from Lookout Mountain. It was a grand panorama – upper Shadow Lake for a picture when the party should reach it. Farther on he met his old and tried friends with the warmest of greetings. Jean was full of delighted

exclamations at the things she had seen on the way. “And, oh Jack,” she added, “I want to know everything about your Garibaldi. I am so glad mother let me come; for now I am to see it in all its wild grandeur!”

Jack pointed to the storm-clouds. But they held off until he had got his picture at the lakes. While descending into Green Valley, the rain came down. The storm passed quickly on its way to Mamquam, leaving the landscape fairer than before.

Jean was delighted with Jack’s mountain home. He showed her into the annex. A roaring fire greeted her on her return to the living-room after changing her climbing dress. As she stood in front of it, she asked, “And did you really build that beautiful room in three days?” Presently she added, “Billy and I will get supper while you boys attend to the ponies.”

The evening passed merrily in front of the fire. They told of their adventures on the trail, and their troubles with a new pony that tried to stampede. Then came Jack’s letter and the park scheme, on which the criticisms of George Ward were sound and practical. Soon afterwards the fresh young voices were heard in familiar songs, Billy accompanying on his violin. Then they all said “Good-night.”

It seemed but a few minutes later when Billy yelled “Good-morning!” It was glorious out of doors. Showers during the night had freshened the colors of the landscape, and clothed the valley in bloom. The first task was the building of a bath-room over a pool a little below the cabin. Jean was greatly interested when she heard that there was to be a fireplace in it.

A trip up Lava Mountain was arranged, so that Jean might be shown the greater features of Garibaldi. They had an early lunch, after which they started northwards, and descended into Rock Valley. Piles of debris covered the slopes on the left; and broad scars on the flanks of Columnar Peak showed where all this material had come from. The murmur of water under the stones came pleasantly to their ears. In front of them lay a wide snow-slope. They crossed it, and gained the crest. From that they looked over into another world. Behind them were forest and meadow, in all the beauty of life and growth. Before them were the great silent snow-fields. The giant form of Garibaldi rose grim and clear against a background of blue sky.

Jack led the party eastward along a steep slope. Now on snow, now on rock, they passed the line of Lava Buttes, which stood out from the northern slope of Lava Peak as a group of pinnacles, whose grotesque forms contrasted with the regular outline of Columnar Mountain. When they had gained the top of the snowy dome of Lava Peak, he was able to point out the course for tomorrow, which was to lead them to the northern summit of Garibaldi.

Lava Mtn. (The Gargoyles) (left) and Columnar Mtn. from the pass between Columnar and Lava (right) in 1911. Photos: BCMC archives 5-13 and 5-19.

As they worked round to the south-east they came to a gap in the rugged crest-line of the Buttes, where another transformation scene awaited them. It was a more extensive view than that from the cabin. Here a knife-edged spur of rock ran out from the ridge. Fifteen hundred feet below them was the upper end of Green valley, smiling in the sunlight; while the muffled roar of Mud River came faintly through a still greater depth of air. The strain of the climb and the sudden change of view caused Jean to turn giddy. She trembled and clutched at Jack’s arm. He guided her to a flat rock on which she could sit. Her brothers climbed out on the knife-edge to enjoy the sensation. As they crawled back, George called out, “Why, Jean, when the Mamquam road is built you will be leaving Vancouver in the morning to see the sunset from this spot!”

Jack noticed that her eyes were closed. He asked her what she was thinking of. “So long as I live, Jack,” she replied, “I shall call to mind what I see today. I have been looking first at the living picture,” she went on, “and then closing my eyes and developing it in the dark. I do not think there will be anything indistinct about that picture in my memory. And to think that all this grandeur lies so near the valley.”

They made their way down by the south-western slope, and reached the cabin at three o'clock. Billy prepared tea and toast; after which they descended into Green Valley, and crossed a rolling meadow which sloped, warm and bright, to face the sun. A new wonder met Jean; for it was spring-time here, and great masses of the spring anemone in bud and bloom were in full possession. On the knoll above the flower had run its course to ripened seed; but lower down, following up the receding snow, it was in the act of answering the summons of the sun. Jack promised a greater variety in two or three weeks.

George and Billy now pushed on in advance, Jean calling out to them that she was hungry and expected a good supper. Winding up Green Valley, she and Jack stopped many times to pick tempting blooms, while he gave her an occasional lift over broken ground. The two grew unmindful of all but the gladness within. They talked as they had done for years, looking into each other's eyes, in which nothing but frankness and truth appeared.

"We have been out but a few hours, Jack," she began, "but it seems impossible that I have seen so much in so short a time. While looking down from that height, I felt as if I had traveled out over the ice and snow. Please don't laugh at me, Jack," she continued, "but I should like to write a story of what I have seen since I left the valley." "Your title would be?" "Yes, Jack, A Romance of the Mountains," she replied.

They were passing through a belt of open ground dotted with boulders, on one of which they sat down, looking over the meadows. Jack took her hand and asked, "Am I to be in your 'Romance of the Mountains,' Jean? We have drifted along to this from so many years past that I do not remember when we began. You know, Jean, that I love you; and I need you so much now. Am I to be in your romance?" Her color deepened. He caught up the other hand; and as he turned her face towards him she looked up and answered, "Yes, Jack, in my romance through life."

They reached the cabin light-hearted; but they left their flowers behind. Billy had set a big vase in the centre of the table to receive them. "This is decoration night," he said; "something for you to remember, Sis." They had to hasten from the room to hide their blushes. As Jack went off to split the kindling wood, he whistled a few bars of "Away Down in Dixie" to prove that he was thinking of nothing in particular.

Such a supper, and such an evening! But George and Billy furnished most of the merriment. Jean and Jack were rather quiet. Their sweet little secret would be all their own for a time. At last the party got up to prepare for the long trip of next day. Everything was laid out in order on the side table; and Billy remarked, "Early to bed, for early we rise."

Billy awoke, and considerately gave the others a grace of half an hour while he got breakfast. He believed in the mountain maxim, "Never hurry in the morning." At last they were ready to start.

The dawn showed the mists covering Green Valley and the lower slopes. The course lay northwards over the ridge they had climbed yesterday. They descended to a wide snowfield, over which towered the Lava Buttes, whose dark and rugged forms stood out against the sky.

They passed a small lake of blue-green water, set like a gem in the pure white of the snow. The sun was now breaking through the mists; so the blue glasses and veils were adjusted.

The party had to make its way up a steep slope of ice, which brought the sturdy axes into play. The rising sun was chasing the vapours away, and disclosing a far-extended and ever-changing picture of forest and river-valley to the south-west, thousands of feet below. They reached Diamond Head, and saw Garibaldi immediately to the north, a sharp arête connecting the two. The western slope from the arête was composed of loose volcanic ash and boulders in a state of constant slide; while the eastern slope of snow reached upwards almost to the narrow crest. The way to Garibaldi lay across the snow. They descended until they reached a small bluff which rose above the eastern slope. A well-marked snow cornice ran all along the top of the bluff. They were able, however, to break a hole

Garibaldi from the base of Lava, 1911. Photo: BCMC archives 35-48.

through it at one place, through which Jack lowered the others by means of the rope. They stood aside to leave a clear space where he could land on the loose ash. He made the drop without difficulty; and the party, turning northwards, ascended the snow-slope diagonally.

They had traveled more than a mile in this way, when they were confronted with a steep pitch of loose material, running out to the eastward from the main mass of Garibaldi. Here they had to use the rope. A wide snow-field opened to their view as they reached the top. On the left was the dark forbidding east wall of Garibaldi. Nothing else was to be seen. A solemn stillness invested the place as they wound among crevasses and over a snow bridge. The view broadened out again as they came in sight of a well-marked bergschrund, where a change in the slope of the mountain side maintained a great crack in the ice, which was weathered to a fluted and broken wall.

At last they reached a projecting spur, where an ice-fall was giving rise to wonderful forms. This was the end of their climb. Shadows of floating clouds were playing over the landscape of ice and rock, on which was thrown the gigantic shadow of the mountain. Jack swept his hand over the unforgettable picture with a dramatic flourish. “The North Garibaldi Park,” he said. He then pointed out to Jean the leading features of the park.

Atwell Pk. from Garibaldi (left); “The North Garibaldi Park” from Garibaldi summit (right). Photos (from 1911): BCMC archives 35-13,35-15.

The irregular outline of Garibaldi Lake showed four thousand feet below them, nearly four miles away. Far to the left was Warren Glacier, the largest of the group. To the east of the lake were Sentinel Ridge and Glacier, and the Sphinx snow-field and its glacier; while on the north was Black Tusk Ridge overshadowing its meadows, the latter wide enough to afford camping-ground for an army.

George and Jack were discussing the route of the trail to the lake, when Jack’s sensitive ear caught a warning murmur from the south-east. He at once gave the word to return. Jean reluctantly turned her gaze from the smiling valley and lakes back to the chilly snow-field over which they had come. But she remembered the green fields and snug cabin below, and rose lightly.

Jack was too much a master of the art of walking to start the party off hurriedly. They began the descent with caution, making only safe glissades. Soon, however, they warmed up, and were doing quick time as they flew over the snow, with Jack well in the lead to choose the way among the crevasses. When they came again to the eastern spur, he could not resist the temptation to stop and point out the beauty of “the finest glacier in the park,” whose broad form extended for seven miles to the souithward. At the foot of the slope they found themselves on a “dry glacier,” where new conditions were evident. They did not attempt to return by the snow cornice; for Jack decided to follow a safer course down Mud River Glacier. The long hours of sunshine had created an icy stream, which came down in merry splash on their left. Suddenly a strange noise made Jean look up. “That,” said Jack, “is the gulp of the Moulin, where the surface water is rushing into a sinkhole, and carrying air with it, which gurgles back again. Bend low and listen.” She did so, and cried, “Why, Jack, it seems alive.” “Yes,” he replied; “A dry glacier is a strange thing.”

They resumed their descent towards Mud River with a winding moraine ridge of stones and earth on their right. As they neared Lava Mountain they made for the eastern rock-slide, which they ascended obliquely. They stopped to rest; but the eyes of George and Jack were on the white mist in the Mud River Valley, and they could see it creeping upwards. They were more than two miles from the cabin, which lay on the other side of Lava Mountain; and the way was crossed by torrent tracks and rock-slides. The mist

Views of the "Mud" Glacier from Paul Ridge in 1911. This glacier used to flow around Opal Cone (right of glacier) into "Mud" (now Ring) Ck. Photos: BCMC archives 5-14 and 5-18.

would be upon them in a few minutes. Jack explained their situation to Jean. "Well, boys," she said "I am going to see another phase of the mountains; but I am safe with you."

Down they scrambled in haste, through snow-banks, oozy ground, and tangled growths, the white streamers swirling around them. As they reached a narrow valley, Jack plunged ahead to scout, guiding them with his voice. The one thing he feared was the treacherous crust of snow above the hidden streams in the valley. But they got across in safety.

The mist was thick when they got to Rock Valley. George and Jack scouted in opposite directions, while the others stood still. At last Jack called out, "The ridge!" In a few minutes they were safe inside the stout walls of the cabin. But the strain had been great; and Jean collapsed as soon as it was removed. A blazing fire and a cup of tea soon brought back her color. They were all glad, however, to try Jack's prescription of hot water and clean clothes.

As they sat at supper amid the brightness and comfort of the cabin, they talked with animation of the day's experience and the storm-warning. Jean looked at Jack, and said, "You have learned to know the mountains and to read their secrets. Do they always tell you of their storms?" "Yes, Jean," he replied; "Nature never plays false."

The wind began to whistle around the cabin, and rain was soon pattering on the roof. Jean rose. "Good-night, boys," she said. Billy impulsively kissed her. "One for mother and one for myself. Good-night, Jean," he said.

The sun had been up for some hours before the cabin showed signs of life. The events of yesterday were talked over at breakfast. The conversation was continued in the garden, where Jack had planted roots and seeds of the mountain flowers; and they discussed their next move. Work was Jack's greatest delight, and he felt that he must get to it at once. His alert mind was already engaged with the construction of the first permanent road into Garibaldi Park. So it was decided to give the rest of the day to the gathering of flowers and resting, so that they could all start for the Squamish Valley in the morning. Jack and Jean made their way to the big rock near the meadows, where they retrieved some withered blossoms, now more prized by both than the fairest products of the gardener's art.

And thus began a "Romance of the Mountains," which we leave to run its course amid the beauty and sublimity of Nature all untouched.

Billy Gray and the blazing of the Rubble Creek trail – celebrating 100 years

Cathy Ross

July 2012 marks the Centennial year of the momentous 'blazing' of the Rubble Creek Trail up to Black Tusk Meadows in Garibaldi Provincial Park. The initial trail was created from the efforts of a 22 year old, early mountaineer and elected president of the BCMC named William John Gray.

Billy Gray - two views. Photos: Left - BCMC archives 1-01; Right - from the Charles Drysdale Family Collection, courtesy of Edward Peck.

Little is known about the early life of William "Billy" Gray, except that he was active in the BCMC from its earliest days in 1907 and at one time worked as a cigar maker's apprentice. Gray was described as a public spirited man who made Gray's Trail, today known as the Rubble Creek Trail, at a time when there were no detailed maps of the Garibaldi area. This trail and the resulting easy access to Garibaldi Lake ultimately led to the creation of the park as it is known today.

Early expeditions by the BCMC into what was then only known as the Garibaldi District began in 1910, to promote the study of the mountains, valleys and ice fields of British Columbia. During this time, mountain exploration took place through a combination of first ascents and observations from the tops of the next ridges that came into view.

It was in the summer of 1911, at the second annual camp of the BCMC, that Gray first saw Black Tusk Meadows and a potential route up to Garibaldi Lake. Starting out from a base camp located at the foot of Columnar Peak, in what is now known as the Diamond Head area of Garibaldi Park, Gray led a party of ten across the Garibaldi Glacier, known today as the Garibaldi Névé and made the first ascent of Copper Peak, now named Mount Carr. It was from a vantage point on this peak, that Gray noticed that the land around the northwest end of Garibaldi Lake appeared to drop suddenly into the Cheakamus Valley. Gray was known for his proficient observation skills and recognized that the valley between the two ridges offered a possible way up to the meadows below the Black Tusk. Having no topographic map, or any map available to him for that matter, bushwacking up valleys to get to the mountains was the popular route finding method of the time. However, from his viewpoint, looking northwest from Mount Carr, Gray did not know that the sudden drop into the Cheakamus valley was the result of a landslide fifty-six years previously.

The disaster had first been recorded in1858 when seasoned prospector, Major William Downie, and former Hudson's Bay Company employee Joseph William Mckay, passed through the Cheakamus Valley and came across the landslide at Rubble Creek. At the time, Downie and Mckay had been commissioned by the Dominion Government to explore a route to Howe Sound from Lillooet Lake. Major Downie sent an interesting piece of correspondence to the premier describing his observations: *"… all the low lands on each side of the valley, for a distance of about four miles, were submerged three years ago and presents the singular appearance of a lake studded with trees. The catastrophe was caused by the bursting of a lake from its' basin, in the marl mountains, on the east side of the valley. The debris from the mountains which covers an area of about three square miles, filling up the channel of the river, caused the overflowing of its' banks. The river has since made from itself a new channel, and will probably drain off the lake in course of time."*

Although Major Downie's estimate of the landslide was excessive and his explanation speculative, many thousands of tonnes of volcanic rock did in fact slide several kilometers down the Rubble Creek Valley from the high cliff we know today as the Barrier. From his viewpoint at the top of Mount Carr, Gray would not have been able to see that the potential valley route he was considering had been devastated by the wide strip of landslide debris. This would present him with some unforeseen challenges the following year.

In 1912, the BCMC elected Gray as president and he was unanimously chosen to search for a practical route up to Black Tusk meadows; the route via the Garibaldi Glacier was long and circuitous and not

suitable in bad weather. An access trail into the Garibaldi Lake area would be of great benefit to the BCMC and their mission to 'preserve the beauties of the mountains of British Columbia with protective legislation and promote scientific, artistic and recreative pursuits.'

The night before Gray was to leave on his journey, he visited the office of notable Provincial Botanist of British Columbia, John Davidson. Gray admitted to Davidson that he was concerned about meeting a cougar on the trail or a bear in the mountains. In case of an emergency, Gray was advised to carry a gun to defend himself against a possible encounter with a wild animal. Davidson noted that Gray had wanted to travel as light as possible and said in his own words, *"I got a rusty old pistol cleaned up, but I've never fired one".*

On July 26th, having no topographic map, or any map available to him, Gray set out alone from Vancouver to find a way into the Black Tusk region. Leaving from the Union Steamship Company wharf in Gastown, a steamer took Gray westward through Burrard Inlet, north at the Point Atkinson Lighthouse and then headed into the iridescent waters of Howe Sound. At the time, a steamship was the only method of transportation available, as there was no railroad between Vancouver and Squamish until 1956 and no highway until 1958. The steamship cruised by the famous and active Britannia Copper Mine, interrupting the scenery of the rugged coast with an industrial landscape typical of a thriving mine. Gray would have seen several prominent buildings and cottages at the north end of Britannia Beach. These would have included the Superintendent's House, now Galileo Cafe, Mill #1 and the 5 km long aerial tramway used to transport ore down the mountainside to the shores of Britannia Beach. As the steamship carried on to the head of Howe Sound around Watts Point, the dominant peak of Garibaldi would have come into full view for the first time.

After an almost five hour steamship voyage, Gray finally arrived at the Squamish wharf. He then took a new motorized stage called the "Rapid", operated by the well-known Squamish pioneer Harry Judd, 11 km up the valley to Brackendale. Gray spent the night there, available accommodation being at the two and a half story Bracken Arms Hotel or the old 'Halfway House', located between the settlement in the Upper Valley and the wharf on Howe Sound. In the morning, he set out along the historic Pemberton Trail, once used by prospectors on their way to the Cariboo Gold Rush back in 1862. Gray followed the trail on foot for 32 km as it wound its way through dense bush dominated by giant cedars and Douglas-firs. At one point the trail clung to the edge of the rushing Cheakamus River and at another he had to clamber over the shoulder of a bare rocky mountain a hundred metres or so above the river. Along the way, he would have noticed that the construction of the Pacific Great Eastern Railway was in process and rails were being laid from the mouth of the Squamish River up the west side of the Cheakamus River.

When Gray reached Stony Creek, now known as Rubble Creek, the landscape would have looked very different from what we see today. The natural revegetation process has significantly rebuilt the appearance of the area since the 1855 landslide. The accomplished geologist, Dr.William Mathews, later studied the area and determined that this landslide devastated an entire section of ancient forest, sweeping away trees and stumps sixty meters up from the Rubble Creek Valley floor. What a sight it must have been for Gray to stand at the foot of Rubble Creek and look up toward the Barrier for the first time. In one of his later articles, Gray vividly described the ascent of Rubble Creek.

"The bottom of Stony Creek Valley is completely covered by a great field of boulders, which extends upwards for a distance of three miles and varies in width from a few hundred yards to a mile. Through this mass of strewn boulders the creek has cut a number of channels which from time to time have become deserted as the water changed its course. On seeing this immense area of rocks one begins to imagine that some gigantic flood must have broken loose, torn its way down the valley and carried with it great quantities of rocks which it spread over the valley bottom"

With nothing but his woodcraft to guide him and determined to overcome the obstacles in his way, Gray found a path through the rounded boulders along Rubble Creek and up to the top of the Barrier. He camped near the top of the extremely steep bluff for the night and most likely listened to the sound of loose blocks of rocks tumbling 600 m down from the semicircular wall of red volcanic rock to the steeply

sloping apron below. When he awoke safe and sound the next morning, Gray was surprised to find that he had forgotten to load the pistol he had brought to defend himself against a wild animal attack.
Using his hatchet to chop marks on the trunks of trees to blaze a trail, Gray set out through the forest to find a way into the meadows. Eventually he reached the treeline and the long bench-like upland of Black Tusk meadows. Once he saw a clear access into the lower meadows, Gray made his way back down the steep mountainside to Rubble Creek, making the long walk back to Brackendale before heading back to Vancouver. Upon his return, Gray again visited the office of John Davidson and reported that he had been successful. Gray had found what was to become the standard access route into Black Tusk meadows.
Due to the single-handed efforts of their president - Billy Gray - the BCMC was able to hold their 1912 camp in Black Tusk meadows. The club coordinated the services of 'packers' and packhorses to take camp provisions in as far as Rubble Creek. However from that point on, all the food and equipment had to be packed on foot up the steep valley trail to the meadows.
On August 4th, in advance of the main party of eleven, Billy Gray and BCMC members Fred Perry and P. Long returned to Rubble Creek Valley. Following the trail that Gray had blazed the year before, Gray, Perry and Long did the lion's share of packing all the camp supplies up to the meadows on their shoulders; a distance of approximately 10 km one way. These men made a total of three return trips carrying provisions from the bed of Rubble Creek to the main campsite located in Black Tusk meadows. This tremendous undertaking was described in an article co-written by Gray:

"The next day we got the loads up the bed of Stoney Creek (now Rubble Creek) to an altitude of 3,000 feet. We then climbed the lower part of Black Tusk Ridge, which extends from the Cheakamus Valley eastwards along the north side of the creek. At a height of 4,500 feet the lower end of the meadows was reached, and two hours more of tramping brought us to the camping ground"

At a location near the main camp at Mimulus Creek, Gray hacked a final blaze on the trunk of a hemlock tree. He then wrote in pencil "**The Last Blaze, Thank God The Task Is Done**".
This weathered inscription has since been carved into the trunk of that same hemlock tree and although faded, can still be seen today. It was also during the camp of 1912 that Gray was credited with making the first recorded ascent of the Black Tusk. In a Vancouver newspaper article the thirteen other members who attended the same camp were credited with naming most of the points of interest around Garibaldi Lake. These included: Gentian Ridge, Panorama Ridge, Black Tusk, Red Mountain (now called Mt. Price), Castle Towers, Table Mountain and the Helmet, Sentinel and Sphinx mountains and glaciers.
During that camp, Gray also made the first useful map of the Garibaldi Lake area. Using the extensive photographs he had taken while exploring the Garibaldi region with the BCMC. Gray utilized a portable plane table to measure angles and triangulate the locations of the surrounding mountains. His sketch map, first published in 1913 (reprinted in the 2009 BC Mountaineer, vol. 69, p. 14) revolutionized further exploration into the Garibaldi region. It was reprinted several times and wasn't bettered until the late 1930s. Today his map serves as a window into the early explorations of the park.

Photo: BCMC archives 13-1.

In 1913, the BCMC chose again to hold their annual camp in Black Tusk Meadows. Again, Gray and P. Long went in ahead of the main group, this time with the intent to clear the trail all the way from Rubble Creek, up the steep wooded mountainside to the lower meadows in order to provide access for packhorses. Using only simple hand tools to clear trees and other obstructions, Gray and Long completed this laborious task and enabled the packhorses to take camp provisions and baggage all the way into the main camp that same year.
Credited as the first to penetrate into the region north of Garibaldi as far as Black Tusk, Gray's name had become well known to those studying in the field of geology. His first-hand knowledge of the area and his mountaineering experience were seen as valuable assets to geologist Edward Moore Burwash.

Gray was asked to accompany Burwash into the Garibaldi Region for a few days during a study on the Volcanism of the Coast Mountains. During the summer of 1914, Gray '*ably assisted*' geologist and field officer with the Geological Survey of Canada, Charles Wales Drysdale, in his fieldwork at the Yimir Mining Camp in the West Kootenays.

In 1915 Gray enrolled in geography at the University of British Columbia (UBC) and resigned as president of the BCMC. Amongst his UBC classmates, Gray was noted to be a most esteemed and respected member and was fondly referred to as a 'veteran mountain climber'. It would also be of no surprise that Gray would be elected as president of the first UBC Mountaineering Club. With his all-round ability as a climber, camper, photographer and explorer, Gray was again hired by Drysdale, and the two spent the months of July and August mapping the Bridge River area near Lillooet.

By this time Canada was deeply involved in the Great War. Gray would have probably been among the men who gave their lives for freedom on the fields of France, if it had not been for a serious illness at an inauspicious time. It was through the inspiring geologist, Charles Drysdale, that Gray would find another way to contribute to the war effort. Drysdale had turned down a well-paying position with the Consolidated Mining and Smelting Company to serve his country through the broader field of stimulating the production of strategic minerals and metals needed for the war effort. Well known for being able to apply geology to problems relating to ore deposits, Drysdale was able to assist in the development of some the most important mining camps of British Columbia.

In 1917, Drysdale secured Gray as his assistant on another one of his survey expeditions. This one was to start in Cochrane Alberta and traverse the Rockies over Whiteman's Pass. A party of five, under the direction of Drysdale, worked their way south, through territory that was full of geological problems of high research interest. Great things were expected on the trip.

Unfortunately on July 10, 1917, tragedy struck. Gray and Drysdale drowned while attempting to cross the Kootenay River on a raft. The raft was 5 m long by 2.5 m wide and made from logs 25 cm or more across that were wired and spiked together. There were three men on the raft at the time, Gray, Drysdale, and a packer named George Smith. The wrong current had carried the raft downstream and when it struck a cliff alongside a small inlet, it capsized. Smith saved himself by holding on to the capsized raft while Gray and Drysdale attempted to jump toward an embayment in the bank and swim to shore. The two men immediately disappeared from sight. No outcry was heard and they were never seen again. It was later discovered that there was a cut under the bank with very deep water and a terrible undertow. The names W.J. Gray and C.W. Drysdale along with the date, July 10/17, were carved into a large spruce tree 8 m back from the edge of the cliff where the raft hit.

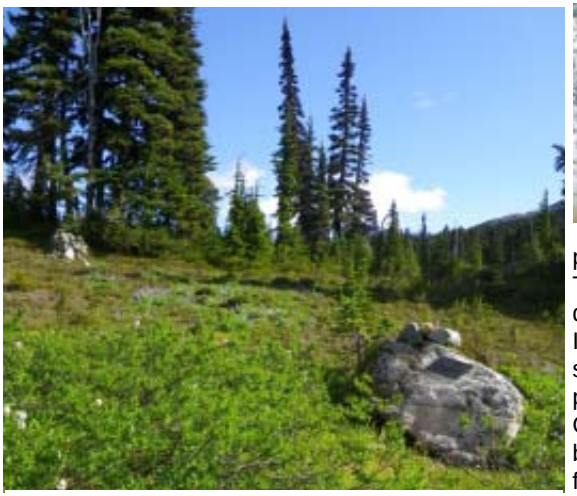
The details of the accident were described in a heart-wrenching letter written to Drysdale's wife by paleontologist Lancaster Burling, who had witnessed the tragedy. Portions of the letter were summarized and later published in a memorial for Drysdale.

"It all happened so suddenly that it seemed as if I were looking down from above with a pole in my hands ten seconds later but the cook estimated the time at a minute and a half or possibly more when I asked the next morning. We went over the ground and I ran 80 feet swam 5 feet, crawled over a large spruce tree, swam 15 feet more, climbed the gravel cliff which fortunately was not as vertical as it usually weathers, about 20 feet high, and ran 60 feet picking up a pole with a branched end, which seemed to be providentially placed by my path, before I reached the spot. But they were gone and by the way the water swirled and shot under the cliff I knew that they had been carried down. I ran to the next inlet, and the next, and then saw that Smith had saved himself and was watching the river for them. I could see the river near the cliffs and for several hundred yards downstream but neither Smith from the raft which he climbed aboard after it capsized or the bar to which he jumped, nor the cook from his position upstream where he could see into the inlet, nor I from the top of the cliff ever saw either of them after that first splash. On the chance that they might have lodged in the log jam at the upper end of bar we worked in the water there for two hours and a half. Written or spoken words couldn't convey our feelings then nor mine now. We heard no outcry and they must have gone under immediately – soundings next morning showed a cut under the bank with very deep water and a terrible undertow. The cook told me today that

he had followed me over the spruce log below the cliff and for some time was afraid he would go under himself. I had to tell him I was never conscious of the current when I swam it and only mention it now because it almost got him and it wasn't the fraction of a circumstance to the current that cut under from the inlet the boys jumped into. They hadn't a single chance. Both your husband and his assistant must have lost consciousness immediately, the time was one of instants rather than seconds, and we after the shock of almost unbelievable suddenness looked to this as the one ray of light in a picture that is so gloomy that my pen falters"

In 1918, Honorary BCMC President, James Porter, wrote a memoriam for Gray. Gray was described as an "ever-considerate friend and companion" who quickly made his mark as one of the "steadiest and most skillful members" of the club. A "stalwart who carried the heaviest share of the equipment and did all the work of making camp", it was clear that Billy Gray was greatly missed.

Several years later, in honour of the selfless contributions made by Gray, the 1929 BCMC camp in Black Tusk meadows was named 'Gray's Camp'. Those who had known Gray during his lifetime gathered around the hemlock tree where Gray had made his last blaze and built a stone cairn and temporary fence. Later, a bronze plaque, donated by fellow mountaineer Harry Somerville, was permanently fixed to a boulder in the meadows. The plaque remains there today as a lasting dedication to the memory of William John Gray.



The plaque (right) on a boulder in Mimulus Creek meadows (left) in 2011. Photos: C. Ross.

In 1930, legendary mountaineer Tom Fyles submitted a document to the Garibaldi Park Board proposing the names for various features in Garibaldi Provincial Park. The mountain pass between Mount Carr and Parapet Peak was formally recognized as 'Gray Pass' in honour of Billy Gray, and the glacier to the east also bears his name.

Standing on opposite sides of Wolverine Pass in the Kootenay Valley there are two impressive mountains that commemorate Gray and Drysdale. Mount Gray was named in 1918 as a result of the submission by the BCMC and Mount Drysdale was named later in 1924. Dornacilla Peck, the daughter of Charles Drysdale made the first ascent of Mount Drysdale with her husband John and Dr. Morely Tuttle in 1963. Christine Grotefeld, Carmie Callanan and Rick Collier made the first recorded ascent of the highest summit of the Mount Gray massif in 1995.

William "Billy" Gray was a transformational leader, dedicated to advancing the preservation and protection of the geographic region of land we know today as Garibaldi Provincial Park. He created the first gateway into a wilderness area that has been fondly referred to over the years as Vancouver's Alpine Playground. The Rubble Creek trail has played an instrumental role in leading tens of thousands of mountaineers, climbers, hikers, backcountry skiers, and snowshoers into the magnificent widespread areas of Garibaldi Provincial Park. Enduring for a century, the trail has advanced further explorations into the park and reveals a story illustrating the values and identity of the people of British Columbia. The historic Rubble Creek trail serves as an important reminder of the great achievements and defining moments in the history of Garibaldi Provincial Park.

The BCMC camp in Black Tusk Meadows in 1913

Les Ford

Les Ford joined the BCMC in 1913 at the age of 40, then began his long service on the club executive as a committee member in 1914, then cabin chairman for at least 20 years interspersed with 4 other executive positions including president - 29 years on the club executive – the 2nd longest period of service of any club member to date. He was appointed honorary president in 1933 and remained so until he died in 1952. His obituary stated "Les Ford has gone. Without him the club will never be the same. Les was the Grand Old man of the mountains, and had a longer span of active participation in BCMC affairs than any other member, past or present."

In those days the P.G.E. was not running, but was already under construction. At Squamish we took the auto-stage to Brackendale, a distance of about 7 miles. The pack horses had our sleeping bags and were to meet us next evening at Stony Creek, so we slept indoors and in beds. It was warm indoors with a number of men sleeping in one room, and I found some difficulty in getting to sleep, as the man who slept in the same bed with me turned out to have a habit of rolling completely over in bed every 3 minutes during the night – a kind of perpetual motion habit. He also dragged the bedclothes with him.

Next morning we started on our long hike into the Black Tusk Meadows. Billy Gray and P. Long ("Pelo") had been in a week or two ahead of us, and had blazed a trail for the pack horses. This was the first trail that was ever made into Garibaldi Park. Billy Gray came out from the Black Tusk Meadows, leaving "Pelo" in possession, and met us at Brackendale. He was then both director and president of the club, and he led our party into camp. We camped at Stony Creek that night, and reached the Black Tusk Meadows the next day.

Amongst others in the party I remember the geologist, Prof. Burwash, and the botanists, Prof. Davidson and A.E. Baggs. That is the same A.E. Baggs whose name appears in the memorial tablet at the BCMC cabin on Grouse Mountain. He was killed overseas in the World War. Others in our party were Charles Chapman, Walter Moore, and Ernest Burns, all since married to girls who were also at this camp.

Bob Thorburn, the club's secretary-treasurer, was there, and as a true Scotchman, he kept the union jack flying from the pole of his tent while the camp lasted, He is now working in the Land Registry office in Nelson. To further illustrate the roving nature of the mountaineer I would refer to Phyllis Dyke, Len Holdsworth and Harry Selfe, who were all at that camp. Phyllis is the girl who climbed the Black Tusk before breakfast, and then hiked out the same day all the way to Brackendale. She married Ed Beltz, another member of the club who is a geologist, and they are both in Java at present where he has a contract with a big prospecting company. Len Holdsworth is in California, and Harry Selfe is at Anyox, B.C. "Pelo" is also in California. Billy Gray, as you all know, was drowned in the Kootenay River with Dr. Drysdale, while on a geological survey. Korten, who was also at this camp, stayed over at Brackendale after the camp came out, to go fishing and hunting, and was drowned in the Cheakamus River when his canoe capsized. He was short-sighted and wore glasses, which got wet when he fell in the water, so that he was unable to see, so he just floated down the stream on his back. His mate swam ashore and shouted to him to grip the branch of a tree which he held out to him, but his ears were under water, and he failed to hear. Then he was sucked into a whirlpool, drawn into the vortex and taken down. The body was not found until about a year later.

The union jack flies. Photo: BCMC archives 57-14.

We had a cook and a cookee to look after our meals, and there was plenty to eat the first week, but the second week was a calamity. The bacon and eggs were finished, and we were practically out of everything except beans and dried apricots. The flour was nearly done, and we only got a slice or two of bread each day. When the cookee beat the call to breakfast on the frying pan, everyone had to make a wild rush for the breakfast table, or all the food was gone. I lost weight rapidly, and vowed that this would be my first and last BCMC camp. The secretary claimed that he provided sufficient food for all those who

Participants at the 1913 (top left) and 1913 or 1914 BCMC Black Tusk meadow camps (above and middle); Mt. Garibaldi from the Black Tusk (bottom) at the 1913 or 1914 camp. Photos: BCMC archives 57-9, -18, -19, and 61-1.

had made reservations within the time limit, but that he had been swamped by others who had come in at a date when it was too late to send in more food.

The boys built a raft of logs, and a party of 5 crossed the lake in it to climb the "Table". They climbed up to the "Jug Handle", but failed to make the top. This was the first craft ever launched on Garibaldi Lake.

We had a mock trial in camp, and Bill Taylor (who was one of the crew) was tried for deserting the ship. He landed at Red Mountain, and walked around to Lakeside, as he found the raft's progress unsatisfactory. Ted Parke (another of the crew) was the star witness for the Crown. Counsel for the Defense asked him "Was not the accused compelled to desert the raft because he was being starved to death?" Witness, "There was plenty to eat". Counsel for the Defense, "What did the food consist of?" Witness "Beans". Loud groans in Court, and verdict of acquittal.

As we had no means of crossing Garibaldi Lake, if you except the raft, we did not climb Garibaldi or the Sphinx, but we climbed Castle Towers, Helmet Pk., Red Mtn., and of course, the Black Tusk; visited the Barrier and the Sphinx Glacier, and went as far afield as to overlook Cheakamus Lake. We still have photographs of the ice cave at the snout of the Sphinx Glacier as it appeared in those days, but of late years a great part of it has broken away.

The weather was satisfactory, although a thunderstorm wandered around the hills one afternoon, and on one or two evenings there was a slight drizzle of rain around the camp fire, but nobody minded it.

The 1926 BCMC summer camp – Black Tusk Meadows, 8-22 August, 1926

Neal Carter (Published in BC Mountaineer, Vol. 4, No. 7, September, 1926)

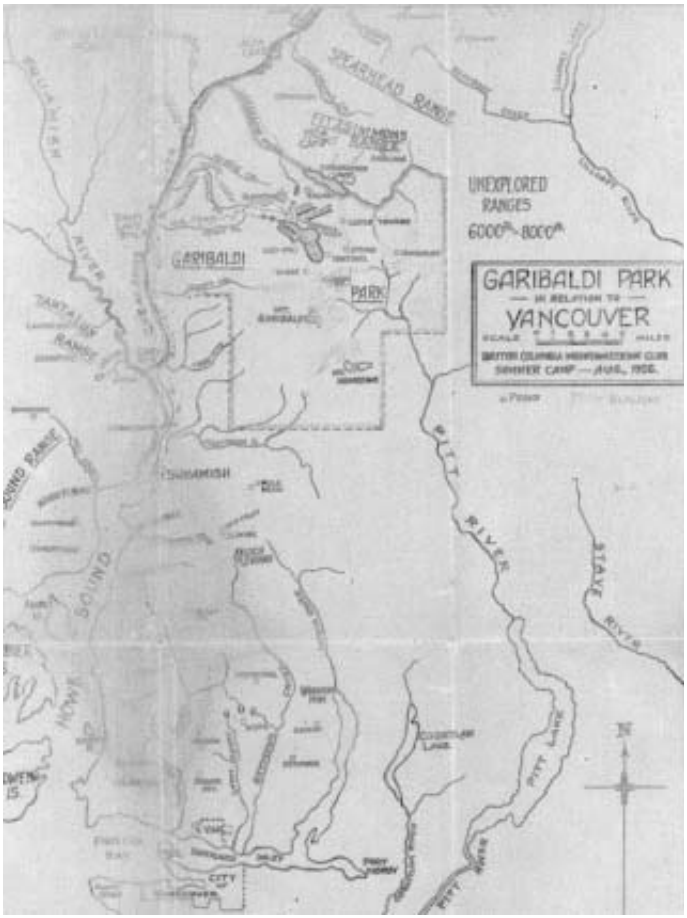
Neal Carter joined the club in 1920 and was unfortunately one of the group of very active climbers who resigned in 1926. He served on the club executive as its first membership chair in 1925, and was also editor in 1924 and 1926, and librarian in 1921 and 1922. He was noted for his surveying and first ascents in Garibaldi Park. Mt. Neal and the Carter Glacier in Garibaldi Park were named after him.

Camp is over for another year. The last hectic days of preparation, the strenuous climbs, the swims in Mimulus Lake and the pleasant afternoons spent under a dripping tent are now but memories save for the photographic reminders. And it was a most successful camp – from a standpoint of both climbing and purpose.

It will be remembered by those of us who were unable to go, that the camp this year had a definite object in advertising the beauties of Garibaldi Park to the appreciative public, which was invited to attend on the same standing as club members. We wanted boosters to return from the Black Tusk Meadows and talk about the scenery and glaciers, the lakes and the flowers, until every lover of outdoors in Vancouver would want to go and see the place for themselves; thereby awakening sufficient interest on the part of the government to cause the development of transportation and accommodation according to modern standards.

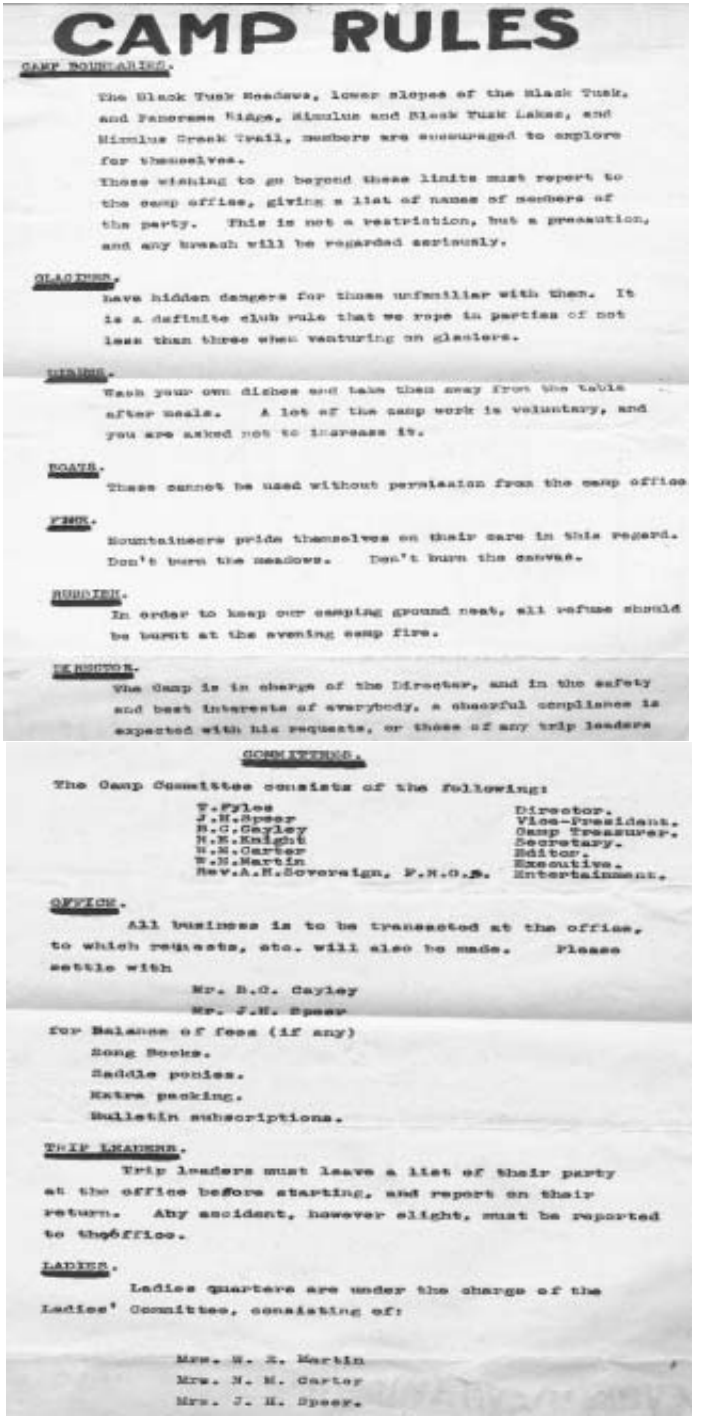
At first the committee was swamped with names of applicants, many of which were handed over to the Bell-Irving camp with the idea of limiting our own to more or less representative personages. Then followed days of despair when unavoidable dropping-out was followed by a paucity of registration of our own members, and Camp looked like a flop. However, the usual 'last-minuters' turned up from all over, and finally almost a hundred paid-up names were on the list. The editor [Neal Carter], although on the Camp committee himself, probably did less work than anyone else, and therefore does not feel his modesty too keenly to withhold a few words of credit for that body responsible for the great mass of detailed work behind the scenes.

Tom Fyles, originator of the idea, did a lion's share as usual, by practically organizing the camp and acting on committees too numerous to mention. The planning of schedules alone was a tremendous task. "Reg" Knight must have sat up nights at his typewriter to handle the immense amount of correspondence re packers, freight, food, applications, trail mending, etc., etc. The holiday obtained from his meagre two or three days at Camp was all out of proportion to the amount of work done by Mr. Knight for the Camp, and if anyone deserves the gold-plated edge-nail, it is he. "Bev" Cayley, the Camp treasurer, undertook the task of classifying and collecting the dues from one hundred people going in for all periods of time. The expenses of supplies, equipment, freight, packing, etc., had to be carefully checked, and the responsibility of handling several thousand dollars to stand auditing was no sinecure. In fact, everyone agrees Bev worked too hard for his health.



Map produced for the camp. BCMC archives 75-03.

W.E. Martin was the official “go-seer”. Any time the P.G.E. or anything else proved intractable, it was Bill’s job to go and see what could be done. As business manager, his stand-in with everyone in town proved invaluable. Rev. A.H. Sovereign, a most busy person always, found time to organize the excellent camp-fire programmes, had a hand in the song book, and discovered the popular young lads who helped around Camp. John Speer earned his title of Quartermaster by securing the supplies after much figuring and obtaining of quotations. The cooks were also under his charge; although quiet about it, John did a lot.
The details of the happenings at Camp are too numerous to relate in full, but a few of the outstanding features should be chronicled here for the interest of those who could not attend, as well as to serve a record of the Camp.
The site and fixtures of the preceding Bell-Irving camp were taken over as they stood; Tom Fyles going in a few days in advance to superintend the enlargements to the dining fly and other matters made imperative by our larger numbers. In this work, he was assisted by Mr. Percy Lockie. A small group of Club members and a few friends came in on the evening of Saturday, August 7th, to assist in erecting the extra Club tents and some of the private tents the next day in readiness for the weary travelers expected any time after 7 pm Sunday evening. Mr. Sovereign and several of the members went down to the first meadows to succor the faint with hot tea; as a result, everyone got in camp that evening despite arrangements having been made for accommodating some half-way up the trail. Of course, some stayed very wisely at Daisy Lake for the night, to make the grade in easy stages by daylight Monday, swelling the number in Camp to 77.



CAMP RULES

CAMP BOUNDARIES.

The Black Tusk Meadows, lower slopes of the Black Tusk, and Panorama Ridge, Ribulus and Black Tusk Lakes, and Ribulus Creek Trail, members are encouraged to explore for themselves.
Those wishing to go beyond these limits must report to the camp office, giving a list of names of members of the party. This is not a restriction, but a precaution, and any breach will be regarded seriously.

GLACIERS.

have hidden dangers for those unfamiliar with them. It is a definite club rule that we rope in parties of not less than three when venturing on glaciers.

DISHES.

Wash your own dishes and take them away from the table after meals. A lot of the camp work is voluntary, and you are asked not to increase it.

BOATS.

These cannot be used without permission from the camp office

FIRE.

Mountaineers pride themselves on their care in this regard. Don't burn the meadows. Don't burn the canvas.

RUBBISH.

In order to keep our camping ground neat, all refuse should be burnt at the evening camp fire.

DISCIPLINE.

The Camp is in charge of the Director, and in the safety and best interests of everybody, a cheerful compliance is expected with his requests, or those of any trip leaders

COMMITTEES.

The Camp Committee consists of the following:

T.Fyles	Director.
J.H.Speer	Vice-President.
R.C.Cayley	Camp Treasurer.
H.M.Knight	Secretary.
H.M.Carter	Editor.
W.E.Martin	Executive.
Rev.A.H.Sovereign, F.R.G.S.	Entertainment.

OFFICE.

All business is to be transacted at the office, to which requests, etc. will also be made. Please settle with

Mr. R.C. Cayley
Mr. J.H. Speer

for Balance of fees (if any)
Song Books.
Saddle ponies.
Extra packing.
Bulletin subscriptions.

TRIP LEADERS.

Trip leaders must leave a list of their party at the office before starting, and report on their return. Any accident, however slight, must be reported to the office.

LADIES.

Ladies quarters are under the charge of the Ladies' Committee, consisting of:

Mrs. W. E. Martin
Mrs. H. M. Carter
Mrs. J. H. Speer.

Camp rules! BCMC archives.

Climbs started almost immediately with a trip to Castle Towers, Helmet and Panorama Ridge. The weather was glorious except for the pall of smoke which blotted out everything but the nearer peaks after Monday afternoon. Camp was pitched beside Parnassus Creek on a site chosen by the former camp to give a lovely view of the Tantalus Range across the Squamish and Cheakamus valleys, as well as a majority of the peaks at the far end of the lake. In fact, Black Tusk and Castle Towers alone of the major peaks were invisible, since even the tip of Garibaldi could be discerned peeping over the shoulder of Red Mt.

The "Evinrude" engine proved a great boon by demonstrating its ability to push the "Hap Hazard" and tow the "Bill Wheatley" with 14 souls and their packs. Going down to Lakeside subsidiary camp became a pleasure rather than an ordeal as at former camps. That is, to all except Roy Howard. Roy more or less adopted the engine, whereupon the engine adopted Roy's goat. (Not to be confused with a "goatee", a word originating in the "Georgian" era.) During the trials of the wet second week, the engine, after a night's submergence in the waters of Drift Bay, developed ignition trouble and was just able to sputter home through a driving hailstorm with a load of damp people who had been at Lakeside Camp cooking in the rain for the best part of a week while waiting to climb Garibaldi. The "Evinrude" was bad enough, but Roy was even ruder; he swore (!) off it for life, and nearly had a lawsuit with Bill Martin over alleged incendiarism.

While the good weather lasted, there were ever so many trips daily. Hikers in great numbers visited the Barrier, Panorama Ridge, Desolation Valley, where an especially fine ice-cave on the Helmet Glacier was a great attraction, and the East and West Bluffs above Camp. Great credit is due to the trip leaders who gave up good climbs to pilot visitors on easier trips, Mr. Sovereign being particularly splendid in this work. Black Tusk was visited almost daily, and everyone that could possibly make it was urged to do so; Miss Alice Stark, school nurse of Westminster, probably being the proudest person in Camp at having reached its summit, while in the case of Garibaldi Peak, we believe Mr. E.H. ("Daddy") Grubbe, of the Bank of Montreal, got more kick out of the attainment than anyone else. Miss Dorothy Bell-Irving liked Helmet, her first mountain peak, so well that she returned later to climb it the hard way, and we are sure that Phyllis Tweedale will always have a soft spot in her heart for the Sphinx.

The tongue of the Sphinx Glacier was visited by quite a few who made their first acquaintance with the moulins and whatnot on its gentle snout. The hoodoos on Red Mt. proved attractive to many, while the complete circuit of the lower slopes of the Black Tusk was scheduled as a nice interesting "short" trip. The cinder cone between the two mouths of the Helmet Glacier was studied by visitors interested in volcanic phenomena, as was the Barrier by those fortunate enough to have been on the trip with Dr. Burwash, who explained all about it on the field.

The visitors entered into all arrangements with the utmost enthusiasm, easily overlooking the trivial inconveniences bound to occur during two weeks under canvas. Witness the effort put into the "Avalanche Roar", the Camp chronicle edited by Mrs. E.M. Cuppage. Contributions poured in, and the reading of Vol. III by the camp fire was a great success. A mock trial in which one George Wallis was justly arraigned on a charge of harboring two hirsute appendages to wit: one moustache and one goatee, called forth the ablest legal defense in the country and provided the company with much amusement. A golf course at first instituted as a joke, was taken seriously and enlarged to nine holes with hazards and everything. The niblick, mashie, and mid-iron were all incorporated in one serviceable curved tree stem, while "Spalding's Best" was a tennis ball sadly waterlogged. A deck tennis court led to very exciting championship eliminations.

Garibaldi Lake with the Sphinx (left) and Sentinel (right) glaciers seen at the 1926 camp. Photo: BCMC archives 7-17.

On Sunday, Rev. A.H. Sovereign held a very appropriate service in the dining fly, during which he drew several analogies between the ascent of a mountain and the trend of one's lifetime. This was attended by practically

everyone, as no official trips were scheduled for the day. Around the camp fire, entertainments were given by various talent, and short popular lectures on the geology of the region, glaciers, use of the alpine rope, and alpine photography proved very instructive. A most entertaining and informal talk was given in the form of a series of reminiscences by Major H.T. Curtis on Allenby's entry of Jerusalem. As a fitting close to the pleasant gatherings, humorous souvenirs prepared and carried in by Mr. R.E. Knight were sold by auction on the last night, followed by much bouquet-throwing between visitors and Club members.

The Camp was fortunate in securing the services of a cook who has been to two preceding camps, and knows what we like by this time. As an exemplification of the avidity with which Mr. Hardcastle's victuals were ingurgitated, Jo Spence, on arriving 25 seconds late at breakfast one morning, found the mush all gone and the last flapjack just being cut on Roy Howard's plate.

Of the more serious climbing, we are pleased to record the first ascent by ladies of the notorious Table. Misses Edith Henley and Emmie Milledge made the top, led by Tom Fyles, its first conqueror. Mills Winram and others were prepared for the ascent, but owing to the lateness of the hour, unselfishly gave up their opportunity and assisted the two ladies. As it was, Miss Henley and Tom Fyles had to descend in the darkness by the aid of a bonfire kindled on the ridge below. Miss Milledge was also the first lady to ascend the north pinnacle of the Black Tusk. The only first ascent of the Camp was made on August 12th, when Mr. Lakeside Camp at 6.30 am, crossed the headwaters of the Pitt River beyond the Sentinel Glacier, and climbed the farthest peak of the Pitt Range. The 7,800 ft. summit, surrounded by glaciers, provided a thrill at the last moment by presenting a perpendicular chimney on the final rock climb. The summit is composed of three small slabs of granite, and accommodates about as many people as does that of Helmet. The peak was named "Luxor" by Mr. Hossie, because of two splendid Egyptian profiles seen during the approach. Leaving the summit at 4.15 pm, the party raced against darkness around the battlements of the Sphinx neve, to be overtaken just before reaching the Sentinel Glacier. This was traversed to its mouth by the light of three candles and the remainder of the night spent without shelter or bedding on the terminal moraine, reaching Lakeside Camp next morning just 24 hours after leaving.

Scientific work accomplished during Camp consisted of the gathering of plants and seeds for Lady Byng by Messrs. Bennett and Barnes; the collection of several unique, if not new species of insects by Mr. G.A. Hardy of the Provincial Museum, Victoria; the identification of new animalcula from Garibaldi Lake and the glaciers by Mr. and Mrs. Berkeley of the Biological Station, Nanaimo; and a photo-topographic detail survey of the park and surrounding ranges, together with standardized measurements for ice retreat on the Helmet, Sentinel and Warren glaciers by Mr. Neal Carter. The weather during the first week was too smoky for survey work and the rain during the second week held until Friday. Saturday and Sunday, however, dawned cloudless, these two days more than making up for all the smoke and rain, since the atmosphere was so clear that boats could be seen on Howe Sound with the naked eye from the Black Tusk. It was also believed that Mr. Munday's "Mystery Peak" was seen.

A brief summary of the activity of Camp is contained in the following:

Club members at Camp …… 44
Visitors at Camp …… 58

Total numbers of persons ascending –

Garibaldi …… 81	Sentinel …… 28	Castle Towers 14
Red …… 20	Sphinx 7	The Table.....5
Black Tusk …… 60	Helmet …… 30	

Three intended trips to Garibaldi during the second week had to be cancelled because of bad weather. Mr. Roddy Gaudet, on a private trip during Camp, made noteworthy ascents of all the main peaks, including Garibaldi, on his own initiative.

Fred Parkes, Harold O'Connor and Stan Henderson stayed in an extra week, making an ascent of Garibaldi by the western arête. They also investigated the catacombs of the Sphinx, and found Castle Towers to be the highest mountain in the park! The aneroid registered 8700 ft upon their arrival and

rose 600 ft while they sat still and enjoyed the ascent. The peak happened to be the centre of a local snow storm at the time. Parkes and O'Connor climbed The Table, and while showing a party of four visitors from the Seattle Mountaineers around, they gave an exhibition climb of the pinnacle of the Tusk.

Garibaldi Summer Camp, 4-17 August, 1947

Mary Willis (published in BC Mountaineer, Vol 26, No 1, September, 1947)

Mary Willis joined the club in 1937 and was a member of the group that kept the club going during the 2nd world war and reactivated it after the war. She served on the club executive for 8 years as editor, secretary, and membership chair. She reactivated the newsletter when she took over as editor and as membership chair, launched a program of visiting schools to boost post-war club membership. She remained very active with the club over a 30 year period and was made an honorary club member in 2002 for all her contributions. Unfortunately she died only a few months after being given honorary status.

Monday, August 4

Dear Diary:

On Monday, our hiking party of seven (Olive Clayton, nee Selfe; Nell and Elliott Henderson, Bob Bennett, Jim Teevan, Clare and Mary Willis) reached the start of the trail about quarter to five after an interesting, though leisurely trip from town. Seventy five switchbacks (Elliott's count) and 458,354,002 mosquitoes later, our hard-bitten little band reached camp during the evening bonfire and were regaled with cups of tepid coffee.

The advance party of three, Charles Gilbert, Sid Lowdell and Jim "Yim" Glover, the bull cook, who had left town Friday, and the airborne group of 14 who had arrived Sunday, had made a good job of setting up camp. The fliers (Estelle and George Rose, Betty Gilbert, Jean Fitch, Agnes Milligan, Jo Howard, Terry O'Sullivan, Clara Johnsen, Ella and John Booth, Mr. Bains, John Woods the cook, Cecil Moffitt, Ted Wickland, and Bill Patterson who was along for the ride), had a smooth trip of 40 minutes, except for a few bumps around the Black Tusk. The most lengthy and hazardous part of their trip was apparently their ride to shore in a motley assortment of leaky boats.

Monday had been spent working, and in a short Wickland excursion up the ridge behind camp; said excursion being highlighted by a demonstration of mud glissading by Terry.

Tuesday, August 5

An excursion led by Ted Wickland, up Panorama Ridge was made today. The return trip was by way of the snow slope, Helmet Glacier and an interesting scree ravine beside the cinder cone. The weather was perfect and the swimming in Mimulus Lake very enjoyable. I think the mosquitoes enjoyed it too so everyone was happy. Of course there are always a few timid souls who stand on the edge and scoff.

Wednesday, August 6

Another short, all-day Wickland excursion was made today, this time down Cabin Creek past the A.C. cabin site, the Waterboard cabin, Lesser Garibaldi, Barrier Lake and the Barrier. A stop was made at Lesser Garibaldi for lunch, where the fishermen had a field day, catching 7 fish which we promptly fried and ate on the spot. We returned by

The most hazardous part of the approach (top); the camp (middle and bottom). Photos: E. Rose, BCMC archives 85-100, -104, -106.

The Table and Mt. Garibaldi in 1947 (left). Photo: P.L. Tait, BCMC archives 39-99. Views from the Panorama Ridge area during the camp (right). Photos: E. Rose, BCMC archives 85-110, -113.

way of the Outlet and a steep, but pleasant trail that landed us back on the upper meadows close to Parnassus Creek and our own BCMC cabin site.

In the meantime, Elliott Henderson had led an ambitious party of four up Helmet Peak, as nasty a piece of loose rock as there is in the park.

After dinner a group went over to the club cabin site and all were unanimous in their praise of the spot. It is well up on the meadow, is situated on a lovely little stream (Parnassus), and commands a fine view of the Tusk.

Thursday, August 7

John Booth led a party of 15 up the Black Tusk today. The dubious weather turned really bad on top and we shivered in a sleet storm with no view to distract us from our misery. Equally grim was the monotonous descent down the "coal" pile on its western end. However, the sun came out and the flowers were beautiful on our return trip down the ridge behind camp.

One of my keenest memories of the trip was Terry's tummy traverse on the top of the chimney, while her big boots wildly flayed the air over my head. Still, I do think Cecil's remark that Terry was having a "terryble" time was uncalled for.

During this first week George, Charles and John spent many hours in repairing the boat so as to make the mountains at the far end of the lake more accessible.

Thursday evening the weather finally made good its threats and we soon discovered that the boat wasn't the only leaky thing around camp. The girl's community tent, being the largest and driest, was the scene of a gay little party. However, festivities were rudely interrupted when Bob discovered that he was damming up a rising stream that was pouring its way under the tent wall. (Betty's energetic ditch digging seemed to have kept her corner dry at any rate). After Bob had leaped to his feet, there was an interval of wild activity while Charles ran for the shovel and others grabbed ice-axes to construct a ditch through the middle of the tent and out of the doorway! (Use no. 116 for ice-axes.)

Friday, August 8

Fortunately our dyke held, perhaps because it was frozen. At any rate, when we poked our heads out at the 7.30 am warning gong, we found that it was snowing – not just the odd flake, but snow that covered the ground. During a hilarious breakfast eaten in parkas, toques, and mits (mosquito netting was for once abandoned, even by Ella), word got around that a tent had collapsed. Most of us laughed uproariously thinking it was Jo's and Agnes', however, laughter turned to agitated shrieks when we learned that it was the girl's big one. Not only did the front end squat down like a tired camel, but it had no sooner been hoisted into position when the back end flopped to the ground. What an opportunity it provided for camera fiends from the other tents!

After that excitement our thoughts turned to other forms of amusement. Rude things were said to camp committee for neglecting to add skis to their list of camp requirements, however, games of ring-around-a-rosie, London Bridge and tag were indulged in by the childish-minded (practically 100% of the camp enrollment). Following this, an all-femme expedition, led off by Jo Howard and led home again by Estelle, finished off the morning nicely.

In the afternoon a big bonfire at Driftwood Bay and a successful try-out of the repaired boat rounded out the day.

Saturday, August 9

Charles Gilbert led a party of 8 up Sentinel. Most of the rest of us who were staying another week went overland to Red Mountain (Mount Price), led by George Rose – another of those so-called "strolls".

Another plane-load arrived today. (Kay Smith, Nell Pedden, Bill and Marg Elliott, Pearl Eckley and Ron Tully.)

In the evening we had a last bonfire for those leaving next day and everyone went through the ordeal of a recitation or song. (Who gets these ideas anyway?)

Bonfire at Driftwood Bay. Photo: E. Rose, BCMC archives 85-116.

Sunday, August 10

A rather gloomy morning was spent in watching people pack for home. The weather was cold and rainy so numerous washings were done in the hopeful spirit that the weather, being so awful, was bound to improve in time to dry them. People are so optimistic at times!

I took our geology expert, Jean "Rocky" Fitch, down on her first trip to the Barrier. The sight had her muttering under her breath in the odd way most geologists seem to have, and she was as hard to dislodge from the rocks as some of the fossils, when it came time to go home again.

The boys had made a drum heater and after dinner set it up in one of the tents for a badly needed drying room. Perhaps the reason that there was hardly a dry stitch in camp was as much due to leaky boots and seat glissading as to the weather. We all spent a happy evening steaming in the tent along with dozens of pairs of wool socks, insoles and boots. Our friends from Mimulus Creek joined us and the accordion player entertained us with his music. Estelle's delectable cocoa added the perfect touch.

Resting below Guard Mtn. Photo: E. Rose, BCMC archives 85-133.

Monday, August 11

We started off the week in a business-like manner with a trip up Glacial Pikes, lead by Clare Willis. The weather was grand and the trip greatly enjoyed, especially by Kay, who is returning to climbing after a long absence. A marvelous view was had of Garibaldi, with a huge avalanche pouring down her North Face. The glissading on our return trip was literally breath-taking. In the evening we were invited over to a bonfire at the Mimulus Creek encampment. Another camper arrived via the Barrier and much bush.

Tuesday, August 12

This was the day scheduled for Castle Towers and the trip many of us had been waiting for. Led by Elliott Henderson, we made fair time over the glacial rubble, crawled up a steep heather slope,

"Red Mtn." summit . Photo: E. Rose, BCMC archives 85-120.

traversed various loose slides, and kicked on up the glacier to a point somewhat below Phyllis' Engine at 8450 ft. Crossing to the stone wall the peak seemed within our reach, but a loose rock chimney proved too hazardous and we were beaten within 300 ft of the summit. It was disappointing, but by returning part way down the glacier and cutting across we still had a good climb up onto Polemonium Ridge. The return trip was made down an exceedingly steep wooded ridge.

The cook's delicious pea soup certainly hit the spot with eight tired, hungry hikers when we pulled into camp. During our absence another trip was taken to the Cinder Cone. However, everytime I tried to find out about it from Kay or Nell Pedden they just broke into gales of laughter. Evidently Little Eva crossing the ice had nothing on Little Pearl fording the creek assisted (?) by Ron.

Garibaldi from near Castle Towers. Photo: E. Rose. BCMC archives 85-125.

Wednesday, August 13

A lazy day was declared for today and a picnic at Sphinx Glacier planned. A clear sandy beach tempted several of us in for a swim. I guess we forgot for the moment it was at the foot of the largest glacier in the area, but we were quickly reminded of that fact. It was refreshing, however, and gave us larger than our usual appetites for the abundant lunch.

Of course on these so-called lazy days someone always wants to see something. In this case it was the Elliotts who wanted to see the glacier. I don't doubt but what they could have found it for themselves, but with no persuasion at all several of us accompanied them. Color photo bug Bill was snapping like mad at all the flowers and blue ice caves as well as at the girls in shorts.

Because we weren't quite tired and hot enough, Rocky and I took a fruitless side jaunt in search of Gil's color camera which he had lost on the Castle Towers trip. Others explored the lake shore and it is rumoured that one sensible person actually did loaf.

Estelle and George Rose. Photo: E. Rose collection, BCMC archives 85-132.

The lazy day at Sphinx.
Setting out, Clare Willis at helm (top); Resting below Guard Mtn. (middle); The Sphinx (bottom).
Photos: E. Rose, BCMC archives 85-129, -130, -133.

Thursday, August 14

A party of 9, lead by Clare Willis, climbed the Sphinx in glorious weather. “Just another stroll”, they said, “suitable for beginners”. (I’m beginning to class mountaineers along with fishermen in the matter of veracity). The Elliotts made their first big climb and proved that they are both grand sports.

Friday, August 15

Some more left for home today. Most of those remaining cruised the lake and explored the old Lakeside Campsite. The flowers, which were disappointing the first week, were now at their best.

We attended another bonfire at Mimulus Falls at night. The fire was so near the falls that some spectators clung to trees to keep from going over. Perhaps some did. With so many vague forms bobbing around in the gloom it was hard to be certain. At any rate those that stayed were treated to homemade biscuits by Mrs. Phoebe Todd, and cocoa with marshmallows.

Saturday, August 16

This was a day of work and a jaunt to Desolation Valley and the Cinder Cone with Nell and Elliott. I have memories of Nell lying on her back on the bank of the Helmet River with her feet in the air and uttering the most unearthly shrieks. I didn’t quite understand why until Elliott and I came skipping through the same stream, which was knee-deep, fast, and of such frightful iciness that we were paralyzed for some minutes after.

After dinner visitors from Wallace’s camp and the Waterboard cabin came around. When they left we spent a rather dismal evening dismantling the supply tent, sorting and packing the remaining grub, etc.

Sunday, August 17

Breakfast at 6 started off one of the daffiest days it has ever been my luck to experience. Frenzied packing, tidying up of the camp grounds and last minute flower picking filled the early hours, but by 9 o’clock all were away, four by trail and eight heading for the Barrier.

Racing loose rocks down the Barrier proved to be exciting sport, but the miles of agonizing travel over the boulders of Stony Creek, and the endless dusty road in the blazing sun of noon, with train time growing alarmingly close, was a dizzy nightmare. (If anyone calls this “just a stroll”, I won’t be held responsible for my actions!)

However, we made it! – by a good three hours, the P.G.E. engine having blown a gasket, or whatever it is that engines blow besides their whistles, farther up the line. Hastily dunking our grateful doggies in the Cheakamus, we again reassembled on the siding behind the station and there, on the rocks and dust of the roadbed, made camp. We were afraid to leave for a more inviting spot in case the wily engine slunk into the station without our hearing it.

We were now joined by the accordion player and his pals and after a hearty lunch we started up a sing-song that was destined to continue with only brief intermissions until 3.30 next morning. Curious tourists in bright sports dresses and white flannels stared from a safe distance and I don’t doubt but what we were the toughest looking bunch they ever laid eyes on, the boys with their two weeks growth of beard, and all of us covered with the yellow dust of the Barrier.

The train finally came about 4 and we climbed aboard, not to sit on soft upholstered seats, but to spend the time in the vestibules or prowling the aisles where our wild appearance and sharp ice-axes sent more than one passenger into near panic.

At Squamish (not the dock), the train stopped for another little rest of some 5 hours. While the regular passengers rushed the restaurants of the town our gang took over an entire coach. Passengers who ventured through were somewhat startled to see cans of salmon and sardines travelling from seat to seat, and a billy of tea boiling cozily on its little heat tablet stove in the middle of the aisle. Those who were used to P.G.E. informality, however, scarcely gave it a second glance. Even the sight of a roughneck shaving off a 2 week’s growth of beard in the ladies’ wash room didn’t appear to faze them – much.

After several hours spent eating ice cream, singing, playing crib, and making interesting sallies into town, we finally heard the call of “all aboard”, and we rode the remaining mile to the dock. Here was a further delay, this time dark and cold, spent on the wharf waiting for the boat. The billy was again put on to boil, this time set in a frying pan to keep from burning up the dock. However, the boat arrived midway

in the proceedings so the billy of hot water, stove and pan had to be carried aboard through a crush of some 400 people all trying to get on a boat built for 250.
The tea party and sing-song continued on the upper deck where those lucky enough to possess parkas and a few other hardy souls put in the hours until 3.30 am when we finally docked.
The “little” lunch that Estelle had packed and we had kidded her so much about, was now getting a trifle thin, fifteen people having had two abundant meals from it; nevertheless, there was still enough left for a snack with another cup of tea. The food and music were really what kept us going in such high spirits, but it was a mighty tired party who ended their day some 23 hours after starting it.

Mamquam Mountain On Skis, 22-24 April, 2011

Diana Diaconu

Some things are not meant to happen. For us it was the 2011 Exodus ski traverse. Our party left Vancouver excited and confident about having the right snow conditions and weather window to do the traverse on skis over the Easter weekend. For mountain and ski addicts what better way to celebrate a holiday? Our enthusiasm, however, suffered soon after entering the Squamish River road. Our maps and GPSs were showing an elevation of less than 100 m, the areas and slopes nearby had very little or no snow at all, yet the road was snowpacked. A local had ventured with his big truck onto the snow and was busy shovelling his way out. We halted, talked to him, discussed our situation and turned around. It was time to switch to plan B. Except there was no plan B.
Some more discussions on the way, taking into account our preferences and time frame, led to a new destination - Mamquam Mountain. Except for our trip leader, Peter, none of us had been up there and the mountain lured us all.
We reached a very busy Elfin Lakes parking lot before noon. Several parties were preparing to head up the trail and there were friends and fellow BCMC club members among them. One party heading for the Garibaldi Névé was led by the Coast Mountains backcountry guru, aka John Baldwin. We were very fortunate to meet John as he shared some of his terrain knowledge with Peter. This would later prove to be an important detail in turning our beautiful ski trip into an interesting and unique tour.
We later said good-bye to John and his party at the Elfin Lakes shelter where we had a late but relaxing lunch break in the sun. The route from Elfin Lakes down to and up Ring Creek had a few tricky spots, negotiating heavy snow and a steep traverse. Past Opal Cone the undulating terrain seemed much larger than I remembered from a previous summer hike, but the breathtaking views of Mamquam ahead and Garibaldi behind were very rewarding all along. As a matter of fact, Mamquam Lake seemed much further than I remembered and we were all feeling tired by the time we got there. We had gone through the exercise of taking off skins and putting them back on a few times and the last stretch, dropping elevation to reach the lake, had been on a nasty crust. We reached our campsite at the South end of the lake before sunset, but it was already dark by the time we were cooking dinner. We were surprised to discover that several parties were already camped by the lake.
Next morning we started early with our group quite spread out. After some route-finding to cross the creek, avoiding the small canyon, we dropped down onto the Eanastick Meadows. There we regrouped and finally started our ascent through steep trees. After a while Trevor, who had pulled a muscle the day before, decided to turn around and soon after I was convinced I’d do the same, having a hard time keeping up with the rest of the group. But once the grunt in the trees came to an end and I emerged into the alpine I changed my mind. It is very hard to resist the lure of a beautiful mountain in excellent conditions.
Our route took us up steeper slopes following an existing up-track. We passed a lonely tent pitched in a beautiful spot with panoramic views of Mt. Garibaldi. Our route went northeast towards a col then skirted east around an unnamed peak, before heading south across the icefield. At the col we met a

small party of friends on their way down. Theirs was the tent we had passed; they had started earlier and lighter the day before and so had got higher up the mountain.
The vastness of the icefield was awe-inspiring; it certainly reminded me of the stunning scale of the Mt. Logan high plateau. We were mere specks on the immaculate expanse. One's perception of distances can get distorted in these surroundings. Traversing the plateau and then skinning up the last steep slope before the summit took longer than expected. There was a track traversing below Delusion Peak to the west and we saw a party descending that way. Later that evening we were to learn that the summit had been the meeting point for 2 VOC parties: one starting from Mamquam Lake just like us, the other from another camp south of Mamquam (via the Skookum Ck. approach).
The iced summit pyramid offered stunning 360 degree views of countless mountain ranges and a sense of accomplishment to all of us. After a lunch break in the sunshine on the col just below the summit we started our descent. The turns were sweet down the long slope, but we didn't drop all the way down to the plateau. Following John







Ascending to the summit, with Peter and Silke (2nd top left), then endless skiing down, with Silke, Silvia, and Dan (3rd top left). Mt Garibaldi is the major mountain behind the summit, bottom left and bottom right. Photos: S. Bakovic (top left, 2nd top left, bottom right), M. Hearnden (other photos).

Baldwin's tip we left our up-track and stayed more to the left, traversing the slopes around Darling Peak. Peter identified the narrow "gate" where we entered a gully. Soon we were skiing again some steeper slopes in snow that became heavier as we dropped elevation.
Our route down converged with our up-track somewhere in the steep trees prior to reaching the Eanastick Meadows. From there skins were back on and we went up and back to camp.
After such a great day our appetite for more skiing and ski mountaineering was not exhausted. So we played with ideas: climbing Garibaldi the next day on the way out, or maybe doing the Névé. Despite not having the logistics for the Garibaldi Névé in place, it would have still been possible to call a cab and get ourselves out. But the next morning wasn't as clear and bright as the days before and by the time we were back on the higher grounds near the Rampart Ponds the weather had changed considerably. Wind and snow, then more snow and whiteout made us reconsider our options. The Névé lost its appeal in whiteout conditions so we decided to retrace our steps to Elfin Lakes and back to our cars. We enjoyed a sheltered lunch break in the Elfin Lakes shelter then continued in constantly deteriorating conditions. In Squamish we celebrated our successful trip and Silvia's birthday at *Pepe and Gringo's* restaurant before heading back to Vancouver in the rain.
Our second attempt to do the Exodus traverse a month later failed because of foul weather. It certainly wasn't meant to happen in 2011.

Participants: Peter (organizer) and Silke Gumplinger, Silvia Bakovic, Sylvain Rubenthaler, Mary Hearnden, Dan Carey, Trevor Norman, and Diana Diaconu.

The Stave Glacier Expedition - North Harrison Lake to Upper Pitt River, 3-16 August, 2011

Adam Palmer

In August of 2009, Evan put a message out on an online forum asking if anyone was interested in heading out on a trip to the Terrarosa Glacier. I saw this post and it immediately got my attention. I had never met Evan before, but I soon found myself around his kitchen table in Abbotsford planning our trip for September of that year, where we would take 5 days and see how many of the Fire Spires we could climb. That week in September, we encountered solid sideways rain and zero visibility while we huddled under some small subalpine trees next to a tarn on a ridge overlooking the Terrarosa Glacier. Needless to say, during that week, our motivation for any glacier travel was zero.
On day 3 of that trip, we descended down to a cabin on an island in Fire Lake where we would wait for our pick up on day 5, and as we were waiting, we randomly would pick spots to explore along the shoreline and up the ridges of Fire Mountain. In the end, we never did complete any of our objectives on the Terrarosa, but it set the stage for getting to know each other and ultimately, an introduction that would lead us to multiple meetings and conversations where we would plan future expeditions. Not only did we climb mountains and the vast amount of rocky pinnacles and ridges together, but for the next two years we found ourselves traveling across this little remote pocket of British Columbia on a quest for everything, including lost gold mines, hidden treasure, missing prospectors, and crashed UFOs, which is to say the least of a place that has been the subject of numerous books, articles, and internet blogs that have captured the imaginations of many local self-proclaimed adventurers.
Overall, from the 2009 trip, the hunger for the Terrarosa and the Stave glaciers took hold of our souls and within the next year, we found ourselves together again, but this time in a basecamp on the middle of the Terrarosa Glacier where we completed several climbs up the Fire Spires. With 12 days of solid sun and under the deep blue sky, we circumnavigated the Terrarosa Glacier with ease. However, in between climbs of the Fire Spires, we frequently would stop and look down into the upper Stave and at the icy headwall of the Stave Glacier.
Our hunger was ravishing inside of us to get a taste of the dirty blue seracs we could see at the head of the Upper Stave. A massive steep ice ramp leading up onto the glacier where the jagged pinnacles

jutted out into the misty clouds rolling off the icefield took our thoughts into ones of desire and a mind-controlling thirst for another expedition. We were still in the middle of the 2010 Terrarosa trip, but the stage was set for the next expedition - an expedition that would take us from being dropped off on a spur from Fire Lake at the north end of Harrison Lake for the third time, and then being picked up by a jet boat on the Upper Pitt River.

It was the beginning of August 2011, and we were ready. The plan was put in place where Evan and I would complete the through trip to the Upper Pitt River off the Stave Glacier on Day 14, and Matthew and Kelly would leave the Stave Glacier basecamp on the morning of Day 8 in order to return the same way we all hiked in together.

Days 1-2: the approach

We started from the highest spur above Fire Lake, accessed from the West Harrison FSR, then onto Fire Creek FSR off the Lillooet FSR, (as per the 2009 and 2010 Terrarosa Glacier/Fire Spire Trips). This approach, again, would give us great access to the Terrarosa Glacier and the Fire Spire peaks which Kelly and Matthew wanted to do before we ultimately proceeded to go onto the Stave Glacier peaks. Nonetheless, it was about 3.5 hours after leaving my front door when I found myself on day 1 of a 14 day expedition where we were going to attempt to get from the North Harrison to the Upper Pitt River.

We camped on a subalpine ridge above Terrarosa Lake, across a large valley from the glacier for the first night. The second night we dropped down to Terrarosa Lake where we would leave most of our gear and proceed up the glacier to establish a high camp for two days of climbing among the Fire Spires before returning down to the lake and onto the Stave Glacier. The travel was easy through the heavy snowpack through the subalpine meadows, and navigating along the ridge to find the best route to Terrarosa Lake was straightforward considering we had the route perfectly dialed in due to two previous trips.

Evan and I admired Matthew's excitement as he caught a glimpse of the glacier along the ridge. We told each other how his reaction reminded us of ours when we first trekked along here in 2009. Kelly was super pumped as well, as he was actually going to have time to scramble up some of the Fire Spires before having to turn around. I was happy and excited that Evan and I were taking an extra couple of days on the Terrarosa so Kelly and Matthew could get a taste of the Fire Spires, and we had ourselves a few canyons and small sub-peaks to explore on the Terrarosa, left over from the previous year.

The trip to the lake on day 2 was nothing short of repeated bouts of stair climbing for 8 hours. Unlike many alpine ridges, this ridge was not a nice flat 'Coquihalla alpine meadowy ridge', but it did serve as a great warm up for us with our 34 kg packs. At the end of day 2, getting down to the lake was a relief after a long day of rather 'unappealing terrain'. Once at the lake, we did one last push up onto some bluffs above the lake to set up a camp with a view.

Days 3-4: Terrarosa Glacier

On the morning of day 3, we packed only the essentials that we needed for the next two days. We took some small rations of food, glacier gear, and just one tent and one cooker to help make everyone's packs lighter for a quicker ascent up to a camp on the Terrarosa. A few hours after leaving the lake, we found a small outcrop of rocks on the northwestern side of the glacier where we camped off the ice and snow.

Terrarossa Lake (left); approaching Spark Pk. on the Terrarossa Glacier (right). Photos: A. Palmer.

The next day, all four of us climbed Terrarosa Peak, and from there we split up as Evan and I descended down from the summit towards the southwest headwall near Glendinning Peak. Kelly and Matthew went across the glacier to do the central summit of the Flames and Ember Peak. We later saw them crossing from the Flames onto Ember as Evan and I regained the

On Spark Pk. Photo: A. Palmer.

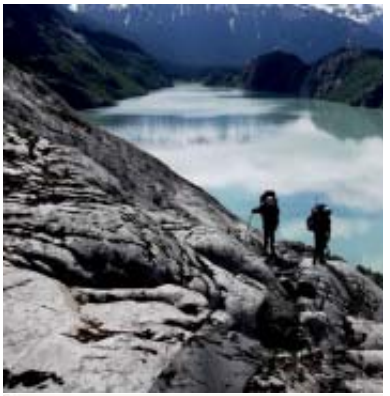
southwest headwall and went up back onto the glacier. Matthew climbed the south face of Ember, and Kelly took the standard ridge route. We sat down in the middle of the glacier and watched this show until they both eventually met up with each other on the summit. Evan and I returned to basecamp in the evening not much before Matthew and Kelly came walking in as the sun was setting.

Days 5-6: The Upper Stave

We all woke up on day 5 knowing we had a long day ahead of us. We were on the middle of the Terrarosa Glacier and were aiming for the Upper Stave by nightfall. Reaching our camp back at Terrarosa Lake was quick and painless, as sliding down the snow ramp made for a fun and effortless descent. Getting back into camp and looking at our route from up on the bluffs above the lake now shocked us back into the reality of this ambitious expedition.

Down climbing the valley between Terrarosa Lake and the Upper Stave River went smoothly as Evan and I had scoped out the route part ways the previous year. However, as we got closer to the upper Stave River, our descent slowed as we encountered greenery. The tangled mess of the thick bush and relentless cliffs blocking our route was a horror show. It would have been a cake-walk without our heavy packs; however moving through this stuff without packs was not an option. We pushed on, battling through the jungle of thorns, throwing ourselves down the cliffs, and then finally reaching a small stream which we choose to walk through up to our chest at times, as this was a relief compared to going back into the hellish tangles of foliage.

In the early evening we reached a point of land that jutted out into the middle of the large body of water which makes up the Upper Stave, and set up camp for the night. The next day we continued onto the upper lake below the headwall of the glacier and found a sandy beach where we relaxed in the sun and Evan even went for a swim! Meanwhile, Matthew headed up onto the ridge system that paralleled the



Heading into the upper Stave valley (top), then up the Stave Glacier. Photos: A. Palmer.

Stave Glacier camp. Photo: A. Palmer.

glacier and did some beautiful photography in the late afternoon sun. He returned at around 7pm, completely blasted from a huge day. This ultimately served as a great solo reccee effort for us all, in order to pre-plan an ascent route up the snout of the glacier.

Days 7-8: The Ascent

All four of us started out towards the upper middle glacier, navigating around 3 crevasse fields but also taking the time to admire the fantastic landscape of such a powerful geological area - the sound of the ice under the rocks and the amount of material around the headwall, which towered over us at times. We soon found a small outcrop of rocks and a low ledge off the side of the glacier that put Evan and I in a great location for doing Stave and Misty Peak the next day, as well as providing Kelly and Matthew a great location for starting their descent back along the ridge towards the truck way back above Fire Lake.

We said our goodbyes on the morning of day 8 and things became quiet and lonely for the two of us. We watched Kelly and Matthew slowly disappear onto the ridge above us, heading back home. That morning, we took some day packs and went for Stave and Misty Peak. We arrived on the summit of Stave Peak in a couple of hours then headed down, taking in a little bit of the Misty Icefield before climbing up the spires and pinnacles of Misty. However, the main summit of Misty was blocked by a slight problem. The steep snow ramp that leads to the standard class 3 rock ledge below the summit had melted away from the rock wall, and now a gap of 10 m was between us and the route up. All that was left was a thin narrow snow bridge over a 90 m drop along the tower of the summit. Rather than risk it collapsing as we crossed over it, we moved onto the face to the east and scrambled up some loose rock. The route came to a run out 6 m below the summit. We took one more look at the standard easy route up but thought that the risk of jumping onto the wall from the snow bridge and then negotiating a 3 m wall of snow that was jammed vertically blocking the route was not worth risking a 90 m fall down a moat. We choose option 2: a small sub-peak pinnacle that was just as impressive as the summit block. A great thing about Misty Peak is that it is composed of several different pinnacles and spires from which you can choose.

Stave Pk. Photo: A. Palmer.

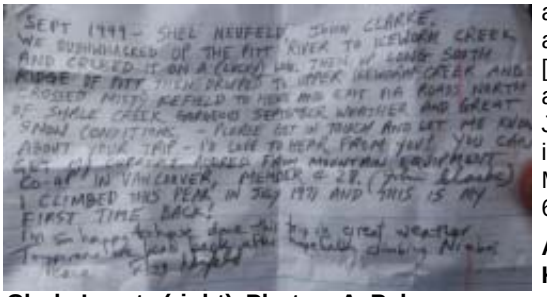
Days 9-10: Across to Betstel Pinnacle and Nebula Peak

The morning of day 9, we moved camp and headed towards Nebula Peak. After setting up camp on a beautiful pinnacle of rock, we went out and climbed Halkomelem Peak (2300 m) via its east ridge. We arrived on the summit in bright blue afternoon skies after scrambling up and down the shark teeth and jagged pinnacle that protruded out of the glacier along the way.

On the morning of day 10, we climbed Nebula Peak on hard frozen steep snow, kicking steps for a little morning cardio wakeup. From the summit, we headed to the Betstel Pinnacle and the 2100 m summit

Looking at Misty from Stave Pk. (left); Betstel Pinnacle (right). Photos: A. Palmer.

on the ridge to the south. Climbing a little below halfway up the Betstel, we wondered if anyone had successfully climbed this thing yet, as the smooth and overhanging rock on the final summit section would take an afternoon of some problem solving. We then headed back towards camp underneath our own little pinnacle and packed up our 'home' once again and headed across to Katzie Peak (2300 m). Through a bowl in front of Halkomelem in the afternoon sun, we climbed Katzie across easy snow from the north and then a short little scramble to the summit on some blocky loose rock. On top, there was a cairn and inside was a note from John Clarke who returned to the area in 1999 with Shel Neufeld on a trip for the first time since his original 1971 first ascent blitz in the area…very cool! [ed's note – see an account of John Clarke's trip in the 2000 BC Mountaineer, vol. 65, page 54].



Approach to Katzie (left); John Clarke's note (right). Photos: A. Palmer.

Reading local BC mountaineering history in front of our eyes was amazing! After resting on the summit of Katzie Peak, we down-climbed to our packs below the summit and proceeded towards Nimbus Peak to find a camp for the night.

Day 11: Nimbus Peak and the Descent to Upper Pitt

We woke up to intermittent cloud and heavy mist rolling through camp. We packed up our gear and dropped it off below the ridge on our way to the summit of Nimbus. We proceeded up the rusty red outcrops of Nimbus Peak with light day packs. It began to clear and we found ourselves on the summit in less than two hours. There was another cairn on top and we opened the film case that was stuck in it. Inside the old film case there was a note by John Clarke describing his original 1971 ascent along with his 1999 'revisit' note. We had a short break on the summit then headed down to collect the rest of our gear and make the descent off the glacier down to the Upper Pitt, to put us in striking distance to exit out onto Shale Creek.

A few hours after coming off the glacier, we found ourselves looking down on a logging road - the first one we had seen in over 12 days. We camped for the night in the middle of the old road and had a fire to celebrate, and to keep the horrendous bugs off us!

Day 12: The Upper Pitt River

We walked down the small network of logging roads which were pretty good compared to the 2010 exit onto the North Sloquet! A highway compared to that horror show the previous year. We reached the

On top of Nimbus Pk. Photo: A. Palmer.

Shale Creek main line in a couple of hours off of the old high spur and met Danny (owner of the fishing lodge) around lunchtime at his newly built house. We talked with him for a while to confront his disbelief that we had just come from the North Harrison, and told him our story. We continued on to the Pitt River hot springs where we would wait for my friend Larry and his Jet Boat to pick us up on August 16th.

Days 13-14: The Hotsprings and the waiting game…Starving…

With a night and two days to kill, we soaked in the hot springs both days until we became light-headed in the late afternoons and early evenings. We collected berries to help ward off the starvation that was setting in. We ran out of food on our last day and were getting a little hungry. A small black bear came and said hi a couple times as we hung out on the bridge, but would never stay very long to socialize. Sure enough, 11:05am on Tuesday August 16th, we heard the 200hp two stroke sport jet engine of the 'fire fish' screaming up the river to pick us up!

Participants: Evan Howard, Matthew Baldwin, Kelly LeGros, and Adam Palmer.

Mt Garibaldi (East Face via Atwell-Garibaldi Col), 5-6 May, 2012

Mary Hearnden.

I've stared at the massive expanse of this mountain from the Sea to Sky highway for years. It was time to finally attempt the summit, and hopefully see the view looking down from above.

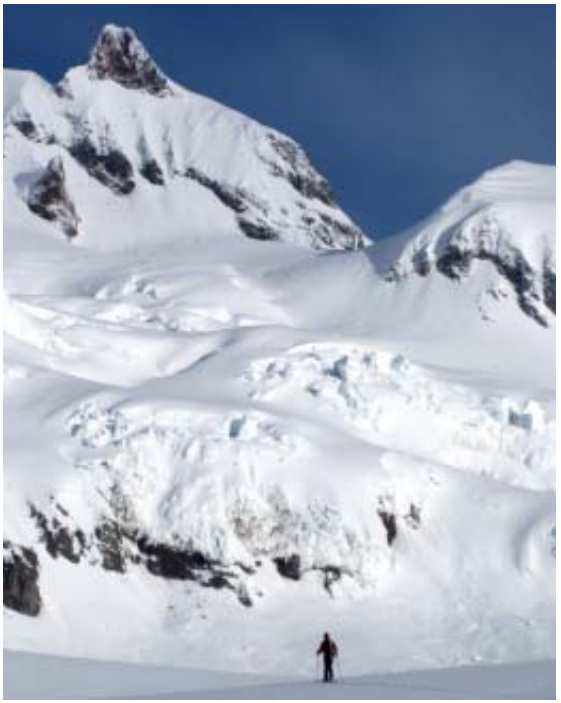
Our group met at a leisurely 8 am on Saturday morning. The enthusiasm level was a bit low due to grey skies and some rain drops, but we chose to believe in the improving forecast. The original plan was to stay at the Elfin Lakes shelter (and take a few hours in the afternoon to check out the route up over the Gargoyles for the next day). We didn't think there'd be a lot of people at the cabin at this time of year, but we were definitely wrong – there was a huge group of snowshoe hikers starting off from the parking lot, plus several other ski parties. So on to "Plan B" (good thing we all brought tents and stoves).

As we made our way onwards, with intermittent snow showers and clouds, we met a number of parties turning back from the Névé traverse route. They all reported poor and very wet snow conditions. Pushing on we made it to the Elfin Lakes shelter for a good rest, then began skiing further towards a high camp. Conditions were not favourable for the Gargoyles, so we opted to make it as far as possible along the usual Névé route. Pushing along further we made it down into Ring Creek, breathing a sigh of relief at the bottom. Lots of loose, wet snow avalanches made us pretty nervous in this section. From there we skied up to the Bishop Glacier and evening camp underneath Opal Cone. Visibility was nil, and we were quite doubtful about the next day's climbing conditions.

But the temperature miraculously dipped overnight and the sky cleared. Those who ventured outside during the night were treated to an impressive glimpse of the "supermoon". Most of us awoke to Peter calling "it's light out", although some of us thought he said "it's a white out". Morale rose quickly as we ate breakfast and quickly prepared for our summit climb. There were impressive views in all directions, but our eyes were locked on stunning Atwell Peak and the smaller cone of Mt Garibaldi. The final summit was visible in front of us, but so were many crevasses and tumbling glaciers in the foreground – the route did not look obvious.

Atwell and Garibaldi in the morning (left); Heading out (top right). Photos: M. Hearnden.

We set off at about 7:30 am. Ski crampons came in handy on the lower inclines, and good progress was made. As we climbed higher, the obvious zig zag line of travel became clear. Our group had spread out somewhat, with the faster people setting the track. They didn't hesitate long at the base of the final steep climb up to the Atwell-Garibaldi col. The temperature was quickly rising and solar warming would increase our risk of being exposed to slides. Almost three hours had passed since we left camp.



Getting closer to Garibaldi. Photos: M. Hearnden.

Getting close to the summit pyramid (top left);Atwell Pk. from Garibaldi (top right); Kicking steps up the couloir (middle); about to ski down into Ring Ck. (bottom). Photos: M. Hearnden.

At this point four people went up, and the other four decided to wait at the base of this incline (lounging in the sun).

As we topped out at the Atwell – Garibaldi col (2520 m), our final destination was in view. It was a short, leisurely ski north over to the western face of the summit cone. The final climb up the short, snow-covered couloir looked fairly steep but straightforward. Our skis came off, we fastened on boot crampons, and headed up. A short rocky section with sparse snow cover almost stopped us. But Silke, a very determined climber, chipped away at the snow and found some little ledges on which we could push our way up. Within a half hour, we were standing on top of Mt Garibaldi on a very fine day. Howe Sound was visible in the distance, and there were views in all directions.

We spent a few minutes at the top for panoramic picture taking and soaking up the scenery, then quickly reversed our steps. We put on our skis again and got in a few good turns. Not much time was wasted in getting back down to reconnect with the rest of our party, and then all of us traveled back to the tents. Since it was the hottest part of the day, we waited for a couple of hours before setting off into Ring Creek again. Michele kept us entertained reading from her UK newspaper. Topics of conversation ranged widely from alpine huts, to female vs. male group dynamics, to global travel stories.

The ski out was thankfully uneventful though long. We made it back to the cars at 8 pm, and went for a group dinner at the Shady Tree pub (where we helped Greg celebrate his birthday in style - with a complimentary shooter, and of course dessert).

Thanks to Peter (spring ski trip organizer-extraordinaire), and Silke (couloir climbing specialist) for their encouragement and individual attention! Next year, the plan will be to get the rest of the team up to the summit of Mt Garibaldi.

Participants: Peter Gumplinger (Organiser), Silke Gumplinger, John Duffy, Greg Stoltmann, Diana Diaconu, Erika Kosarko, Michele Cohen, and Mary Hearnden.

A Complete Traverse of the South Powell Divide, 4-12 September, 2010

Peter Gumplinger

The Powell Divide between Powell River drainage (Eldred River) and Jervis Inlet is the domain of longer trips for people from the Lower Mainland. It is a beautiful narrow divide with numerous tarns and incredible sweeps of granite. An area studded with alpine lakes, it has complex terrain and requires good route-finding skills. It also provides for some fantastic scrambling. The approach includes two ferry rides: Horseshoe Bay to Langdale and Earls Cove to Saltery Bay. We enjoy the patio of the Backeddy Pub in Egmont while waiting for the Earls Cove ferry. Once on the Upper Sunshine Coast we visit Powell River Outdoors on Marine Avenue in downtown Powell River and purchase an interesting recreation map. It proves to be very useful. Guides Breakwater Books nearby carries the local rock climbing guide to the extensive array of granite big walls in the Eldred Valley. These rival Yosemite and provide a virtually limitless supply of rock-climbing opportunity.

It is late afternoon when we drive the 2WD access via Goat Lake Main, Stillwater Main (closures 5am-6pm weekdays, signage is in miles) to Freda Lake Spur (end of S-Branch) where we stash our bikes. We use K200 as a shortcut to Dodd Lake. It is four wheel drivable with narrow brushed alder. Two hunters on an ATV meet us coming the other way at the only place where we can pass. We crash for the night right on a spur road above Windsor Lake, one of the lakes along the Powell Lake Canoe Circuit (Lois Lake to Powell Lake).

Day 1: Sunday. We drive the far reaches of Goat Main, past B-Branch, and branch D400 to Dianne Lake. To here it is 2WD. Subsequently, we discover numerous brand new ditches and to our surprise meet a deactivation crew. They appear happy to see us because they had their doubts visitors could come this far. Here we are, tourists from the mainland. We learn that they have instructions from the Powell River District Office to keep the road accessible to at least high-clearance 4WD-equipped motorists. We are all guessing now - was this directive because of the pre-existing hiking trail to Centre Lake? Of course, this means extra effort for the crew to smooth the road again after ripping out the culverts. None of us wants to get into a discussion as to why it is BC policy to deactivate roads by removing culverts at great expense in the first place. Instead, the crew escorts us across the last five of their tank-traps, my mini-SUV doing the test drive, while the work gang levels the worst bumps so we don't bottom out. We park at the base of D-200. As we say good-bye, the foreman requests that we do not advertise the road as drivable with anything but a 4WD truck.

We hike up D-200 and take the uphill right branch D210 after 15min. After 50min we arrive at a sharp right switchback. The road would be passable to here with high clearance 4WD and with no concern about scraping the paint. Less than 5 min further along is a huge slide, impassable to all except foot traffic. The road becomes increasingly overgrown beyond that. At a road junction we find a sign smashed on the ground. Not entirely sure which branch to take, we turn right. After an agonizing half-hour we are happy to spot the Centre Lake trailhead marker where the road is completely blocked by logging debris.

Big Crater Lake. Photo: P. Gumplinger.

The trail is relatively easy to follow (and flagged) as it gains the top of the slash, then traverses partly across the top, heading to a pretty stream and finally arrives at Little Crater Lake and a beautiful campsite. From here the trail heads away from the lake as it gains higher ground. At one point we are glad for the aid of a knotted rope up a groove in a slab. The trail continues to a flat area with confused signage. The proper route leads up from here (not down to Big Crater Lake), gains a broad crest, then descends to the outlet of Big Crater Lake and another campsite. Here the flagging and cairns end. Across the outlet, a narrow, bushy draw can be used to surmount an intervening large slab. We contour

Mucill Pk. behind Centre Lake camp (left); traversing Mucill Pk. slopes with Barkshack and Ironface pks. behind (top right); Slide Mtn. across the Eldred valley (right). Photos: P. and S. Gumplinger.

right across two branches of the creek coming down from Centre Lake to the base of a large talus slope. We climb the talus to a narrow gap where the creek drains out of Centre Lake and find a great campsite on the lake shore.

Day 2: We are grounded by rain and whiteout but go for an afternoon reconnaissance to a pass behind the lake. A satellite phone call to the weather forecast for Howe Sound promises better weather for tomorrow.

Day 3: From the campsite the correct route immediately climbs up slabs and across more slabs to heather benches before these give access to the pass beyond. From there easy traveling over large boulders leads to an indistinct ridge running NE from Pk. 1825 (Mucill Pk.). An ascending, slabby traverse regains the divide between Carey Creek and D-Branch creek. Moderate scrambling along the ridge crest and over Pk. 1825 (Wessex Pk./The Key) leads down to “First Col” above Boulder Lake. The final descent is through some krummholz between heather slopes. We are circumnavigating Carey Creek following a sinuous crest with constant views of Mt. Alfred and tantalizing glimpses of rock walls at the head of Eldred Valley. All nearby peak names follow a theme around Anglo-Saxon King - Alfred the Great.

Views of Mt. Alfred. Photos: P. Gumplinger.

After a short break we head up and west of Pk. 1765 until we find ourselves cliffed-out. We must descend to a flat area from where it is possible to reach the south side of Pk. 1765. A series of scenic, beautiful, swimming-pool-sized tarns are followed to the pass with Pk. 1625. The terrain allows for some interesting variations rather than the path of least resistance as we continue west of Pk. 1625. The stunning glacier-sculptured granite is solid and grippy. The route now leaves the spine and descends talus to “Big Pond” north of Pk. 1565 (“The Fist”). Next, we climb light gray-colored talus ramps to a level corner NW of Fist’s summit. From the corner, we manage to regain the ridge by crossing steepish heather and grass slopes. We

Crossroads Pk. Photo: P. Gumplinger.

are getting tired following the divide over Pk. 1545, then over Pk. 1585, and finally over Pk. 1625 (Crossroads Pk). Flagging and cairns reappear and become more numerous as we approach Crossroad Pk. We spot quaint Maria Lake, already in the shade as it is getting dark. After a single, long day push of 12 hours, we finally walk on the approach trail up from B-branch to the Emma Lake Cabin. Late in the day thunderstorms to the west had threatened but never materialized. We stuck to the route outlined on the recently purchased Recreation Map all day.

Emma Lake cabin. Photo: P. Gumplinger.

Day 4: A leisurely morning – sunny and warm, breakfast outside. I peruse all the log-books. The charming BCFS hut sits on the shores of intriguing Emma Lake and makes for a lovely spot. The lake's aquamarine waters glisten in the sunshine. It sure is a beautiful subalpine setting. The cabin is well maintained, comfortable, and well stocked. It is also float plane accessible. At 11:15am we finally start hiking. We cross a very spiffy metal bridge spanning the creek spilling out from Emma Lake. The route to "Puzzles and Pickles" is well marked with cairns into Emerald Valley alongside Snowy Peak. Then the topographic map becomes completely useless. Several new lakes have appeared since its printing and others have substantially increased in size. The once trusted Rec-Map is also not much help today. Crossing and re-crossing the creek draining Emerald Valley, we ramble around to a splendid subalpine ridge of heather, blueberry bushes, small trees and lots of bear poop. When the lake side of this ridge becomes nasty, we find its far side easy

Setting sun behind the Rainbow Peaks and the Beartooth Range. Photo: P. Gumplinger.

Beartooth Range from the Emma Lake outlet stream (left); Peter on the summit of Mt. Danelaw with "Princess" beyond and pointy Mt. Diadem in the distance (right). Photo: S. Gumplinger.

Cloud and sun over the Beartooth Range and Barbara Lake. Photo: P. Gumplinger.

going all the way to the elevation of the outlet of Martha Lake. We stop for a deserved break, then commence the long climb up Mt. Danelaw, also known as the "Prince", 500m elevation gain and, at 1932 m, the highest point of our traverse. At first we follow goat trails at or near the crest of the lake-bounding semi-forested ridge. Later, broken slabs and snowfields give access to a gentle heather ridge to the top. The magnificent view from the summit includes distant Diadem Mtn and the glorious, fiord-like scenery of Goat Lake far below. There are huge granite slabs as far as the eye can see and granite knolls in every direction.

We drop down through krummholz and heather draws to the pass with "Princess". From here the route is at first not obvious. A cliff bars further progress around Princess. The only option is to descend over steepish, slanted slopes to 1580 m. Here we get access to the far side of Princess and more sloping terrain to Lorac Lake and a beautiful campsite just below its outlet. We enjoy head-on views of the rugged peaks across the Eldred Valley, most notably the silhouette of Beartooth Mtn.

Day 5: Easy rambling across NE slopes leads to the granite ridge down from the Triple Peaks Range (Overlook Mtn.). This ridge has a bulge, the 'JC Key'. Routes drop from below the bulge around the south side or, with greater difficulty, climb it directly. This requires an ascent of a vegetated crack at the top that's about as difficult as can be climbed with a full multi-day pack (class 3-4). I struggle and don't make it look easy. From the top of the bulge open scrambling leads most of the way to the top of "Middle Peak" until a traverse into the pass to the north is possible. This pass is the terminus of the "Trail to Triple Peaks Ridge" up from Goat 2 Branch FSR. From here an easy traverse around the west of Overlook-2 is possible. Fine walking on dramatic granite domes leads to the broad pass with Overlook-1. This peak is circumvented on loose scree to the north. Behind Overlook-1 an unexpected, deep notch in the ridge abruptly stops

Lorac Lake camp (left); heading to "JC Key" with Middle Pk. beyond (middle); rambling to Overlook Mtn. with "The Table" to the right of Peter. Photos: P. and S. Gumplinger.

all progress. Beyond is an impossible knife edge corner. We find no possible way to climb this, all the while getting into a whiteout situation. The south/left side appears very forbidding. We have only one option and descend right, down loose and steep talus to more talus below “The Table”. The going is tedious until we regain the divide on the far side of “The Table” and break for camp on Skwim Ridge.

Day 6: After heavy rain overnight, we start hiking in a whiteout with hopes of finding the low pass where the new power line crosses between Goat 2 and Freda valleys. Cairns are found and we follow them down into denser vegetation. Numerous ribbons, sometimes confusing, lead us on through very wet blueberry patches and, at times, impossible steep and slippery forest slopes. These ultimately lead into the jumble of the newly cut trees below the Plutonic Power Line (from Toba Inlet). A hideous descent through this mess finally brings us to the far landing of the high road. Soaking wet we stop for a short break. Rain starts in earnest as we hike the road and approach an ATV Club’s cabin above an unnamed lake. Pounded by unrelenting, heavy rain drops, we welcome the open shelter and settle in for a full afternoon and evening of stoking the wood stove and thoroughly drying out.

Day 7: On our final day, we descend the road to where we had stashed the bikes under a bridge and commence the 40km bike shuttle back to the car. It is raining lightly off and on all through the day but we keep reasonably dry. The traverse was done in 4.5 days of hiking with 8 days of food provisions. For our reward, we treat ourselves to a seafood dinner at the popular Laughing Oysters Restaurant in Okeover Arm and a night at the Old Courthouse Inn, a funky unique heritage hotel in Powell River.

Participants: Silke and Peter Gumplinger

Tetrahedron Peak, 14-15 August, 2010

Ye Chu

No dinner, no ferry and against our better judgment, some of us decided to sleep on the active Rainy Forest Service Road. It was 12:30 am and there was a real threat of being killed by a logging trunk. However, we were too dead tired to hike back into the dark dense forest to look for a better spot to pitch our tents.

Tetrahedron Peak was posted by our trip organizer, Andrzej, as a day trip; however, he encouraged us to bring our tents and sleeping bags just in case we missed the 9:40 p.m. ferry home. As planned, seven participants met early Saturday morning and repacked our gear into two cars. We caught the 7:10 ferry to Langdale. I hadn’t been on a ferry in ages and was experiencing every minute like it was my first time. The smell of the salt air, the feel of the cool ocean breeze and seeing the layers of mountain grays was incredibly beautiful and unforgettable. I could sense that that day’s adventure would be rich and memorable.

Disembarking the ferry, we regrouped at the turn off to Port Mellon. Another hiker, Peter Feichner, agreed to meet with us and give us an overview of the Tetrahedron route - showing us his map, photos and giving us a written/visual description. Our organizer, Andrzej, had never been here before and, unfortunately, Peter could not accompany us.

On the Rainy Forest Service Road, one of the drivers sliced a tire. After we put on the spare tire, the driver decided to call it a day and another participant joined him. Then we were five, standing alongside a two door Suzuki Sidekick. Nikolai, Bev and I started walking up the long logging road as Andrzej, Bernie and our gear drove up the road. Bernie said he would return to pick us up after dropping off our gear and trip organizer.

As promised, Bernie picked us up and we regrouped with Andrzej at the trail head at about 10. The day had not started well and we were already an hour behind schedule. After ten minutes on the trail, we crossed a primitive suspension bridge. The bridge was a simple but effective design with three cables

tied in tension to trees and ropes holding the three cables together. Crossing the bridge was amusing even though I cut my hand on the fraying cable. At the end of the overgrown logging road, we lost sight of the flagging tape. Peter's instructions said that we should be at the intersection of two creeks. We heard a waterfall and made a direct bushy bee-line down to it. Andrzej marked the spot with flagging tape as we anticipated having difficulty finding this turning point in the dark that night.

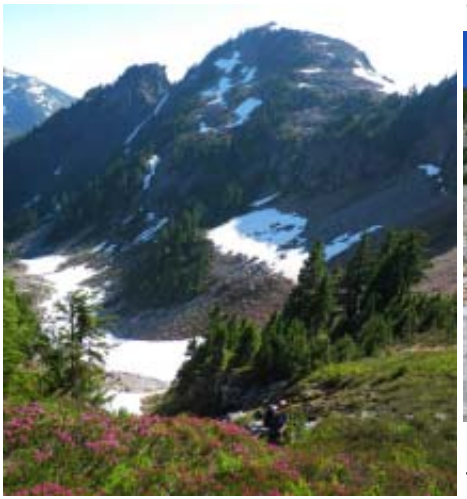
The day was beginning to heat up rapidly and we ate our lunch next to the cool creek. We reviewed Peter's route description. It said to follow the dry creek bed to the right. Going up the river bed was a breeze compared to the dense bushes. However, according to the map, we had to get onto the ridge between the two creeks. Andrzej lead us up a ridiculously steep bushy slope and at the top, we found flagging tape! It seemed too lucky and outrageously good at this point. There was noticeable relief on our hot and sweaty faces. Andrzej added flagging tape to the ridge trail, a.k.a. "hog's back" as it was very overgrown and we thought hopeless to find the route back in the dark.

Flagging the waterfall (top); heading up the dry creek (bottom). Photos: Y. Chu.

Did I say it was hot? It was hot - a kind of "Saudi Arabian style" hot. We took a necessary break in the forest shade to cool down. Some people had run out of water and were feeling very lethargic. We needed water desperately. To our "drop jaw" surprise, we were a mere 100 m from the snowy alpine meadows and more water! Bernie drank a full litre of filtered creek water and immediately felt much better. I poured water down my back and stuffed snow inside my hat and shirt and others followed. We felt revived. My thermometer said 30^{0}C.

As per Peter's photo, we stayed right of the red bluffs to attain the pass. From the pass, we had dense bush on the right and exposed rock on the left. I had had enough of bushes and two of us decided to scramble up the rocks, while the others stayed in the security of the bush.

At 5, we regrouped. We looked up and thought the true summit must be behind the flat ridge in front of us another hour away. Everyone was dog-tired and over heated. Bev and Bernie decided to call it a day and headed back down. Nikolai wanted to quit too. I suggested/begged that we just make it to the ridge... "just five more minutes pleeeeease." We were surprised to discover that the ridge was really the summit. Oh what bitter sweet joy! Bev and Bernie could have summitted too. If only we had looked at our GPS we would have known the summit was just in front of us.



Panther Pk. from the pass (left); the rock or the bush on the ridge? (above). Photos: Y. Chu.

Andrzej and Ye on the summit (top); Nikolai descending through the rock face (bottom). Photos: Y. Chu.

At 6, we started to head back down. We took water breaks here and there. However, most of us didn't want to rest as we were afraid we would not be able to get up again. We were not confident that we could make it back to the cars in the dark and wondered about sleeping out in the cougar-infested forest. The sun set at 8:30 and we shared horror stories of hikers getting attacked by cougars. Nervously, we decided to keep on walking, even if it took us all night to get back to the car. Thank goodness for our GPS and an extra set of batteries. I kept reassuring the group we were on the right route – stating our elevation and the number of kilometres to the car. On average, 3.5 km took about two hours as it was very difficult to bushwhack in the dark. We were a worn-out but impressive group, calling out "ribbon", anytime someone saw flagging tape. We truly needed all five pairs of eyes to keep us on track.

The most annoying aspect of hiking in the dark was the insects that flew in your eyes, nose, ears and mouth. The bugs were attracted to our headlamps like bears to honey - it was truly maddening. I ended up putting on my MEC bug jacket as I couldn't take it anymore. At about 11:50 p.m., we finally reached the primitive suspension bridge that we crossed earlier in the day. Walking on a single cable in the dark was quite the circus act. Andrzej said he was now going to specialize in organizing trips in the dark.

Did I say we were exhausted? We were really beyond that. We could have all fallen to the ground into a deep slumber next to the car, except for our trip organizer, Andrzej, who suddenly had the energy of a teenager and carried all his camping gear back into the forest and camped next to the creek.

Bright and early, we started packing up to catch the 7 am ferry. The big question of the day was how to fit five people and overnight gear in a small two door Suzuki Sidekick? Bernie decided to strap as many backpacks as possible on the roof top. Like a Chinese circus act, we all "squeezed" tightly into the Sidekick with luggage on our laps and headed off to the ferry, praying that we didn't get a flat tire or lose any luggage on the way out.

Unfortunately, Nikolai and Bev did lose their digital cameras in the bush (Nikolai's was a new moderately expensive camera) and for some crazy unfathomable reason, they said they had no desire to retrace their steps back to Tetrahedron Peak to retrieve them any time soon. At the earliest, Andrzej said he would come back in 20 years. Finally on the ferry, we had another mishap - Andrzej dropped his cell phone in the ferry toilet and his digital camera narrowly missed the water. My photos may be the only proof we were actually there.

All things considered, this was a very successful 24-hour trip because the people were terrific. We stuck together, searched for flagging tapes and kept up the positive energy even when we were fatigued, injured (Bev's shin and Andrzej's bottom), and dehydrated.

Thanks, Andrzej, for a well organized and epic trip!!!

Participants: Andrzej Jarzabek (organizer), Bernie Brandt, Beverly McLead, Nicolai Sokolov and Ye Chu.

Mount Shuksan via White Salmon glacier, 12-13 May, 2012

Alexis Guigue

Due to uncooperative weather, the trip was postponed to the week-end of 12th-13th May, in the hope for better conditions. And they looked quite good! So, we all gathered at our regular meeting place at 6.30 am. For some of us, the adventure started very early. Tom did not bring a tent, and no room was available for him in the other tents. So he decided to go for the comfort of a snow cave. After all, for ski mountaineering, the bare minimum is only skis/boots/poles, isn't it?

It took us a while to get to the White Salmon lodge access road. We arrived there at around 10 am. A short walk on the road led us to the lodge where we could put our skis on. It was quite nice that from this point on. We could see our objective of the week-end - Mount Shuksan. What a dramatic mountain!

From the lodge, we skinned up 15 minutes on the leftmost access road to chair 8. Then, just below the chair 8, we dropped into the forest to get to the bottom of the White Salmon Glacier. Instead of dropping straight down to White Salmon Creek, we decided to stay high. This last option seemed to be more direct, but involved crossing three small avalanche gullies that already ran off. Once at the edge of the forest, it remained to cross the basin below White Salmon Glacier - a very bumpy experience.

Once on the other side of the basin, the route up the White Salmon Glacier was quite straightforward. The big decision consisted of choosing between the routes on the left (open) or the right (forested) of the treed cliff below the North Face of Mount Shuksan.

Considering the warm temperatures, we opted for the second option. At first, it was a little bit steep, but it eased up slightly. Ski crampons were quite handy. Past the forest was a succession of obvious ramps leading directly to the top of the White Salmon Glacier, which was where we had decided we would camp. It was not as steep as it looked from a distance, but again ski crampons, at least for the people at the front, were handy, We were quite surprised how early we arrived at our campsite, just below Winnie's Slide. It was a great campsite with stunning panoramic views. We had time to relax, set up our tents slowly, and make a nice dinner area, etc. We even took time to go kick steps up Winnie's Slide and the Upper Curtis Glacier for the next day.

The night was windy but not very cold. We left camp around 7 am. The snow was quite firm. Up Winnie's Slide, across the Upper Curtis Glacier, and then we were at the bottom of the Hell's Highway. More steps to kick and suddenly, on our left, the summit pyramid of Mount Shuksan appeared. An easy cruise on the Sulfide Glacier quickly got us to the bottom of the pyramid where we met a group of hikers descending. Free steps. Sweet! Snow conditions in the gully leading to the summit looked marginal for skiing, so only two of us, Tom and I

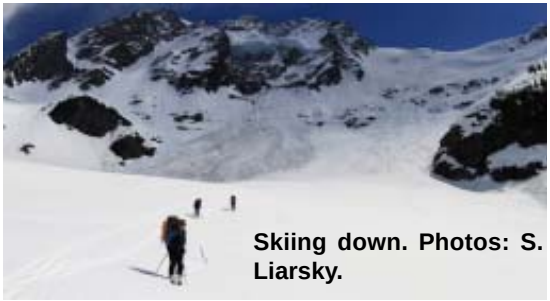
Two views of camp (left); sunset from camp (right). Photos: S. Liarsky.

Heading up, with two views of the party on the summit, bottom left, with a 'fisheye' lens. Photos: S. Liarsky.

decided to take our skis up in the hope that the skiing gods would magically change the snow conditions. The gully had a 40-45 degree slope with minimal exposure and was 200 to 300 m long. Thanks to the steps made by the previous party, it did not take us long to get to the summit.

No rush. The more we could wait, the better would be the skiing down. So we took our time and finally decided to go down. Unfortunately, the skiing gods were not with us. I still decided to give it a shot, which earned me the privilege to write this report. The skiing was OK.

We descended back to the ski depot at the bottom of the pyramid. There, we took our time again. All this waiting made for a GREAT ski back to the campsite - perfect corn snow



Skiing down. Photos: S. Liarsky.

and very nice! It was hard to leave our paradise-like campground, but once Peter told us beer was waiting for us at the cars, motivation came back. Skiing the upper part of the White Salmon Glacier was still quite decent and we quickly got to the top of the treed cliff.

There, we decided this time to go east of the treed cliff. It was quite warm now and we had a couple of wet slides. We did not waste too much time in the basin below the glacier and after a short skinning up in the forest, we got back to the lodge and then the car where the promised beer was waiting for us.

It was quite something to see two cyclists going up the Mount Baker road while we were changing from our ski clothes and arranging our ski gear. This week-end in two words: **SICK LIFE!!!** (but we still miss the summit kiss from the organizer.

Participants: Silvia Bakovic, Magnus Byne, Silke Gumplinger, Mary Hearnden, Stas Liarsky, Valery Milner, Tom Price, Peter Gumplinger (organizer) and Alexis Guigue.

Mount Rainier Circuit – the Wonderland Trail, 9-22 September, 2010

Brian Wood

While I was living in Seattle in the 1960's, I first heard about the Wonderland Trail (WT) which circumnavigates Mt Rainier, Seattle's signature mountain. I tentatively put it on my "to-do" list, but as usual other aspects of life intervened, time marched on and the to-do list was ignored. Suddenly I realised I was old enough (or just about young enough!) to do it, and by then my to-do list had become my "bucket list".

The US National Parks Service (NPS) website, www.nps/mora, is very comprehensive and outlines the bureaucratic hoops that have to be negotiated. I reserved Wilderness Camping Permits for a party of five which is the maximum number permitted to camp in some so-called "cross-country (XC) zones". The mountain is divided into many XC zones where limited numbers of campers are permitted to set up their tents more than a km from the WT and also out of sight of the WT. These zones are undeveloped and thus are more like wilderness camping. The alternative approach is to camp in some of the 18 "designated" or trail-side campsites on the WT itself, but these campsites also have limited numbers of tent sites and most of these are fully reserved shortly after campsite reservations start being accepted. While a small number of designated campsites are available on a "first come first served" basis, this is risky as one may have to wait a long time for suitable site vacancies, which is another reason for camping in the XC zones which are more flexible and less popular. The NPS website states that hikers doing the complete WT must use designated campsites only, and use of XC zones is not permitted. However, this rule did not stop us from using a mixture of both types of campsites due to our specific circumstances, a friendly and helpful ranger, and bad weather which caused many cancellations of previously reserved designated sites.

Mt. Rainier from near Aurora Lake. Photo: B. Wood.

The WT is maintained to the usual high standard of NPS trails, and is a roughly circular loop trail of about 150 km long with a total elevation loss and gain of about 6700 m. We were hoping to make this an enjoyable trip (as opposed to a record-breaking race) so we planned to hike about 15 km per day. We estimated it should take us about 9-10 days. Allowing for one rest day and one reserve or bad weather day we decided to take supplies for 12 days. We also wanted to visit the high elevation Visitor Centre and climbing headquarters at Paradise (1646 m. The WT avoids this very popular and developed area as camping is not permitted there, so we planned to visit Paradise on a rest day by camping close by at Cougar Rock Campground (CG), a road accessible campground at about 975 m, which is also located close to the Longmire Ranger Station. The rest day trip to Paradise was meant to be an easy hitch-hike there and back as we believed hitch-hiking to be still possible in the USA, even after 9-11. But we were to learn hitch-hiking is not technically allowed in Rainier NP.

Due to the trail length and elevation changes, as well as two road accessible re-supply caches, it is worthwhile carrying relatively light back packs, but as we did not wish to shed creature comforts or risk our safety, our loads were about 22 kg each at the start. To start relatively high on the circuit, we planned to park the truck and to start hiking at Mowich Lake CG at about 1524 m, which is at the NE corner or at about 10 o'clock of the rough circle. We planned our first re-supply to be at the White River Ranger station at about 1280 m, at about 3 o'clock, and our second would be at the Longmire Ranger Station (853 m) at about 7 o'clock. The Mt. Rainier National Geographic/Trails Illustrated Map provides a wealth of information for planning, but due to the excellent trail and signage, the map might not be needed if one is travelling really light. The rangers supplied us with photocopy map sheets showing XC zone boundaries.

Months before the planned start date, which was to be after Labour Day to avoid the crowds, I listed the trip on the BCMC trip schedule and also in the Federation of Mountain Clubs Newsletter "Cloudburst". There was considerable initial interest in the trip, but this waned as the departure date approached and the weather forecast before the departure was discouraging. Ultimately there were just two of us - my brother Peter and me - so planning was simplified. About noon on Wednesday, 8 September, we drove south from Vancouver. We entered the park at the SW corner at the Nisqually Entrance late the same day and camped at Cougar Rock CG in the gathering dusk. We were surprised to find one of the toilets there was a complex "Bianics" toilet, which is a self-contained bio-toilet which uses cedar wood chips and flushes re-circulated water. It was the only toilet of this type in USA, costs $70,000, but was donated by the company based in Osaka, Japan.

The next day we picked up our wilderness permit at the Longmire Ranger station, left our second food/fuel cache there, and drove east a short distance to see the "Grove of the Patriarchs", a stand of 900-year old western redcedars. Then in heavy rain and low cloud we drove anti-clockwise around the park to the White River campground where we left our first food/fuel cache. Driving north we left the park and drove west then south and re-entered the park at the Mowich Lake Entrance and drove the good gravel road to Mowich Lake CG, arriving there at dusk in low cloud and heavy rain. We joined a group of young hikers sheltering in the toilet porch and cooked our evening meal with them while listening to their sad tales of endless rain, sodden gear and lowering morale. We pitched the tent and went to bed listening to the steady rain, hoping it would not rain on every day of our trip.

Mt. Rainier from the Southern Spray Park XC Zone campsite.

The dirty snout of the Carbon Glacier. Photos: B. Wood.

It was a misty daybreak, but at least it was not raining when we got up at first light. We said a hurried goodbye to the group of young hikers who, after too many wet days and nights, decided to abort their trip and accept a ride with a friendly ranger to the end of their trip. After a quick breakfast and final gear pack, at about 10.30 am we set off in high spirits. We did not follow the "down then up" traditional WT route, but instead we took the popular Spray Park Trail, which is a 12 km detour for a higher and more scenic route. We were travelling clockwise around the circuit and after passing through some old-growth forest we started climbing and were soon in the subalpine, still hoping the weather would eventually clear so we could see something. During a chilly lunch in lightening low cloud we met a wet but cheery party coming down towards us who reported that they had seen very little on the trail. After climbing a bit more, we warmed up and decided to camp while we near the high point, to give the weather a chance to improve on the next day. We left the official trail and wandered south into the clouds into the Southern Spray Park XC Zone until we were well out of sight of the trail and over a km away. It was a good wilderness campsite and by late afternoon the weather slowly improved until we had a clear and cold night at over 1800 m.

This campsite turned out to be a good choice because the next day we awoke in a frosty tent and had good views of Mt Rainier with a dusting of fresh snow. We moved slowly to give things a chance to warm and were off by 10.30 am, to join the official trail and descend to the junction with the regular WT at about 975 m. The WT then took us across the Carbon River which flowed out of the Carbon Glacier which had a huge rocky and dirty snout surface at this elevation. After lunch in bright sunshine by the river we started the long steady climb towards our next campsite in Moraine Park XC Zone. We were soon out of the trees and marvelling at the wide valley when we noticed a young woman running alone towards us, probably at about 5 pm. She was dressed very lightly as she might for a routine jog through a typical urban park, but this trail was over 1500 m in elevation and kilometres from easy access to a road. She was carrying only a small fanny pack and stopped long enough to tell us she was running only a “short” (?) loop trail. We wished her good luck and hoped everything worked out for her.

We were getting fairly tired by now and we kept on looking for an easy access to our XC campsite but all we could see was a long steep rough hillside to climb over, so we kept on trail-walking hoping that the off-trail terrain ahead would be more appealing to our tired bodies. Eventually, a creek crossed the trail so we walked downstream a little until we found some reasonably flat ground for the tent. We quickly lit the stove to heat water as we pitched the tent and were soon about to enjoy our soup, when, out of the gathering dusk, a shirt-sleeved and shorts-clad uniformed park ranger appeared, asking to see our wilderness permit. His ranger cabin was down the creek bed, tucked in the trees, and he informed us, in a very friendly but firm manner, that we could not camp where we were and that we had already passed where we should have camped a few km back. We were not surprised and we told him that we did not relish the prospect of the long steep climb to where we thought our designated XC campsite was. So he very nicely suggested another campsite upstream and on the other side of the WT in the Mystic Lake XC Zone towards Mt. Rainier itself. This site was probably about a km or so from where we were, but at least it was in our direction of travel. He agreed we could finish our soup, but we should get a move on as it was getting dark. So, after finishing the soup we wearily packed up and wandered, a little refreshed, into the gloom, finally traversing some steep bushy side hills - not my favourite terrain at this stage of the day. Thank goodness I had hiking poles as I could not see where I was putting my feet.

We found a place that looked reasonable with our headlights, and started to set up the tent and get the stove going again. Before the water had boiled, out of the almost total blackness and mist the ranger appeared again! Just checking he said - wow, a keen fellow! He indicated, again very nicely but firmly, that we had pitched our tent on a dry area of heathers and requested that we move the tent to a damper area of sedges and grass because it would be more tolerant to camping. After doing this under his supervision, he saw that we were now totally rules-compliant. Before he left us we agreed to meet him the next day to discuss our remaining route for which he had a few suggestions for improvement of our campsites. He then disappeared into the darkness and we were left to contemplate the incredible management system of the US NPS. We were quite sure that this sort of thing would probably never happen in a Canadian park, certainly not in a BC Provincial park where rangers are almost extinct, or at least much rarer than some of our endangered species.

Day 3 dawned magnificently and we saw we were in a beautiful subalpine setting, with the surrounding valleys beneath us and Mt. Rainier totally clear and the summit apparently close by, but we knew it would be a long climb to get there. We had a couple of hours before our rendezvous with the ranger at Mystic Lake, so after breakfast we left our gear and wandered up the slope well above the tent to where we had even better views. We were then in a whitebark pine area, which was very attractive in the early morning low angle light, with the mountain dominating the near horizon and our tent near the edge of the green brush area. After an hour or so we descended to our tent, packed up and traversed directly cross country through low bush to a trail around Mystic Lake where the ranger met us at 10 am sharp. He reviewed our list of reserved X-C sites and made three suggested changes with which we were not going to argue as he knew more than we did and he (and we?) really wanted to avoid more situations like the previous night. He told us there had been many cancellations of the WT designated campsites

due to the bad weather, and that several of these campsites were now available to us. So, after listening to our wishes, he “cherry-picked” three new designated sites for us, radioed them through to the main ranger station at Longmire to check availability, and then confirmed our new site reservations. We were impressed how flexible the NPS system seemed to be, and this was due in part to the impressive system of radio repeaters which assured good radio reception on many parts of the WT. I am sure the ranger felt he was probably saving himself and other rangers from having to rescue these two dozy bumbling Canadians of indeterminate age who should not have been let loose in the park! We said our goodbyes and were again trekking on the WT, passing the impressive snout of the Winthrop Glacier in time for lunch there, and being able to bask in warm sunshine. After lunch we started the climb up to the highest point on the WT - Skyscraper Pass just below 2130 m. It was near this pass that we had originally reserved another XC site for that night but had just changed it to Sunrise Camp as it was now available to us due to the cancellations and reserving thanks to “our” friendly ranger.

The wind was increasing and the visibility was decreasing as we approached the top of the pass, and I must admit it looked very bleak and inhospitable that afternoon. We surveyed the area briefly to look for a reasonably sheltered campsite and were quite glad we had our reservation at the lower Sunrise Camp (1903 m). We wandered slowly around this high point in mixed visibility then set off to complete the last few km to our campsite at Sunrise Camp with tent sites sheltered by groups of trees. This was our first designated (trail-side) camp. It was basic, clean and legal so we were not going to be moved on again!

Monday 13th dawned clear and cold and with great views stretching for kilometres in many directions. A steady southerly descent with broad beds of wild flowers lining the trail led us to the White River roadside campground where we found the ranger station among lots of camping vehicles, with crowds of car campers enjoying the sun. We picked up our food bucket from the cache box behind the unmanned ranger station, and were surprised to see some buckets offering free food for hikers! We replenished our food and fuel supplies from our bucket while having lunch, then left our empty bucket in the box along with our excess fuel. At certain times of the season I expect an ill-prepared scrounger could legitimately collect several days of free supplies from these boxes and have some great hikes with no planning for supplies. The WT followed the Fryingpan Creek drainage, and in late afternoon we arrived at the Summerland campsite (1811 m) which I had been told was the most popular WT campsite. We were lucky that so many campers had recently cancelled as we now had a reserved tent site, and we noted that all the tent sites were eventually occupied. This was indeed a marvellous campsite with small stands of trees for shelter and spectacular views in many directions.

Peter on the trail near Sunrise campsite. Photo: B. Wood.

Day 5 started quite warm with beautiful clear skies, and by 9.30 am we were winding our way upwards past numerous snow patches and many hoary marmots whistling their warnings. We even saw some goats high on a ridge. There were several other parties on the trail which passed through the Panhandle Gap at about 2040 m. There we dumped our packs and wandered along spectacular ridges with great views, then had lunch in the sun. The next few km of the WT traversed high ridges through the very scenic subalpine Ohanapecosh Park. We appreciated our luck that the weather was in our favour in a section which probably is one of the best of the WT but is also often travelled in a whiteout. As we headed south there were magnificent views of Mts. Adam and Hood, while Mt. Rainier rose impressively close to the west. This ridge was

Mt. Rainier from the Sunrise campsite. Photo: P. Wood.

An obvious ill-prepared scrounger at the White River Ranger Cabin food cache. Photo: P. Wood.

followed by a steady descent to the lush low vegetation of Indian Bar at 1811 m, where people warned us of a black bear wandering near the ranger cabin. We did see the bear in the distance, but were not worried about it. A crew was doing heavy trail work near the cabin, and while we were chatting with them a helicopter arrived with more supplies for building an impressive new set of steps up the steep trail from the valley bottom. With additional advice from the ranger for locating our Cowlitz Park XC camp site, we climbed out of the valley and headed west off the WT for a km or so to a wide open shoulder covered with small pumice granules and beds of heather and grass. This was yet another superb XC zone site and well worth the extra off-trail hike for the impressive views and feeling of space, and hopefully a windless night as it was quite exposed.

Day 6 started warm and clear and we were soon traversing the high ridge of the Cowlitz Divide, the trail being lined with flowers and having steep valleys on either side with great views. We left the divide and descended to Nickel Creek through dark old growth forests where the crews had done a magnificent job of cutting through huge fallen trees that would have otherwise made this descent really tiring for us older folk. It started to rain lightly as we approached Box Canyon Overlook where we crossed the tourist road circling Mt Rainer. With groups of motorists we explored the black-topped trails surrounding the impressively steep walls of the very narrow canyon of the Cowlitz River, had some lunch in light rain, then headed on down the WT to Maple Creek (858 m), the lowest designated campsite on our route. The rain seemed to start in earnest when we arrived there at 5 pm, so it was good that we were securely sheltered in our MEC Katabatic tent.

Peter approaching Panhandle Gap. Photo: B. Wood.

Cowlitz Park XC Zone campsite. Photo: P. Wood.

On Thursday we started out in light rain after a long wet night, and climbed steadily alongside Stevens Canyon, occasionally crossing the main road, until we arrived at Reflection Lakes where motorists expect to get a reflected view of Mt. Rainier, except that day there were only reflections of low cloud. After lunch in the rain at Narada Falls, the WT took us west along the Nisqually River following lengths of old wooden stave pipes to a bridge which took us back to Cougar Rock car campsite where we had stayed just over a week earlier. At 2.30 pm we pitched our soggy tent, then warmed up on a short walk to the ranger station at Longmire where we picked up our food/fuel cache and took it back to our campsite. We planned to stay at Cougar Rock for three nights as a respite from back packing and to have a chance to explore Paradise and the historic tourist area around Longmire.

Friday dawned with low cloud but no rain, and after packing one backpack very lightly and a ten minute wait we were hitch-hiking with tourists up to the new Visitor Centre at Paradise. I call it “new” as it has

replaced the older visitor centre which was there when I first climbed the peak with the Boeing Alpine Club in 1966. Hoping the weather would improve, we toured the centre's various exhibits, then took a ranger's interpretive walk (yes, ranger's walks still exist in the USA!) on some of the kilometres of blacktopped trails. By 4 pm it was obvious we would not be getting a view of the summit from Paradise, so we took a last look in the bookshop and started trying to hitch-hike back to camp at about 5.0 pm. The light was getting poorer, we were getting wetter and colder, and no-one was stopping for us, so things looked bleak. Eventually, a ranger stopped her truck, took us over to the now-closed Visitor Centre where she gave us hot chocolate and phoned for the "enforcement branch" of the NPS. We were driven back down to our campsite by another very friendly ranger in the *wire-caged* rear half of his SUV which had at least two long guns on display in front, and he probably had a side arm too. As we said good-bye he quietly informed us that hitch-hiking was not permitted in the park, but he was not going to give us a citation this time, possibly because we were suitably penitent and contrite. It was a cold wet evening so we thankfully cooked in the large vestibule of the tent.

Mt. Rainier from the Cowlitz Divide. Photo: B. Wood.

After heavy rain all night, Day 9 started off clear, so we walked down to Longmire to check out the museum, the bookshop, the old tourist hotel and "Trail of the Shadows" which linked up some of the old hot springs which had walls built around them and had been exploited as health cures by the early tourist industry run by Longmire. After a "real" coffee at the hotel, at 4 pm we headed back to camp in the rain for dinner and an early night before starting our last portion of the WT.

Sunday started off dry, but once we started walking at 10 am it turned into steady rain which lasted all day. Perhaps this rain was because we were now on the coastal side of the mountain. We climbed steadily all the morning and met several groups of young people descending. While chatting to them we noticed that all their overnight backpacks were much smaller than ours and we discovered how out-of-date our gear was, which would account for its extra bulk and weight. We had a revelation that young folk's gear is much lighter than old folk's gear (ours at least), probably because young folks spend more money on gear than old folks who feel they must get the maximum use out of their old gear before replacing it with lighter newer gear. While contemplating this revelation we passed a couple of campsites, one with the unlikely name of "Devil's Dream", and finally arrived at the unattended ranger's cabin at Indian Henry's Hunting Ground. This is a scenic area but we could see little as we left the WT at about 4 pm and took a muddy minor trail to Mirror Lake in the Pyramid Peak XC Zone. This evening was another case of trying to keep dry by cooking in the tent and going to bed early.

After it rained all night, Day 11 continued in the same pattern. This was a shame as I knew we would be traversing great scenery. We cooked breakfast in the tent and moved slowly, hoping the weather would improve, but no such luck. We descended the switchbacks to Tahoma Creek which we crossed, then traversed over to the South Puyallup drainage where we descended to the South Puyallup River camp ground for lunch. It cleared for a while, permitting brief views of the Tahoma Glacier, then we crossed the river and started to climb the many switchbacks up to St Andrews Park, where we saw a mother black bear and two cubs which seemed unconcerned by us as we passed about 30 m away. We carried on, getting more tired and wet, until we arrived at our trailside camp at Klapatche Park at about 3 pm. We pitched the tent and crawled thankfully inside to change into dry clothes and get the stove going for hot drinks and snacks, followed by another early night surrounded by very wet clothes.

Day 12 dawned cold and clear with a bit of frost, but to delay putting on our wet clothes we stayed in the tent as long as possible, cooking breakfast there and giving the day time to get warmer. Needless to say, putting on our wet clothes and boots was no fun and as we had a long way to descend to the North Puyallup River we did not get very warm. However, the lack of creature comforts was easily compensated

Tokaloo Spire and Puyallup Glacier from near Klapatche Park campsite. Photo: B. Wood.

by magnificent views of Mt. Rainier and the Puyallup Glacier. We had lunch by the river and warmed up in sunshine, then crossed the river and steadily ascended the mountain's flank, before descending a short section into the pleasantly wooded area of the Golden Lakes trail side camp. At the rangers cabin we again met "our" friendly ranger who was working there to install solar panels for charging radio batteries. On his recommendation we found a particularly scenic tent site where there were magnificent views across the South Mowich River drainage. The evening was dry so we had a chance to dry out some clothes.

After a cool dry night, Wednesday 22 September, started with clear skies which lasted most of the day. We were walking by 9 am and enjoyed the rolling trail along a ridge followed by an easy descent to the South Mowich River, where we had lunch in the sun. The trail followed a bench along the river beneath trees which had spectacular hanging "old man's beard" lichens and thick moss beds on their stems and branches. This whole area was rich in fungi, lichens, and moss, indicative of high precipitation and age. After crossing the river we had another steady climb back up to the Mowich Lake car campground where, at about 4.30 pm, we loaded ourselves into the truck and drove back to Vancouver. While loading the truck we thought about our first arrival at this campground in the dusk and rain, and hearing the sad story of a very wet trip on the WT. We silently thanked the weather gods for letting us see most of this magnificent trail by keeping the clouds at bay most of the time.

I should add that the NPS does an admirable and very expensive job of providing safe river crossings. Mt Rainier has over 25 major glaciers and numerous snow and ice patches, most of which have creeks/rivers flowing from them. Not only during the melt season but at any time of the year, many of these rivers are exceptionally wide and fast and crossing them in the early days of this trail would have been a dangerous undertaking. On our trip we did not have to ford one creek and instead used magnificent steel suspension bridges or very large log bridges with a hand rail on at least one side. The rangers told us that many of the log bridges are swept away during the snowmelt period and some require replacement on a yearly basis, which would account for the increasing use of the expensive but more permanent suspension bridges. In spite of these huge maintenance costs, if one did not reserve wilderness permits, this trip could be done without paying any camping or trail fees!

Vancouver Island

Strathcona - Golden Hinde, 8-14 August, 2010

Geoff Zenger

Ever since climbing Mt. Myra with my dad (Ed) back in 2006 and seeing the towering peak of the Golden Hinde off in the distance, ascending the Golden Hinde had been on the list of places to go. Originally planned for late July, the trip was pushed back week by week as we waited for snow to melt, and by the second week of August conditions appeared to be right. The plan was to begin at the Westmin mines, hike north to the Golden Hinde, climb the mountain, and then continue north to Elk River pass and to descend from there to the highway.

Day 1: Burnaby to Arnica Lake

Our odyssey began early Sunday morning as Britt and I were picked up by Len to catch the 6:30 ferry to Nanaimo, on which we met up with Ed and John to eat a BC Ferries breakfast. Britt and I had never met

John before, and Len was eager to be reminded of what he looked like. He clearly knew John, because they had done some first ascents together before (i.e. Route 108 of Alpine Select, Northeast ridge of Bardean) but hadn't seen each other in 30 years. On the Island, we drove up to Campbell River to make some last minute purchases (batteries for the "Spot" that Max lent us), and left for the Elk River trailhead. As we were planning to make a traverse of the park, we left Ed's X-Trail at the Elk River trailhead and moved our bags onto Len's car roof. From there, it was only a 45 minute drive to the Mt. Myra / Phillips Ridge trailhead parking lot near Westmin mines at the south end of Buttle Lake. At 2 pm everybody was ready to go, and we began our trek.

Left - John, Ed, Geoff, and Britt (left to right) near the start of the trip; Right - Len, Britt, Geoff, Ed, and John (left to right) later in the trip. Photos: L. Soet (left); E. Zenger (right).

The trail from the parking lot to Arnica Lake is popular with local hikers and is very well maintained, featuring plentiful switchbacks and a few nice views on the way. We mused on the way up whether the switchbacks were meant as an educational trail building exercise for somebody, as I'm not sure whether I've ever encountered such shallow switchbacks on any other trail. Given the steepness of the slope that the trail ascends, the trail has an almost ridiculously low gradient. This, combined with my investment in a few pieces of new, lightweight, equipment despite Britt's concerns over my money expenditure, made for a fairly slow, but not overly strenous first afternoon of hiking.
Overall, the trip to Arnica lake was uneventful, and we were at the far end of the lake by 6 pm, where we set up tents on two of the four wooden platforms, as Len searched for a comfortable placement for his bivy sack. After eating dinner and relaxing for a while, we went to sleep as the sun went down, in order to prepare for an early start the following day. Unfortunately, while going to bed we found out that my Therm-a-rest had a fairly large tear in it that even duct tape couldn't repair, and so I had to spend the night sleeping on the wooden platform with only a small foam bum-pad under my hips for padding.

Day 2: Arnica Lake to Phillips Ridge pass

There is only one word that can describe the terrain of Strathcona Park: "rugged". Yet even that term hardly does justice to the terrain. From Arnica Lake, the trail began immediately at the camping platforms and briefly headed north before curving to the west onto Phillips Ridge. About an hour and a half into our trip we stopped on Phillips ridge for a snack and saw our first view of the Golden Hinde. Although we still had two full days of walking before we would ascend it, from this point onwards, the distinctive image of the Golden Hinde dominated the view from almost everywhere on the trail. Late in the day we encountered two steps on the ridge that we downclimbed on belay. Most people could downclimb without a belay, but with our heavy packs, we figured that since we had a rope, we might as well use it.
Our original goal for the day was to reach Carter Lake, but with our packs loaded with 8 days worth of food, progress along Phillips ridge was slow. One blunder was ascending a bump on the ridge of elevation 1732m. The proper trail contoured around the west side of the bump, but with the ridge still generally snow covered, we didn't notice that we should contour, and instead ascended the bump. Altogether, ascending the bump and backtracking cost us nearly an hour in wasted time. The weather was overcast for most of the day, with the sun peeking out from time to time, but by the time we reached the pass from where you descend to Carter Lake, we could see that a new weather system was moving

in and we spent the night just above the pass on a nice meadow. Soon after setting up camp, we were visited by fog and drizzle - the only bad weather encountered on the trip.

Top - On Phillips Ridge with Golden Hinde in the distance (right); Bottom left - Relaxing at Carter Lake; Bottom right - Golden Hinde rising above the Burman Ridge camp. Photos: E. Zenger.

Day 3: Phillips Ridge pass to Burman Ridge

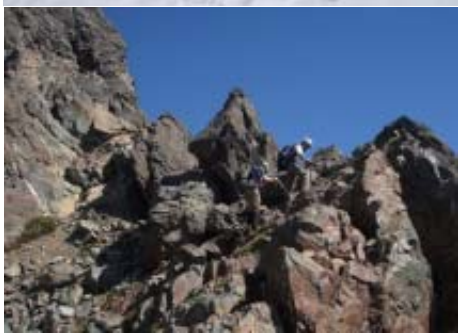
By morning, the fog and drizzle had lifted, and looking down the valley, across Carter and Schjelderup lakes, we could see the south/east slopes of the Golden Hinde glowing in the morning sun. From the pass, the trail dropped steeply down into the valley, and we frequently had to lower ourselves using the dense bush surrounding the trail. Some 1-1/2 hours later, we were crossing the creek at the base of the valley, and began re-gaining lost elevation in order to reach Carter Lake. Working around the west shore of Carter Lake was straightforward, and at the end of the lake we ascended up to the tarn below Mt. Burman. Unfortunately, we didn't notice the nice trail ascending the north side of the creek connecting the tarn to Carter Lake until it was too late, and so instead of the nice trail, we ascended to the tarn via the grasses and bushes on the south side of the creek. From the alpine tarn it is a short hike over to Schjelderup Lake. The lake is named after Colonel Roger Schjelderup from Smithers.He was the most decorated Canadian officer in the 2nd WW and camped at the lake when he was fifteen, but a more apt name would simply describe how long it takes to walk around the lake. I must admit that getting around the lake was easier than I had anticipated based on other people's trip reports, but it was a huge pain nonetheless. One trip report suggested sticking to ledges some 40m above the lake, but that is not what the trail does, and we elected to simply follow the trail. The trail did not maintain constant elevation but instead repeatedly ascended perhaps 20m then dropped back down to the lake. Approximately 3/4 of the way around the lake there was a nice platform from which to swim, and Len took the opportunity to quickly bathe in the chilly waters. We reached the far end of the lake at around 1 pm and stopped for lunch. In John's words, the only good part of getting around Schjelderup lake was that he would never again have to try and figure out how to pronounce "Schjelderup Lake".

While stopped for lunch, Britt let it be known that she was feeling quite sick in the stomach. Compounding our troubles, while stopped for lunch, Ed discovered that the heel had separated from one of his boots. This was somewhat repaired by drilling a hole through the sole of his boot using a Swiss army knife and tying the heel to the boot with two short lengths of string, but it was unclear how well the fix would hold together.

Hiking from Schlejderup Lake to Burman Ridge took us about two hours. It was a fairly straightforward hike that featured a lengthy traverse of low-angle slabs. Almost immediately upon reaching Burman Ridge we found an attractive location to set up camp. At this time, we began discussing our options. As mentioned earlier, our plan was to continue northwest after ascending the Golden Hinde, traversing west of The Behinde, De Voe and Rambler Peaks , and then descending into the Elk River valley. However, we knew that distance-wise we were still not half done, and that the trail quality would only become worse (nearly non-existent?) past Burman Lake. Given the state of Ed's boot and Britt's illness, after much discussion the decision was made to climb Golden Hinde and then return the way we had come. Once this decision had been made, there remained the problem that Ed wouldn't be able to ascend the Golden Hinde with his broken boot, but Len graciously offered to lend his boots to Ed so that he would be able to ascend the peak the following day.

Day 4: Golden Hinde ascent

Ed, John, and I woke early Wednesday morning to ascend the Golden Hinde as Len and Britt relaxed and waited for us in camp. The ascent began by dropping 400m down the ridge to Burman Lake. About 20 minutes down the ridge we came to the twin tarns, and not long after that we began the steepest part of the descent. Loaded with only the gear needed for the day it was no problem dropping down into the canyon, but it would be a real pain if our packs had been fully loaded. Down at the bottom we spotted some old steel cables, which apparently were left behind by work on an old BC Hydro plan to make Burman Lake drain to the east instead of to the west. From the base of the canyon it took us between an hour and an hour and a half up to the tarn directly below the Golden Hinde's summit. The area around the tarn was still completely snow covered and so we were lucky to camp on Burman Ridge and not there. Furthermore, the views on Burman Ridge were quite superior.



From the tarn, we ascended the snow and scree slopes towards the rock face above us until we saw the obvious ascent gully heading off to our right. If it doesn't look like an obvious gully to ascend, then you're in the wrong one. From the top of the gully we followed cairns around the south face of the mountain and continued up on snow until we encountered the steep snow slope of the Southeast Couloir. From that point, we spotted cairns above us to our right and started scrambling on the rock. The scrambling there was quite challenging with a number of class 4 moves on the route. After a while we reached a narrow ridge with a large scree slope to our left (actually, the Southeast Couloir, above

Top - south face of the summit pyramid of the Golden Hinde; Middle - ascending the snow slopes; Bottom - Ed and Geoff near the summit. Photos: E. Zenger (top); L. Soet (middle); J. Halliday (bottom).

the snow), and rock continuing to our right. We followed cairns off to the right, which unfortunately led us to a steep slope with no obvious line of ascent. Knowing that ascending the Golden Hinde needn't require technical climbing, we backtracked and found that by cutting across the scree slope into the Southeast Couloir, an easy scree ascent could be made right up to the summit. As the tallest mountain on the Island, the views from the summit were spectacular, and many peaks on the Island and the mainland were visible. Furthermore, to test the rumour, I turned on my cell phone and found that indeed, I did have 1 bar reception from the summit.

View from the summit down to Burman Lake and Mt. Burman (top); Geoff and Ed (bottom left) and John and Geoff (bottom right) on the summit. Photos: E. Zenger (top, bottom right); J. Halliday (bottom left).

To descend, rather than downclimb the rotten rock that we ascended, we elected to downclimb the snow in the Southeast Couloir. At its steepest, the snow was approximately 55-60 degrees, but it was soft enough to kick good steps in, and we slowly made it down to the base of the couloir. From there on, it was straightforward to retrace our route down the Golden Hinde, down to Burman Lake, and to slog back up the ridge to the campsite.

Climbing the Golden Hinde did not require technical climbing, but I would not recommend that anybody attempt the peak without sturdy boots and an ice axe. We did not use the rope. Soon after we summitted, another fellow reached the peak with no axe and in lightweight hiking shoes. This is probably fine for heading up, but when he passed our camp that evening, he told us that had we not kicked the steps down the snow in the couloir, he would probably have not been able to descend the peak safely and may have had to call for help.

Golden Hinde behind camp on Burman Ridge. Photo: E. Zenger.

Day 5: Burman Ridge to Phillips Ridge
By Thursday, Britt was beginning to feel much better, and the hike from Burman Ridge to the pass on Phillips Ridge took us only 5 hours or so, even with a brief stop for Len to bathe once again in Schjelderup Lake (yes, John had to pronounce it again), so we elected to carry on to Phillips Ridge. A couple bumps over we found a good campsite, and as the other (old) guys who had climbed the Golden Hinde the previous day were feeling tired, we stopped in the early afternoon to set up camp and spend the rest of the afternoon reading and napping.

Day 6: Phillips Ridge to Arnica Lake
We woke up Friday to a thick haze of forest fire smoke that had been blown over to Strathcona park from the mainland, and for most of the day had limited visibility. Nonetheless, we knew the route and were able to descend quickly to Arnica Lake, arriving there around 1:30. We had a debate over whether it would be possible to descend, pick up the other car from the Elk River trailhead, and still make the last ferry from Nanaimo, but eventually decided it would be impossible and so set up camp and once again lounged around, spending the afternoon reading and napping in the warm sun that eventually broke through the haze. We also had time to swim and clean up.
As a brief aside, while descending to Arnica Lake we encountered a party that had tried earlier in the week to get up to Elk River pass, but were unable to cross the Elk River due to a “raging torrent” of water racing under the remnants of a snow avalanche. The amount of meltwater would need to be carefully considered by any party wanting to traverse from the Golden Hinde over to the Elk River trailhead. I would also recommend to have a good map and a GPS.

Day 7: Arnica Lake to Burnaby
We woke up early Saturday morning to descend back to the cars, and made it down in approximately 3 hours. It was another warm, sunny day. After picking up Ed’s vehicle from the other trailhead, we stopped at Buttle lake to wash up before making our way back to Nanaimo and onto the ferry.
(Ed’s boots held up very well,but it was time to throw them in the nearest garbage bin)
The scenery in central Strathcona park was spectacular, and our campsite on Burman Ridge was one of the most beautiful places at which I’ve ever camped. Furthermore, the ascent of the Golden Hinde itself is fun, with great views from the summit.

Participants: John Halliday, Len Soet, Brittany Zenger, Ed Zenger, and Geoff Zenger.

Shaken by The Golden Hinde, 6-11 September, 2011

Peter Gumplinger

The Golden Hinde is Vancouver Island’s highest peak and one of its least accessible. The mountain was officially named in 1938 after the ship in which Sir Francis Drake sailed along B.C.’s coast in 1579. Hinde is a Middle English word for a female red deer. “The Rooster’s Comb” was the earlier name conferred on the mountain by pioneering alpinists. It is a rugged looking mountain from any direction. No access routes are easy but all are worth the trip. The quickest route in is from the south via Phillips Ridge, starting at Boliden (formerly Westmin) Mine at the south end of Buttle Lake. A favourite route is through Marble Meadows, accessed by canoeing across Buttle Lake. A third option is from the north (Gold River Highway). This route initially ascends the Elk River Valley but then becomes rather more convoluted, requires skilled route-finding, and is the longer of the three approaches. Any two of the three routes can be combined for a fantastic traverse of the heart of Strathcona Park. I had long wanted to climb The Golden Hinde. My desire was rekindled after Robin Tivy posted a trip report “Overland to Golden Hinde” on bivouac.com in 2003, but it took another 8 years to finally develop a definite plan.
The weather all summer had been awful but during the second half of August a long stretch of sunny and hot weather had settled in. Since we had visitors from out of town we couldn’t take advantage of this high until well into September. Somewhat concerned that we were missing our chance we called for

the forecast repeatedly. Fortunately, it predicted seasonably hot and sunny skies even beyond the six days we had planned for the trip. In the end, our trip turned out to be blessed with not a cloud in the sky the whole time. It was strange to be on a multi-day outing with no worries about the weather. I can't recall another trip where it was so hot and sunny every day that it got boring to the point that we wished for some clouds.

Several accounts rate the Marble Meadows access as the most aesthetic and the Elk River exit as the more classic continuation. The issue with the Elk River route is that more of it is below tree line and in the bush. It requires a long bike shuttle if you only have one car. So, we decided on a loop from Marble Meadows to Phillips Ridge, almost all if it above tree line. At first, I wanted to do this unsupported with the idea that we bring a bike, leave it at the end of the traverse, and not one but two boats, the second in order to retrieve the first. The problem with this plan is that Buttle Lake is notorious for mid-day north winds and the resulting chop, so retrieving the canoe could pose problems. I phoned Strathcona Park Lodge to help us. For a fee, not cheap but paltry compared to helicopter costs for some other trips, two employees of the lodge would assist with the shuttle.

Silke and I took the early ferry from Horseshoe Bay to Nanaimo and had a quick stop at River Sportsman Outdoor Store in Campbell River to buy the topographic map I had reserved by phone. We then headed for Strathcona Lodge where our helpers were already waiting. A quick tour of the facilities and off we went in a convoy of our car and their truck to the south end of Buttle Lake and the parking area behind the mine. I parked the car in a shady spot and stashed a six-pack of beer out of sight in the nearby creek. We hastily changed into hiking boots and made last minute adjustments to what we brought and what we left behind. Back at Auger Point Day Use Area it was only a 10-15 minute paddle with their four-person canoe across a dead-calm Buttle Lake with amazing reflections of the surrounding mountains. The shuttle was accomplished with no bike, and no boat of ours, only the certainty that after our helpers had left, we have only the car at the far end of the traverse to go to. We shouldered our loads amidst a horde of tiny black frogs jumping all over the place. Cold air from the sub-alpine flowed down as well, making for a pleasant start to a long and hot grunt up almost 1300m in elevation. The trail-of-a-thousand-switchbacks was well-graded and we made good progress even in the mid-afternoon heat. The forest was more open than we were used to from the Mainland, and there was little to no blow-down to contend with. We scared a large black bear, the only bear we would see the whole trip. A couple of parties came the other way, not unexpectedly since we had seen their canoes. This also meant that we were not going to see anyone else up at the Meadows. When we reached the crest of the ridge we saw more than 80% of the land still covered with snow. The area around Globeflower, Marsh-Marigold, and Limestone Lakes is supposed to have incomparable flower meadows. Their names can only hint at the beauty. Limestone Lake could only be made out as a flat white disk. There was a snow-free tarn near the crest so we elected to camp early. I had a cold dip with views of Marble Peak. After

Hiking to, and dipping in the tarn near, the first campsite on the crest of the ridge to Marble Meadows. Photos: P. and S. Gumplinger.

dinner we sat on a bluff. The fine view all the way back down to Buttle Lake was worth all the sweat and toil.

It was another 2½ km to the Wheaton Lake hut, our original first day's destination, so we started early the next morning. We traversed well above Limestone and Globe Flower Lake without much height loss to the base of the southwest ridge of Marble Peak. Far below us was Marblerock Lake, also still mostly snow covered. We arrived at the hut in no time, looked around a little, then proceeded up the next slope a short way until a gentle ridge gave access to the basin beyond. All the while Morrison Spire dominated the western skyline. Cairns were followed to the waterfall east of Morrison Spire. We discovered too late that the continuing cairns marked not our route to the extreme south-shoulder of Morrison Spire but the climber's access to Mount McBride. We had missed the turn-off, though it was now obvious where we should be going. We arrived back on route tired and stopped for a break in the shade of a clump of trees. After more side-hilling and a steep descent we reached Rainbow Pass. This pass northeast of Limestone Cap is aptly named for its stunning setting. If you take the time, the place makes for a great natural campsite, babbling brook and all. But this year, the mosquitoes were horrid, not just here but everywhere on our trip.

Marble Pk. (top); Heading towards Morrison Spire (bottom). Photos: P. Gumplinger.

We regained the expanse of The Limestone Cap, a flat-topped rock escarpment, deeply fissured through rainwater erosion. This wasn't evident to us, nor was the geology found here, especially the famous limestone fossils. Everything was buried under meters of snow. On the other hand, we didn't need to lug much water around. There were many watering holes and always snow to melt. For physical endurance, the stretch from Limestone Cap to the Schjelderup Lake was the most challenging section of our approach. On the technical side, the 3-4 meter vertical bit with exposure behind an unsuspecting knoll was a little imposing at first glance, but the hand-holds weren't so bad, but roping-down of packs was required. It was a slog - the constant ups-and-downs until we were finally on top of that grunt-of-a-hill, Tibetan Mtn. It was a tangled and confusing bushwhack down the south side. I should have kept to the clear ground east of the ridge's center but I got sucked into crossing it following a game trail. Then we fought krummholz and slippery slopes down to the broad pass north of Greig Ridge. We pitched tent in what was a mosquito infested bog-land. In hindsight, we should have camped earlier on the high ridge just east of the upper Wolf River Valley.

We gained Greig Ridge mostly on snow - the ice-axes came in handy - except near the top where we scrambled up a rock column next to a snow finger. We topped out exactly where a prominent cairn marks the descent route for parties travelling in the opposite direction. The sight was reassuring and boosted my route-finding confidence which was then promptly put into question again when Silke refused to follow my proposed way down to the broad saddle with Crystal Mtn. Her alternative was a wide open snow slope which was soon marked with two sets of long white glissading skid-marks. A little later, we ran into the camp of a couple of Vancouver Island hikers and had a short chat with them. Most interestingly, their defence against the biting menace was several fuming Coleman mosquito coils strategically placed around camp. Good progress over Crystal Mtn and then Mt. Jody had us at the small pass immediately south of Mt. Jody. The intimidating, shady side of a dark triangular hump loomed beyond the pass. The descent route to Schjelderup Lake started just barely north of the low-

Top - Golden Hinde and Burman Lake;
Middle - Golden Hinde from N shoulder of Mt. Burman;
Bottom - Schjelderup Lake from summit of Mt. Jody.
Photos: P. Gumplinger.

point of the pass, and angled WNW towards the lake's north end, initially across open but rock-strewn meadows with an excellent concentration of wildflowers. This route came with little recommendation in the guide books so we were prepared for the worst. We actually contemplated crossing over the dark hump and using a route down a snow gully to the south end of Schjelderup Lake. We knew that this alternative was the preferred route of a prominent Island climber. In the end, our shorter route was not particularly difficult to follow if you paid attention. Only lower down in the forest did we have to seriously use vegetable belays to get down. I had a welcome swim in the lake. Schjelderup Lake is deep and very clear to great depth but was as cold as ice with most of the shore still covered in snow.

The trail up to the north shoulder of Mt. Burman was quite picturesque, with a multitude of melt-water streams coming across the smooth undulating rock-slope. We saw one pool perched on a small ledge that was of the same size and shape as a standard bathtub at home. A cairned route led down the north ridge of Mt. Burman to Burman Lake. On this descent, we passed several shallow tarns, and then on the last part above treeline at 1300m, we came upon two beautiful deep tarns (Twin Tarns). There was no discussion; we were going to attempt our climb of Golden Hinde from there. The larger tarn was about the size and depth of a 50m pool and made for some great swimming.

We dropped from our splendid campsite into the gorge at the east end of Burman Lake early next morning. We then followed the trail up and out of this shaded, constricted space, past a series of nice rock ledges, and emerged on top of a moraine. The map still showed a glacier there that has long since gone. Our first view coming into this area was of a permanent snow-pack and large boulders, some the size of pick-up trucks, strewn about. There was little open water. This was the Moraine Camp from where most parties started their final ascent. The various routes described on bivouac.com for getting out of this basin and on to the SE ridge, looked very unpleasant from our vantage point. Most suggested using gullies that headed NNE almost immediately above the lake. What we saw were steep heather and ugly krummholz routes or narrow wet gullies. We opted for climbing open snow and scree out of the basin, hoping that a higher

Twin tarns campsite. Photo: P. Gumplinger.

hidden gully would go. Our route seemed to double-back up to the SE ridge. We kept to the side of the scree as much as possible, found some quite pronounced scree trails, but no cairns, not until we were well in the gully. For the most part, our chosen route turned out to be really easy. A big cairn on the broad SE shoulder marked the top of the gully. We crossed into a large talus field on the SE face and continued in a climbing traverse to its top-right corner, from where a white granite dike led to the base of the prominent snow field in the couloir. Starting to the right of, and next to, the snow, we then climbed gullies and solid ledges. This was moderately exposed but not difficult. Above these ledges, a scree side-chute was ascended to near the top. The ground in the chute was very crumbly under our feet and we were glad to be only a party of two climbing close together. A scramble exit led to the short summit ridge. I'd say no technical gear is required for this climb but a helmet is definitely recommended.

Top - Silke on the summit of the Golden Hinde.
Middle - Greig Ridge, Phillips Ridge, Schjelderup Lake, Crater Lake, Mt. Burman, and Burman Lake (left to right) from the summit.
Bottom - Looking north from the summit.
Photos: P. Gumplinger.

A totally clear sky, only a very slight breeze, with views of both Georgia Strait and the open Pacific, it was a great feeling to sit on top of an island. I perused the summit register while butterflies fluttered about. We were soaking it all in when, after half an hour, Silke was leaning against the vertical flat side of a boulder and I was sitting horse-back draped over another, the mountain suddenly shook! I had the sensation that the peak was actually swaying but that might have just been my imagination. It was 12:42pm. The quake lasted almost a minute and had several sets of intensities. At one point, we could hear rockfall below. Silke was worried that the entire summit might collapse since the very top was really just a pile of large boulders. But all things considered, we concluded that the summit was probably the safest place. We had been lucky to have summited before the quake. I had just finished with my entry in the log-book when it all started, so I wrote of our experience in an addendum. We waited a long while for aftershocks before we commenced our descent. We retraced our steps exactly, again avoiding the steep snow in the couloir even though we had brought ice-axes and traction devices. We later learned that what we experienced was a very strong subduction earthquake with magnitude 6.4, and an epicenter off the coast of Vancouver Island, 120km from Ucluelet, at a focal depth of 23km.

We only reluctantly left our fabulous camp at the Twin Tarns. We hadn't decided on which route to take - over the top of Burman Mtn, or reversing the route to Schjelderup Lake. By all accounts, the trek around the west side of Schjelderup Lake is a thrash, so we explored options to bypass the north summit of Burman across its western flank, or scramble over the top. The bypass route was ruled out when it quickly turned steep and mildly exposed, the alternative was to drop way down in elevation. Back at the north shoulder, we discovered a chain of tiny cairns directing us up some steep steps. Quite soon we were confronted with a wet corner and almost no hand-holds. We didn't fancy ascending this even for a recce and without packs, fearing the down climb, so we

Top - The Golden Hinde from the twin tarns campsite; Middle - Carter Lake beneath the Golden Hinde; Bottom - A receding Golden Hinde above Phillips Ridge. Photos: P. Gumplinger.

gave up and hiked to the lake instead. The route around the lake, up and down to avoid rocky outcrops, needn't be too bushy but it was more of a thrash than one would expect by the number of people hiking to the gorgeous campsite at the north end. The infamous high-angle snow field on top of a rockslide still went right down over the lakeshore. One could end up cartwheeling into the frigid lake without an axe. Once around Schjelderup Lake we picked up the route heading west up to a little unnamed lake. From there it was open slopes down to the campsite at the head of Carter Lake. It was pretty neat to consider that Schjelderup drains to the east into the Strait of Georgia while Carter, just a few hundred meters south, drains west and into the open Pacific. This truly was the high spine of the island. We stopped to lounge in the hot sun. I had another skinny dip when a couple of guys approached. They were on a mission to climb Golden Hinde in three days return. At least one very fast party accomplished the Elk River variation from Arnica Lakes in three days, going over the top of Mt. Burman, and climbing Golden Hinde on their second day. The feat of climbing Golden Hinde in a single day has also been accomplished several times by different parties. The hike around Carter Lake was pleasant and then, where a natural faucet poured from the lake, it was downhill. You could be forgiven thinking you were off route since your objective was to climb the opposite slope. The flagged route eventually crossed, as expected, two arms of the outflow creek. From this low-point, it was a grunt to the "final notch" on Phillips Ridge. There were a few tricky steps with few feasible hand holds up some steep dirt near the top. The fast-pair had told us about this and what was a heinous descent for them. A slip could send you tumbling 10 or more meters into a creek/gully. The trail then went over a series of three steep bumps. We weren't sure where exactly we encountered Robin's "Terror Gap". One big snow slope was relatively easy going uphill but we were still glad we had brought axes. I was certain a party could be stymied here, especially on the descent, without anything to arrest a slip. Camp was just beyond the highest point on Phillips Ridge between characteristically weathered pure white limestone boulders. While looking for a suitable spot, our deliberation included aspects not normally considered. A flat-sided boulder, sitting firmly on a slight incline, was still deemed threatening in case of another earthquake. It was, until I yanked at it with all my might and it wouldn't budge. The sunset was incredible and the skies crystal clear. A sea of mountains was in all directions and even some massive glaciated mainland peaks were visible.

The forest above Arnica Lake came all too soon. We were now getting used to rambling above treeline in such a fantastic setting. The Hinde had slowly receded but there was always a plethora of island peaks all around us. Arnica Lake invited us for a swim. Oddly, it had fewer bugs than higher on the ridge. The park trail went around the east side of the lake before dropping down to the valley. The trail was

well-constructed, reminiscent of trails in the European Alps, but on the occasion of the centennial anniversary of Strathcona Park's creation, it was a little neglected. Downed trees across the trail have resulted in well-established shortcuts for some of the long and gentle switchbacks. When screeching mining activity noise penetrated the old growth forest, we knew that our traverse was coming to an end. Of course, the not-so-cold creek-chilled beer tasted phenomenal.

Central Coast Mountains

South Chilcotin Mountains Traverse, 14 – 23 July, 2010

Karl Ricker, Carol MacMillan and Holly Colquhoun

Introduction (Karl)

The 2010 rendition of the Chilcotin traverse was a full ten-day endeavour, covering more terrain than the previous three trips. (See the B.C. Mountaineer of 2010, 2006 and 2004 for their wanderings.) Carol did the research on the route while Karl is reporting on the natural history that everyone helped to observe: namely, Dave Scanlon, with an eagle eye on the wildlife, the ladies with the flowers, Holly with the fishing rod, Holly and Geoff with a good eye on fossils and other rock, and all of this recorded with Geoff's photography.

When the trip prospectus was announced at the club's April social meeting, seventeen aspirants came forth. Because the trip always began with a flight from Tyaughton to Lorna Lake, there was a 12-passenger constraint, imposed by Provincial Parks regulations, because Lorna lies within the confines of Big Creek Provincial Park. Apparently, there is no limit on cows – more than 100 are pushed into the park from the north by ranchers! I didn't worry about the extra number of applicants, knowing that a few would drop out and so did no further advertising. That was a mistake, however, because the numbers quickly dropped to 13, then 11, then 9 and finally, I thought stability had finally arrived at 2 plane-loads of four trekkers each. But in June it dipped to 6. Fortunately, Nancy Henderson unexpectedly appeared, so we set out one short on two full plane-loads. The excuses for dropping out were varied, though were probably legitimate. Four had developing knee problems, another had a heart condition to be operated on, and the rest devolved into timetable clashes with other commitments. So the trip began with 4 ladies and 3 men, average age: 62. The objectives were five-fold:

1. our first travels on the Dil Dil Plateau, though at least two other BCMC trips had done it prior to 2000 A.D.;
2. ascend the area's highest, Mt. Vic (3001 m), a project that was cancelled in 2007;
3. visit historic Graveyard Valley, a scene of native band clashes in the past;
4. climb Mt. Cunningham (2546 m) which was inadvertently bypassed in 2005; and
5. exit the area through North Cinnabar basin, instead of our usual walk-out on the old Pearson Creek mining trail.

The itinerary and campsite locations were arranged to meet these goals, with warning that ten and a half to eleven days might be needed. By spending one less day at Castle Pass, the trip was accomplished in ten full days, by sacrificing the ascents of Cardtable Mtn. and Windy Pass Mtn. Weather generated the cancellations. However, there was an unplanned ascent of Mt. Davidson (2472 m), and three gung-ho chose to forsake the afternoon ascent of Cunningham for a very fast trip to Relay Mtn. (ascended in 2005).

The campsites to meet the objectives were set as follows (campsite coordinates, on the NAD '27 grid, are in brackets):

- Camp 1: Eastern edge of Dil Dil Plateau (489173E, 5671524N).
- Camp 2: Vic Lake (483491E, 5673018N).
- Camp 3: Entrance to Graveyard Valley (491497E, 5672201N).

- Camp 4: Tyoax Pass (495554E, 5664412N).
- Camp 5: Upper Little Paradise Basin (498233E, 5661950N), as in 2005.
- Camp 6: Castle Pass (503345E, 5658909N), as in 2005.
- Camp 7: Spruce Lake or west side of Windy Pass (502000E, 5651410N).
- Camp 8: Eldorado-Taylor basin divide (508875E, 5647707N).
- Camp 9: (if needed) Cinnabar Basin.

As expected, there were minor changes once on the scene. Camp 2 (2 nights) was on the western edge of the Dil Dil because people preferred to descend to Vic Lake on the day of climbing Mt. Vic rather than carrying heavy packs to the lake and then climb the mountain on the following day, and then pack out up-hill from the lake on another day. The Graveyard camp ended up somewhat short at the scenic ford crossing of Big Creek, and high water on the Tyaughton Creek ford had to be countered with a detour upstream, meaning there was no chance of reaching the Windy Pass campsite in a reasonable time without undue extra effort. However, a speedy ridge traverse along an unknown trail to Cinnabar Basin cancelled the requirement to camp in its basin. We exited before 5 p.m., allowing Geoff just enough time to catch the evening ferry to Nanaimo

The trip (Carol and Holly)

We met up with some of the gang at the Gun Creek Hydro campsite on Carpenter Lake just in time to head in to Gold Bridge for dinner at the pub. Later back at the campsite Karl and Geoff arrived about dusk and our group for the trip was complete.

The party about to set out from Lorna Lake (Geoff Mumford, Holly Colquhoun, Nancy Henderson, Carol MacMillan, Karl Ricker, Dave and Donna Scanlon (left to right). Photo: H. Colquhoun.

July 14 - It was an early start to the day as we packed up our tents and headed to Tyaughton Lake for the 7:30am flight with Tyax Air Services and pilot Dale. The first group of 3 flew in on schedule and the plane was back to pick the second group up by 8:15am for the 20 to 25 minute flight. We landed on Lorna Lake and spent a little time organizing our heavily loaded packs for the day on the trail. We were off by 9:20 and we hiked until 4:40pm. Skies were clear and the temperatures increased in the afternoon. We followed the Big Creek trail initially, traversing through lots of beetle killed pines. Lunch was at the horse camp and we certainly noticed that the bugs were around in force. We turned up the Tosh Creek trail and then climbed up onto the Dil-Dil plateau. It was hard work on a hot steep slope. We made camp near a small tarn on the plateau.

Karl at Lorna Lake. Photo: H. Colquhoun.

July 15 - We were up and on the trail by 8:30am after a warm night. The weather was clear, with not a cloud in the sky. We walked west across the Dil-Dil, initially through scrubby birch and then open terrain as we climbed towards the high point. We stopped for lunch just above Lake Vic but out of sight of it. During our lunch conversation it was decided that we would camp for the day and climb Mt Vic the following day. We climbed the “Rubble Mtn.”, peak 2794 m to the south of our lunch stop and had great views of Mt. Vic from the top of the pile. We made a round trip and came down across the snow, scoping out routes for our approach to Vic the following day. We back tracked about ½ km and camped on the plateau instead of descending to the lake. Total km for the day - 14.

July 16 - We left for Mt. Vic by 8am. A thin band of cloud across the sky cleared by the time we were on the trail. We retraced some of our steps of the previous day and made our way down to Vic Lake, dropping 150 m on some rather ugly scree slopes. There we were met by two wolves who were on the move - one black and one white. They soon disappeared. Our route went around the north side of Lake Vic, up the snow covered glacier and then followed the SE ridge to the summit at 3004m. The tremendous views in all directions were admired. After lunch we dug around in the summit cairn and found a note left by BCMC members 13 years earlier. Brian Gavin, Susan Nesbitt, Ernie Carson and Mark Force had climbed the peak on Aug 13, 1997. We came down fast - first on snow and then on the shale and the lower glacier before climbing back up to the Dil-Dil on the back side of "Rubble Mtn". Total km - 15.

Climbing out of Tosh Ck. valley to the Dil-Dil plateau. Photo: C. Macmillan collection.

Ascending snow slopes of Mt. Vic. Photo: H. Colquhoun.

Geoff, Carol, Nancy, Donna, Karl, and Dave (left to right) on the summit of Mt. Vic. Photo: C. MacMillan.

Lake Vic from Mt. Vic. Photo: H. Colquhoun.

Mt. Vic above Lake Vic showing the ridge climbed on the left skyline. Photo: C. MacMillan.

July 17 - The weather held with more clear skies. We broke camp at 8:30am and headed back across the plateau, dropping 300 m before having lunch on the east edge with views towards the Tosh-Big Creek junction. We dropped another 150 m after lunch and waded first over Tosh Creek and then Big Creek. Both crossings were easily handled by the group. After crossing Big Creek we ended up in a pleasant meadow and decided to stay. We camped up on the bench above the meadow with panoramic views of the creek and the mountains beyond. Most of us enjoyed a refreshing swim/wash in the creek. After stew and dumplings for dinner we wandered over towards Graveyard Creek. There were lots of cattle in the meadow and an old cabin on the other side of the river. Total km - 11.6.

July 18 - We woke to ice on the water. We called this the "creek crossing day". En route up Graveyard Valley we crossed four creeks where we needed to remove our boots and

A river crossing (left); two views of Big Ck. valley (right). Photos: H. Colquhoun.

"croc" it. In the upper part of the valley we found the reason for the name: several native gravesites were evident and a memorial cairn was present. From Graveyard Valley we branched up the Tyoax Creek trail/route. It narrowed considerably and soon we were on snow. Part way up we stopped to search for fossils which were everywhere along the trail. We reached Tyoax Pass at 3:30pm and made a group decision to camp beside the creek just below the pass. Once our tents were up Nancy, Karl, Dave and Geoff headed up Mt. Davidson above the Pass. It took them one hour to climb up and 15 minutes to come down. Total km - 12.9.

July 19 - Karl had us on the trail by 8am. The sun was just reaching us in the valley so it was a cool start to the day. We headed out across the scree slopes and found that travel was made easy and faster thanks to previous horse traffic on that route. We reached the rim by 9:30 and continued along a ridge to an early camp at the base of a lava plug between Mt Cunningham and Relay Mt. After a quick lunch break Nancy, Dave and Geoff left to climb Relay while Karl led Donna, Carol and Holly up Cunningham. From there we watched the Relay group summit. The views were spectacular in all directions - to the Shulaps and Bendor Ranges, Mt Dickson, Sheba and back towards Mt Vic.

Graveyard valley (top); heading from Graveyard valley to Tyoax Ck. (bottom). Photos: C. MacMillan.

Donna, Karl, Holly, and Carol (left to right) on the summit of Mt. Cunningham. Photo: H. Colquhoun.

July 20 - On Day 7 we woke to our first clouds. The sun broke through for our lunch break, but later it rained. We retraced the climb that we had taken to the Cunningham north ridge the previous day. The Relay group broke off to summit Cunningham taking with them pen and paper to add all our names to the summit register. We continued in an easterly direction and dropped into the creek leading up toward Castle Pass. There we had lunch. Later at the Pass itself we took the obligatory photos and

Heading to Tyoax Pass. Photo: C. MacMillan.

Looking SE from Tyoax Pass. Photo: C. MacMillan.

On the trail. Photo: H. Colquhoun.

then dropped down a short way and made camp. We had just gotten the tents up when it began to rain and we dove for cover. The rain held us in our tents for an hour. We emerged after the shower, had tea and then scrambled up Fortress ridge to the east and enjoyed the views to Spruce Lake, the next day's destination.

July 21 - This was one long day! We left camp by 8 and took the ridge leading southward off Fortress Mtn. towards Tyaughton Creek. There was no real trail and we bushwhacked a long way down

Looking W from Mt. Cunningham towards Tyaughton Ck. valley. Photo: C. MacMillan.

On the shoulder of Mt. Cunningham with Relay Mtn. in the back-ground. Photo: C. MacMillan.

Heading towards Fortress Mtn. on the skyline. Photo: H. Colquhoun.

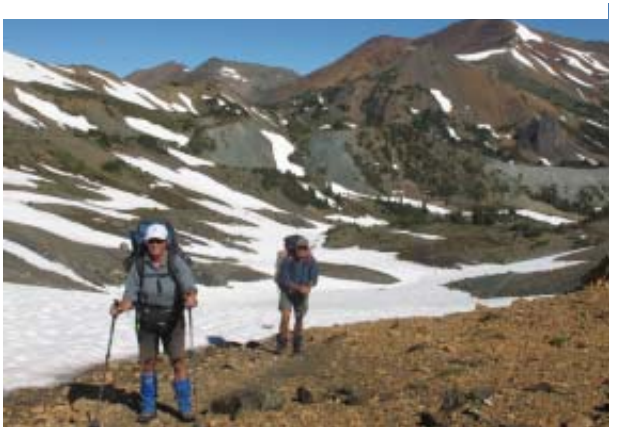
Looking S from Fortress Mtn. towards Spruce Lake with Truax Mtn. on left skyline. Photo: C. MacMillan.

before finding the horse trail up Tyaughton Creek. We got to the first ford only to find that the river was much too high and fast to cross. We continued up river another 2 km over rough trails with much dead fall to another ford that the horses had used. We crossed using a rope with water up to our hips. Once across we had a 2 hour walk up to Spruce Lake where we camped for the night in a regulation campsite with a picnic table. There was light rain after dinner which drove us all into our tents early. The long day would have done that even without the rain! Total km - 13.7.

Heading to Taylor Pass. Photo: H. Colquhoun.

July 22 - Donna and Dave decided to fly out at Spruce Lake. The weather was poor and the opportunity arose to catch a flight returning to Tyax Lodge. Holly hiked down to the end of Spruce Lake ahead of the group to fish and rewarded us all by providing fresh trout for dinner. We waved as we watched the Beaver with Donna and Dave on board taxi down the lake and get airborne. The rest us then started the climb towards Windy Pass. It seemed like a long way up. We stopped for lunch in the rain near tree line at Karl's 2007 campsite. By the time we reached the Pass the rain had finished and the sun began to break through, revealing the great scenery and lots of wildflowers. We hiked along an old portion of the trail leading to Taylor Pass and came across an old miner's camp. From there we found the old mining road and continued through Taylor Basin to camp at the pass. We voted this the most beautiful campsite of the trip as we cooked the fresh trout on the fire for dinner. Total km - 14.3.

Descending from Windy Pass. Photo: C. MacMillan.



Holly and Geoff heading up to Camel Pass. Photo: C. MacMillan.

July 23 - We awoke to sunshine and the call of a Clark's nutcracker sitting above the tent. It was a leisurely breakfast as we waited for the sun to soften up the frozen north-facing slopes of Harris Ridge that we needed to traverse that morning en route to Camel Pass. There we popped through to the flower-filled south facing slopes and dumped our packs. We scrambled up the aptly named Camel, en route passing the memorial plaque to Bob Harris (1922-1998) installed by the Vancouver Natural History Society. The views from the Camel enticed us to hang out and enjoy the spectacular scenery. Eventually we continued to the east either on the ridge top or on the horse trails that permeate the area. After lunch we soon found ourselves at the top of Cinnabar Basin and quickly lost elevation into it on the open meadows and snow patches until we reached the creek at tree line. This necessitated some bushwhacking to find the

trail out of the basin. Eventually the GPS contingent and Karl's bush thrashing came up with the same answer and we hit the trail. It climbed unto a ridge and then descended through trees for 750 m or more to the road. We had occasional views to the Bendor Range and Carpenter Lake as well as to Tyax Lake. At the road we made a right turn and 45 minutes later were back at our vehicles at Tyax Lodge. A refreshing swim in the lake, a beer and the trip was over. Total km - 15.8.

Natural History Observations (Karl)

The trek in 2010 focussed on wildlife, large mammals and birds, and paid only passing notice to other features, with some minor exceptions. Traversing the Dil Dil Plateau for our first time invited a wide range of curiosities. It provided wide-open terrain to scan afar for wildlife and to observe directly at our feet the sparse ground cover, usually below ankle height. Dave quickly spotted the hoofed animals; birds flew up out of the ground cover; and the flora was in our face. We did not bring a floral field guide - the packsacks were heavy enough without them. Strangely though, after leaving the Plateau our packs accommodated the fossils found underfoot in the narrow confines of Tyoax Valley!
The Dil Dil Plateau lies in stark geologic contrast to the mountains that surround it. It is not dead flat, although it is relatively smooth, tilted down slightly to the north-east. What follows focusses on what was not mentioned in our travels in the area previously with respect to the geology but does include all observations of wildlife and selected identifications of the flora. For locations of the various campsites used for positioning in the following commentary, refer to the grid positions noted in the list of bird sightings, or list of mammal sightings.

GEOLOGICAL OVERVIEW
The geological units of rock and how they came to their final exposed position are what makes the South Chilcotin Ranges so uniquely spectacular. Lying leeward of the Pacific Ranges of the Coast Mountains also helps — the climate is dry, so glaciers are small where they do exist and the mountains mass waste *in situ* from frost action and the forces of gravity. Colourful, yet subtle, shades of brown, red and greenish-grey debris mantle the slopes which cover the underlying rock types. Seven age groups of volcanic and sedimentary rock representing over 230 million years of geological evolution of the Chilcotin Ranges are underfoot, and there is one, possibly two, interloping intrusions of granitic rock into this pile of formations. Their puncture into the succession, however, was a late arrival, roughly 50 to 55 million years ago, long after plate tectonic events added segments of offshore volcanic isles and sea floor sediments to the western edge of a then smaller North American continent. Locally, the two oldest groups of rock are part of this growth. Initially, offshore, as oceanic terranes they were brought to the continental edge, with ensuing fold-thrust upheaval. A deep inboard depression developed, named the "Tyaughton Trough", which accumulated their erosional debris but also was accompanied by its own volcanic eruptions. The "trough" deposits in this area are made up of four groups of strata, the entire succession filling the elongate basin by the close of the age of the dinosaurs, 65 million years ago. However, plate tectonic movements continued uplifting the "trough" into hills and plateaus, above sea level. Eventually the underlying subduction forces began spewing out "soupy" lava onto the landscape beginning about 5-15 million years ago. As soon as one sheet of "soup" had cooled, another upwelling would smother it. So, the seventh and youngest group of rocks are mainly a succession of lava flows which covered much of the interior plateaux of the province, as well as the Dil Dil that was traversed on our trip.
The overview is simple, the oldest groups (200 to 350 million years), the Bridge River and slightly younger Cadwallader were exotic oceanic "orphans" slammed into North America, each being a mix of deep sea sediments, volcanic complexes, bits of limestone reefs, and serpentinite derivatives of peculiar deep-seated intrusions of granitic rock. The following succession of sediments and volcanics filled the evolving Tyaughton Trough: the oldest, Tyaughton Group (sediments, minor volcanics), Relay Mountain Group (sediments), a yet younger Taylor Group (volcanics and sediments), and the youngest (at least in this area) Kingsvale Group (more volcanics and sediments). After the whole "shebang" was

pushed, folded and thrusted into complex geometries, with the help of granitic intrusion, the seventh group of strata was spewed out – the terrestrial lavas of the Chilcotin Group (a.k.a. Plateau Basalts). Several surges of continental glaciation then honed the landscape. Valleys deepened by glacial ice saw the removal of the Chilcotin Group on mountains east of Big Creek. The flat-lying lavas were preserved only at summit level on some, and not at all on others below 2500 m. Broad sheets of lava, however, lie on the Dil Dil Plateau west of the Big Creek valley which pinch out against the elevated peaks of the Mt. Vic and adjacent unnamed massifs. This is rather obvious. Differentiating the older strata into the above-named groups, however, is difficult.

About those granitic intrusives which dominate in exposure in the Pacific Ranges to the west - locally they are younger and lacked the overwhelming physical punch. They are mainly hidden under the sediment and volcanic pile of the six groups of strata noted above, exposed locally at the base of Mt. Vic and as very small exposures to the east on Mts. Cunningham, Davidson, Elbow and Dash Hill. Thus, the area is preserved with subtle shades of brown, maroon, green, red, orange, yellow and dense greys of the detritus slowing being shed from the seven groups of strata. The light greys of the granitics are hardly seen in this area.

The modification of the landscape over the last two million years is a fascinating story of the effects of continental glaciation, occurring several times, and what has happened since then. It's the chicken-and-egg-which-came-first analogy. Were the streams cutting valleys through the plateau lavas before continental ice arrived, and the ice sheets simply honed them out to larger dimensions, or was the ice sheet solely responsible for their development? Betting says the drainage network was already in place. Post-glacial modifications of the landscape closes the ongoing chapters of the area's geologic evolution. Left in the wake of disappearing ice sheets were vast thin sheets of erosional detritus, some with rocks atypical of the local geology – so-called erratics, and lots of them, that provide clues to the thickness of the ice sheet(s). Above this zone of former ice cover a cold climate generated other frost-evolved features. In the valleys is the debris left in the wake of the disappearing ice sheets.

To conclude this introductory background, the day-by-day observations of geologic features of note are recorded.

Lorna Lake (Our drop-off to Camp One on the peripheral edge of the Dil Dil Plateau) - Big Creek Valley is obviously over-sized to the river now flowing in it. It is an out-wash plain of glacial origin with low flanking terraces that meet valley walls abruptly. Ascent of the valley slope led to capping Chilcotin lavas, two or three tiers, to our campsite on its surface.

Camp 1 to Camp 2 (Near Vic Lake, west edge of Dil Dil Plateau) - Chilcotin lava flows were covered by surficial litter, some granitic rock debris within it (from Mt. Vic area?). Surface drainage was poor in some flat areas, suggesting alpine permafrost was underfoot to impede percolation. Solifluction lobes on steeper surfaces with a turf cover, and stone stripes on slopes with rocky rubble cover, also suggest the presence of permafrost. Flat stony areas also had sorted stone circles. Solifluction lobes were well-developed at Camp Two (2329 m). "Rubble Mtn." (2797 m) opposite Camp 2 had a debris-covered glacieret in its northeast facing cirque. Plateau lavas on "Rubble Mtn." with a pronounced flexural down tilt to the north east, implied some uplift of Chilcotin Ranges to the west during the ice ages.

Camp 2 to Mt. Vic and Return - Mt. Vic is underlain by a granitic intrusive body, on which the summit slopes of Kingsvale volcanic (south-east ridge) and sedimentary (south slopes) strata sit. Vic Lake is dammed by a terminal moraine containing a high percentage of the granitic rocks (granodiorite); the moraine is quite flat on the surface, its boulders covered by "map lichen" (*Rhizocarpon* sp.), with thallus diameters of several centimetres. Growth to this size indicates that the moraine is quite old, possibly several thousand years, so the lake basin was likely present before the advent of the "Little Ice Age", which began only 400-500 years ago. Upslope from the lake a sharp-crested latero-terminal moraine indicates a glacier terminus during the Little Ice Age, the present ice terminus being a few hundred metres upslope from this moraine and itself partitioned by pronounced ablation in its névé zone situated between Mt. Vic and unnamed satellite peak one km due south. The latter summit also displays a rock glacier on its northeast aspect.

Camp 2 to Camp 3 (Dil Dil Plateau to Big Creek – Graveyard Valley) - A day of hiking on the lavas of Dil Dil Plateau, followed by a descent to a broad valley floor of gravelly alluvial deposits marked by a series of terraces, one to 7 metres high. Camp was on the highest terrace level in Big Creek valley. Some sand dunes were on the edge of the Dil Dil escarpment; most were stabilized by plant cover but there were a few fresh and recent blown-out spots.

Camp 3 to Camp 4 (Graveyard Valley to Tyoax Pass) - Gravel terraces flank each side of Graveyard Valley but were "squeezed out" in the narrow tributary, Tyoax, which was traversed to reach Tyoax Pass. This leg of the trip was almost exclusively through the Relay Mountain Group of sediments, dominated by conglomerates and "coquinas" of bivalve fossils, *Buchia* spp. The strata are repeated in several slices of thrust faults, trending NW-SE and dipping to the northeast. Fossils were so abundant it was impossible not to tread on some! Camp 4, just east of the highest point of the pass, lies below a small granitic intrusive which pokes through the Relay Group strata at the nearby summit of Mt. Davidson.

Camp 4 to Camp 5 (Tyoax Pass to Little Paradise Basin) - This leg began with a long traverse on scree-talus slopes of the strata in the Relay Mountain Group which was also the substrate for various permafrost features about the No. 5 campsite: frost mounds, solifluction lobes, and high-centred polygons demarcated by a peripheral moat. The contorted volcanic edifice above the camp was an elongated dyke, and according to the geologist (H. Tipper) is the probable feeder source to overlying Plateau (Chilcotin) Basalts, now stripped away by erosion. Nearby Mt. Cunningham has a summit of blocky dacite porphyry, apparently much older than the Plateau Basalts, being an Eocene-aged felsitic intrusion. Relay Mountain north of camp, which rises up on fine grained sediments of the Taylor Group, is capped by several tiers of flat-lying Plateau Basalts (Chilcotin Group). Apparently the Relay Mountain Group underlies the Taylor on this mountain but it was not readily obvious from our viewpoints.

Camp 5 to Camp 6 (Little Paradise Basin to Castle Pass) - Once beyond the upper slopes of Mt. Cunningham the dominant geology is the tiered lava beds on Castle Peak and Cardtable Mountain. The Relay Mountain Group of sediments underlies both mountains with its strata dipping to the southwest in stark contrast to the nearly flat and overlying Plateau Basalts. On Cardtable the basalts had a visible dip to the north and east in contrast to the flatter aspect on nearby Relay Mtn. So, again the flexure indicates mountain uplift to the southwest in post Plateau Basalt extrusion times. Nearby Fortress Mtn. (B.C. Topo Survey bronze plug #677, one metre below true summit height – elevation of plug, 2430 m) was a succession of at least 20 lava flows, a vesicular andesite/dacite (Plateau Basalts) overlying the strata of the Relay Mountain Group. A spectacular rock glacier spilled off its southern slopes, whereas the north side slopes were stepped with narrow benches developed by permafrost action, so-called "altiplanation terraces". About the campsite below, there was an abundance of solifluction lobes.

Camp 6 to Camp 7 (Castle Pass to Spruce Lake) - After marvelling at narrow Castle Peak's colanade of lavas and underlying Relay Mtn. strata (dipping NE), the descent of Rook Creek Ridge was on older Tyaughton Group strata, featuring two knobs of white recrystallized limestone. The lower slopes of the ridge were barren of significant outcrops and the valley bottom hike to Spruce Lake lacked geologic interest other than the high discharge flows of Tyaughton Creek. Boulders at the lake edge were brought there by the Cordilleran Ice Sheet about 15,000 years ago.

Camp 7 to Windy Pass to Camp 8 (Spruce Lake to Eldorado–Taylor divide) - The outstanding feature on the way to Windy Pass was the colossal spread of destruction by the previous winter's avalanche cycles. A meadow at tree line where we had camped in previous trips was engulfed in woody debris, and the creek at the base of Windy Pass ridge was re-directed by the debris and residual snow to the meadow as well. The air blast of the avalanche snapped subalpine firs adjacent to the trail located about 250–300 m from the base of the avalanche slopes. On the east side of the pass the trail was cut by a remarkable turf slide. The zone of initial collapse in probable over-saturated alpine soil was a few metres deep; its discharge ripped out thick mats of alpine turf to about 100-200 metres downslope of the trail, re-piling them in a haphazard festooned arc where the gradient lessened. Each matt was about the size and shape of a grand piano!

Camp 8 to North Cinnabar Basin (Tyaughton Lake via Camel Pass) - Camp 8 was on solid dark granitic rock (peridotite). Between the camp and pass, lenses of serpentinite showed up in stark contrast as low green elongate mounds, probably squeezed up from the underlying bowels of the earth's crust along fault zones. The "camel" at the pass is of the dark granitic rock, the Bob Harris Memorial bronze plaque attached firmly to it. The traverse from camp to pass to the rim of the North Cinnabar Basin was on the mixture of rocks within the oldest rock series, the Bridge River Group. Mine exploration activity had ceased at North Cinnabar Basin, no mercury minerals of quantity being found despite the name. The basin itself is a glacial sculpted cirque, possibly one of the local feeder sources for the Cordilleran Ice Sheet. Signs of more recent glacier presence were not revealed in the basin, but it was the scene of colossal avalanches over the previous winter. Fresh woody debris cluttered the creek bed and banks. The basin was otherwise quite smooth on the floor and walls, underlain by the Taylor Creek Group of easily eroded strata, providing prime terrain for alpine flowers.

FLORA

The list is by scientific name, followed by common name(s) and location. The arrangement follows the system used in Lyons and Merilees handbook on the flora of British Columbia and Washington.

Shrubs

- *Betula glandulosa* – shrub or dwarf birch: Dil Dil Plateau, Camps 1 to 2
- *Cassiope tetragona* – 4 angled mountain heather: Little Paradise Basin, Camp 5
- *Gaultheria* sp. – teaberry/wintergreen: near Castle Pass, Camp 6
- *Juniperus communis* – shrub juniper: Dil Dil escarpment, Rook Creek Ridge, near Camps 1 & 6
- *Kalmia microphylla* – swamp laurel: Dil Dil Plateau, Big Creek, Camps 1 to 3
- *Menziesia ferruginea* – false azalea: Cinnabar Basin Trail
- *Phyllodoce empetriformis* – pink mountain heather: Little Paradise Basin, Camp 5
- *Phyllodoce glanduliflora* – yellow mountain heather: Little Paradise Basin, Camp 5
- *Potentilla fructicosa* – shrubby cinquefoil: Dil Dil escarpment near Camp 1
- *Rhododendron albiflorum* – white flowered rhododendron: Cinnabar Trail
- *Salix arctica* – arctic/alpine willow: Dil Dil Plateau, Camps 1 to 2
- *Salix* spp. (several) – willows: Dil Dil Plateau and elsewhere in valleys
- *Shepherdia canadensis* – soopolallie: Big Creek, Rook Creek Ridge, Camps 3, 5
- *Spiraea* spp. (2 or 3) – hardhack/spiraea: Tyaughton Valley, Spruce Lake, Camps 6 and 7
- *Vaccinium vitis-idaea* – lingonberry: Windy Pass, Camps 7 to 8

Trees (Selected locations reported)

- *Abies lasiocarpa* – subalpine fir: Taylor-Eldorado basins
- *Picea engelmannii* – Engelmann spruce: above Vic Lake (2280-2300 m)
- *Pinus albicaulis* – white-bark pine: Little Paradise Basin, Taylor-eldorado divide, Rook Creek Ridge, Vic lake (2280-2300 m)
- *Pinus contorta* – lodgepole pine: North Cinnabar basin trail to Tyaughton Lake
- *Populus tremuloides* – trembling aspen: Tyaughton Valley floor

Flowers (White)

- *Achillea millefolium* – yarrow: Big Creek and Tyaughton Creek valleys
- *Anemone occidentalis* – western pasque flower: Big Creek-Graveyard Valley, Little Paradise Basin, Rook Creek ridge, Camps 3, 4 and 5 and Camp 6
- *Antennaria pulcherrima* – showy pussytoe: Big Creek-Graveyard Valleys
- *Arenaria* spp. – sandwort: Dil Dil Plateau, Camps 1 to 2
- *Astragulus alpinus* and/or *Oxtropis campestris* – white pea: Dil Dil Plateau, Camps 2 to 3
- *Cerastium* spp. – chickweeds: Dil Dil Plateau, Camps 1 to 2

- *Claytonia lanceolata* – western spring beauty: Castle Pass, Eldorado basin
- *Dryas octopetala* – white mountain avens: Dil Dil Plateau, Little paradise Basin, Tyoax Pass, Windy Pass, Fortress Mountain, Camps 1 to 2, Camps 5 to 6, Camps 3 to 4 and Camps 7 to 8
- *Erigeron caespitosus* – white fleabane: Dil Dil Plateau, Camps 1 to 2
- *Eriogonum* spp. – buckwheats: Windy Pass
- *Fragaria virginiana* and/or *vesca* – wild strawberry: Castle Pass, Windy Pass
- *Heracleum lanatum* – cow parsnip: Spruce Lake to Windy Pass
- *Maianthemum canadense* – lily-of-the-valley: Rook Creek Ridge, Camp 6
- *Polygonum* (= *Bistorta*) *viviparium* – alpine bistort: Windy Pass
- *Potentilla arguata* – white cinquefoil: Big Creek Valley, Windy Pass
- *Saxifraga bronchialis* – spotted saxifrage: Taylor Basin, Dil Dil Plateau, Windy Pass, Big Creek Valley Camps 1 to 3 and Camps 7 to 8
- *Stellaria longipes* – starwort: Dil Dil Pleateau, Camps 1 to 2
- *Valeriana sitchensis* – sitka valerian: Graveyard Valley

Flowers (Yellow)
- *Arnica chamissonis* – meadow arnica, wooly: Eldorado basin
- *Arnica latifolia* – mountain arnica: Big Creek Valley, Rook Ridge, Windy Pass
- *Astragulus(?) oxytropis(?)* – yellow legume, pea family: Dil Dil Plateau to Big Creek, Windy Pass
- *Balsamorrhiza saggittata* – arrowroot: east open slopes, Grant Creek, Rook Ridge, slopes above Tosh Creek
- *Chaenactis douglasii (?)* – false yarrow: Big Creek Valley
- *Crepis nana* – dwarf hawksbeard: Dil Dil Plateau
- *Draba aurea* – golden draba: Little Paradise Basin, Dil Dil Plateau
- *Draba paysoni* – paysoris draba, cushion form: Dil Dil Plateau
- *Hieracium gracile* – slender hawkweed: Dil Dil Plateau
- *Lilium columbianum* – tiger lily: Tyaughton Valley, N. Cinnabar Trail
- *Pedicularis bracteosa* – bracted lousewort : Dil Dil Plateau
- *Potentilla diversifolia* – diverse-leaved cinquefoil: Dil Dil Plateau
- *Ranunculus* cf. *eschsholtzii* – subalpine buttercup: Tyoax Valley near pass, Little Paradise
- *Sedum* cf. *divergeus* – spreading stonecrop: Big Creek Valley, Dil Dil Plateau, Windy Pass
- *Senecis streptanifolius* – Rocky Mtn. butterweed, paddle-shaped leaf: Rook Ridge
- *Soldiago multiradiata* – northern goldenrod: Rook Ridge
- *Taraxacum ceratophorum* – horned dandelion: Dil Dil Plateau
- *Taraxacum officinale* – common dandelion: Big Creek Valley, Eldorado basin

Flowers (Purple)
- *Arabis(?) lyalli* – lyallis rockcress: Upper Paradise Creek basin
- *Astragulus alpinus* – alpine milk vetch, purple legume: Dil Dil Plateau to Big Creek
- *Cirsium edule(?)* – Indian thistle: Big Creek Valley
- *Delphinium glaucum (?)* – tall larkspur: Tyaughton Valley floor, Windy Pass valley and pass
- *Epilobium angustifolum* – fireweed: Big Creek, Graveyard Creek, Windy Pass Valley
- *Epilobium latifolium* – broad-leaf willowherb: Windy Pass
- *Erigeron peregrinus* – subalpine daisy: Dil Dil Plateau
- *Pedicularis langsdorfii* – Lansdorf lousewort: Dil Dil Plateau
- *Pedicularis ornithorhyncha* – bird-beak lousewort: Dil Dil Plateau
- *Penstemon procerus* – small-flowered penstemon: Dil Dil Plateau, Rook Ridge
- *Phacelia sericea* – silky phacelia: Dil Dil Plateau, Windy Pass
- *Polemonium pulcherrimum* – showy jacobs ladder : Dil Dil Plateau, Rook Ridge
- *Veronica wormskjoldii* – alpine speedwell: Dil Dil Plateau

Flowers (Blue)
- *Astragulus alpinus* – alpine milkvetch, bluish white pea: Windy Pass Tyaughton Valley
- *Campanula lasiocarpa* – mountain harebill: Dil Dil Plateau

– *Hackelia micrantha* – false forget-me-not: Big Creek Valley to Dil Dil Plateau
– *Lupinus arcticus* – arctic lapin, blue to white: Big Creek Valley, Spruce Lake;
Note: *Lupinus lyalli* – dwarf alpine form may have also been present
– *Myosotis alpestris* – mountain forget-me-not: Dil Dil Plateau, Windy Pass
– *Phlox diffusa* – spreading phlox: Windy Pass Valley

Flowers (Red-Orange)

– *Antennaria rosea* – pink pussytoe: Windy Pass
– *Aquilegia formosa* – red columbine: Tyaughton Valley floor
– *Artemesia norvegica* – mountain sagewort: Eldorado basin
– *Castilleja hispida* – harsh paintbrush: Eldorado basin
– *Castilleja miniata* – scarlet paintbrush: Big Creek Valley, Graveyard, Rook Ridge
– *Castilleja rhexifolia* – alpine paintbrush: Rook Ridge
– *Melandrium (Lychnis)* sp. – bladder campion: Windy Pass, Big Creek Valley
– *Oxynia digna* – mountain sorrel: Dil Dil Plateau, Fortress Mountain summit
– *Sedum roseum* – roseroot: Dil Dil Plateau
– *Silene acaulis* – moss campion: Dil Dil Plateau, Windy Pass

Flowers (Green)

– *Veratrum viride* – Indian hellebore: Eldorado Basin

Flowers (Pink)

– *Deum triflotum* – deum: Big Creek Valley

Lupins near Camel Pass. Photo: C. MacMillan.

MAMMALS (Chief of Spotting: Dave Scanlon)

July 14 Gun Creek Campground – Tyax Lodge – Lorna Lake – Dil Dil Plateau Camp 1: Black Bear – 1 on road near turn-off to Tyaughton lake Road (Highway 40); Elk – 2 en route to Grant Creek crossing on east side of Big Creek; Grizzly bear – 1 also east side of Big Creek opposite Sluice Creek jct.

July 15 Dil Dil Plateau Camp 1 to Dil Dil Camp 2: Black-tail deer – 7, all seen before reaching the half-way point between camps; Rocky Mountain Goat – 1 on "Rubble Mtn." NE side; Grizzly bear (tracks only) on summit snow bank of "Rubble Mtn." (Pk. 2793 m).

July 16 Dil Dil Camp 2 to Mt. Vic summit (via Vic Lake) and return: Wolves – 2 at Vic Lake heading past outlet and down valley (a.m.); Whistling marmots – several in Vic Creek Valley; Black-tail deer – 2 above lake, cirque floor east side of Mt. Vic.

July 17 Dil Dil Camp 2 to Big Creek Camp 3: Black-tail deer – 2 east of Camp 1 on Dil Dil); Rocky Mtn. goats – 2 on north-west ridge of Dash Hill; Black-tail deer – 1 valley floor (Tosh Creek flats).

July 18 Big Creek Camp 3 to Tyoax Pass Camp 4: many Whistling marmots in Graveyard Valley; Wolf tracks, Elk tracks, Deer tracks in Graveyard valley; California sheep, ram skull in Tyoax Creek Valley.

July 19 Tyoax Pass Camp 4 to Little Paradise Hat Trick Camp 5: Whistling marmots – many in Camp 5 area.

July 20 Hat Trick Camp 5 to Castle Pass Camp 6: Black-tail deer – 2 north-west of Castle Pass, west side of creek valley; Whistling marmots throughout upper Paradise Creek basin and at Castle Pass camp (many).

July 21 Castle Pass Camp 6 to Spruce Lake B.C. Parks Campsite 7: Grizzly bear – 1 just below Camp 6; deer tracks; California bighorn sheep tracks on Rook Creek Ridge.

July 22 Spruce Lake Camp 7 to Taylor Divide Camp 8: Northwest chipmunk on Windy Pass Trail, west side; Elk tracks – large herd crossed snow bank SE of Windy Pass; Whistling marmots – both sides of Windy Pass; Douglas squirrels – both sides of Windy Pass, below tree line.

July 23 Taylor Divide Camp 8 – Camel Pass – N. Cinnabar Basin – Tyax Lodge: Grizzly bear tracks in upper Taylor Basin.

BIRDS

July 14 Tyax Lodge – Big Creek Valley - Dil Dil Camp 1: Swainson thrush; Barn swallow; Tree swallow; Pine siskin; American crow; Yellow-rumped warbler; American robin; Warbling vireo; Western tanager; Orange-

crowned warbler; unidentified woodpecker; Song sparrow; Common loon; Raven at Lorna Lake; Clark's nutcracker in Big Creek Valley; Northern flicker at Teco Lake; Spruce grouse with 4 chicks near Teco Lake; Greater yellowlegs at DD camp; unidentified song birds.

July 15 Dil Dil Camp 1 to Dil Dil Camp 2: American pipit – several on plateau and one on Rubble Mtn., Rufous hummingbird – 1; Clark's nutcracker – 1.

July 16 Dil Dil Camp 2 to Mt. Vic and Return: American pipit – several; White-tailed ptarmigan – 2 broods and 3 others; Spotted sandpiper at Vic Lake; Gray-crowned rosy finches – 4 on Mt. Vic.

July 17 Dil Dil Camp 2 to Big Creek Camp 3: American robins – 2 near Camp 1; Rufous hummingbird – 1; Clark's nutcracker in Big Creek Valley; Northern flicker at Camp 3.

July 18 Big Creek Camp 3 to Tyoax Pass Camp 4: Barred owl at Camp 3; Spotted sandpiper – 2 at Graveyard Creek ford; Woodpecker sp. at ford; American robin; Chickadee sp.; Clark's nutcracker; Hermit thrush; American pipit at Pass.

July 19 Tyoax Pass Camp 4 to Little Paradise Camp 5 (Hat Trick Mtn.): Clark's nutcrackers; Barn swallow; Northern Goshawk; American pipits; American robins.

July 20 Hat Trick (Little Paradise) Camp 5 to Castle Pass to Camp 6: Rufous hummingbird at Camp 6; Raven – 2; Gray-crowned rosy finch; American pipits; Junco; Sparrow sp. (not Fox, Song, Savannah, W/C, G/C); Townsend's solitaire.

July 21 Castle Pass Camp 6 to Spruce Lake B.C. Parks Campsite 7; Clark's nutcracker – on Rook Creek ridge and in Tyaughton Valley; Townsend's solitaire – 2; Swainson thrush – 1; Dark-eyed junco – 1; Purple finch – 1; Unidentified buteo sp. hawk; Warbler sp.; Hermit thrush in Tyaughton Valley; American robin at Spruce Lake; Gray jay at Spruce Lake; Raven – 2 at Spruce Lake; Common loon – 2 on Spruce Lake.

July 22 Spruce Lake Camp 7 to Taylor Divide Camp 8: American robin; Clark's nutcracker and on Windy Pass Trail and Pass and Camp 8; C. Raven – 2; Common loons – 2; Song sparrow; unidentified woodpeckers; Bald eagle; Gray jay – 2; Winter wren – 1 and 1 on Windy Pass Trail; Dark-eyed juncos, and at Camp 8; Steller's jay – 2; Golden-crowned kinglet – 1; Hermit thrush on Windy Pass Trail and at Camp 8; Towhee; American pipits at Pass; Golden-crowned sparrow east of Pass and at Camp 8; Pine grosbeak near old cabin in upper Eldorado basin.

July 23 Taylor Divide Camp 8 to Tyax Lodge on Tyaughton Lake: Clark's nutcrackers, and at Camel Pass and Cinnabar Basin; Juncos – 2 and in Cinnabar Basin; American robin; Mountain chickadees – 1; Hermit thrush; Sparrow sp.; Fox sparrow south of Camel Pass; Rufous hummingbird – 11.

Northern Coast Mountains

Mt. Logan, May, 2010

David Scanlon

Now what? It's over, so, now what?
Well at least it is physically over. Well no, that isn't right either as it will take quite a while to get back those 8 lost kg. Mentally many things were going on also. Too many as a matter of fact. It seems as though I was just a spectator at a movie and was watching others on a far away mountain climbing, skiing, carrying heavy loads, gasping for at least a bit of air for their empty lungs, body straining for just a bit more energy to go just a little bit farther. And having to deal with the seemingly never-ending cold at those higher camps. In talking with others that have been on big trips like the one just past, I've been told that I have what is called 'post trip syndrome'. Where, having been with the same people for an

extended period of time in extreme circumstances, under duress, in a hostile environment, the coming back to civilization is somewhat of a shock and that it takes time to adapt. I find myself still wanting to be back there with them, still struggling together, being together. No offence to my wife Donna. This too shall pass. Tomorrow will be 7 days being home and each day is better as I tear back into the previous day-to-day life - dealing with the family, shopping, the bills, and working on odds and ends here in our townhouse complex.

So all of those months of planning, preparation, and bending the credit card a lot in getting all of that new gear has come and gone. The time has come to get up and go!

May 8 was packing day for me as the excitement started. In picking up Diana the next day I found out that she had a bit more gear than anticipated so I had to get into my pleading, begging mode big time with my wife asking her if we could switch cars as hers was bigger. She said that it would be all right, so we then packed our gear into Donna's car. Diana and I had the time, so we decided to drive together to Whitehorse as it was to be about half of the price of flying that the others were doing. An awesome drive filled with wildlife and scenery to die for - 11 bear, 1 fox, 3 cariboo, and 2 moose were spotted. We didn't know how many saw us.

Being the BC (Cheap) MC members we were, Diana and I stayed in our tent on an out-of-the-way logging road for 2 of the nights on the way up to Whitehorse. After meeting with the other 4 of our group in Whitehorse, we did some final shopping for some odds and ends we needed and were then ready to go. So the next morning, Friday the 14th, the limo arrived and was loaded with all of the gear for our 4 friends to take them to the airfield at Silver City. I don't know how it all fitted in but it did. And I did say limo, folks. Those guys decided to go in style.

Away we went. Next stop was the bakery in Haines Junction for a last decadent bun and coffee, then a stop at the wardens office to get our airplane landing permits and Kluane Park permits for each of us sorted out. Then we finally arrived at Silver City. A city? It is really a misnomer to call it a city as there were only a few scattered buildings around that were being used when we arrived. The main buildings were for the Arctic Institute of North America and all of the summer students who come every summer to study. There were also some houses for the few who lived there. Many scattered abandoned buildings were also present, as the north gives people dreams to build on, and in many cases also takes away their dreams. They then just walk away leaving everything behind. We did some exploring, looking around some of the deserted places wondering where the past inhabitants were now and what their stories would have been. What adventures they had while in this far-away place.

We arrived. We unloaded and got acquainted with our surroundings. Lance came to give us the tour of the place - where we could sleep, get our water, where the outhouses were, etc. We learned that there were 2 guys ahead of us waiting to fly in, as well as a group of 7 French military climbers waiting to get onto the east ridge route, so we might have a wait ahead of us. Gerry found out that they were all very experienced climbers and were there to do a military-type documentary for recruiting volunteers - a nice job if you can get it. To get paid to climb around the world is everyone's dream.

The French group had so much gear they had hired a helicopter to fly it all in - two sling loads in all. Then after flying it all in the weather turned bad and they found themselves with no gear as it was then on the mountain! So they had to go into Haines Junction for a place to stay for the night. They did get on to the mountain the next day, though.

We hung around Saturday, and went into Haines Junction to get some groceries, have a pop or two or three, and walk along the beach by the lake - just killing time. Then Sunday morning came and Andy Williams woke us up with a smile saying that the weather was fine and we were flying in soon, real soon, so get up and get ready. So the scramble was on, especially for Bob and me, as we were the first to go. Our gear was quickly loaded and Bob and I were up and away.

What a flight it was! I still say that the area should be renamed the St Elias Sea! Nothing but ice and snow as far as the eye could see - islands of mountain tops jutting up out of an ocean of ice. What a fantastic place! After an hour we made a turn and came in for a landing. The plane was unloaded, then left, and we were alone in our solitude. One of the things about that place was the isolation. It was

Kaskawulsh Glacier seen on the flight in. Photo: G. Kollmuss.

Drop-off on the Quintino Sella Glacier. Photo: G. Kollmuss.

something mentioned often in the warden's information package. An hour's flight to just get to base camp. In other words you had better be self sufficient as there is no immediate help should you need it. The immensity of the place has to be seen to be fully realized. One would think that to get from here to there would involve only a short walk. That would not happen as the distances are very deceiving. Then, as time passed, the plane came and went, the others arrived, and we got base camp set up and gear organized. Two other people were there already - an Austrian couple. They were going for their second attempt having failed the first time. We wished them luck as they left for their camp 1. Shortly after we were all together, the plane came again leaving two Japanese Canadians - Yuri and Hiro. They packed up their gear and headed directly up to camp 1 with the plan of acclimatizing there for a day - just another way of doing things.

Our first day started with us making our first carry of gear to camp 1. The route was fairly straightforward, angling upwards through a huge crevasse field following the tracks and wands of other groups that were ahead of us. The altitude of our base camp was about 2700 m and camp one at 3350 m. It may not seem like much elevation to get from one to the other but us lowlanders coming from sea level did feel the altitude a bit as our pace was fairly slow. Maybe not slow, as much as regulated. We weren't going to win any races on that trip! The plod began. -8^{0}C. The next day we moved up to camp 1.

Some snow was falling that morning and visibility was poor and as it was early in our trip we readily agreed to have a rest day. With the solar radiation coming through it went up to plus 19^{0}C inside our tents. Little did we know that this would be the last time for the next 3 weeks to have this high a temperature. Little did we know that later we would experience -19^{0}C and lower. That night it went down to -18^{0}C

Skiing to camp 1. Photo: R. Jaksic.

The snow and poor visibility turned out to be only a one day thing so we carried our first load up to camp 2. We did have company before leaving though as two Italians came down. They said that they did summit and looked very competent. A couple of big strong guys in one piece suits with sponsor stickers on them - quite impressive. We met others that day - a father and son coming back down as we were going up. The son had fallen into a crevasse and injured a shoulder, ending their trip. Dad was doing yeoman's duty in handling all of their gear and both of their sleds himself. The sons shoulder looked sore and he was skiing with just one arm - the second instance of us encountering someone falling into a crevasse so far!

Some of us found the going harder than others, but we got everything up to where we wanted. The ski back down to camp one was one of the best of the trip. Fun! And no packs!

Next day was our move to camp 2 at 4000 m. An uneventful day. The days had been consistently the same - sunny and warm for a few hours in the afternoon dropping down to about -14^{0}C or so at night. We had been blessed so far with good weather.

And then the grunt, and the most technical part of the trip began as we started carrying loads up a steep 550 m slope. No skiing there - just moving up that slope one slow step at a time in our crampons. Then angling to the left walking just beside a large crevasse, stepping over a couple of smaller ones, then a right turn over a snow bridge. Looking down on our left from there we could see the valley far below us

Heading to camp 2. Photos: G. Kollmuss.

Terrain between camps 1 and 2. Photos: D. Diaconu (left); D. Carey (right).

Camp 2 at King col. Photo: D. Diaconu.

Looking west from camp 2. Photo: D. Diaconu.

through a hole, and on the right side was nothing but darkness - a huge, dark, forbidding crevasse. The snow bridge looked substantial. We knew that others had crossed it, and we hoped it would stay there for us. But there was always that little nagging doubt in the back of our minds. Then we had to make a rising left turn topping out on a fairly level area. On our right, a short distance away was another huge hole in our way, but, where we were passing, it was filled in and we continued over it safely. After 3 carries we went on up to our camp 3 at 4150 m. Getting the rest of the way to camp 3 was uneventful as far as anything technical. We did, however, go through an icefall, route-finding

Heading to camp 3. Photos: G. Kollmuss (top); D. Diaconu (bottom).

through the blocks of ice to our camping spot. The ice fall was keeping the area passable as it filled up the large crevasse that would otherwise have blocked the way. Sort of the good with the bad.

We arrived at camp 3 fairly early so, having time after setting up camp, Dan and Gerry and I went on up to scout out our route for the next day. It appeared fairly straightforward, going around and over some small 20 – 25 cm wide slots, with a small short section of side hilling thrown in just for fun. And we had our first look at Prospector Peak and the col leading to what was to be our camp 5 on the far side. This was very exciting for us! It was almost like seeing our final destination for the first time. We left some wands to mark our way for our carry the next day and went back to camp.

Camp 3 with King Pk. (top and middle) and Mt. St. Elias (bottom) beyond. Photos: G. Kollmuss (top,bottom); D. Carey (middle)

Just after leaving camp for our carry we looked back and saw 4 snowshoers approaching our camp where they left their food cache. We later on found that they were 4 army guys from our Canadian forces. We'd meet them later.

Looking west into Alaska from near camp 3. Photo: D. Diaconu.

Unbeknownst to us, the next day was to be a day to remember, or, one to try to forget, depending on where you were. Before starting out that next day there was a small debate as to whether or not to rope up for our carry. We agreed to do the right thing and roped up. I was again leading as we carried our packs with a load as well as pulled our sleds. The first short while went OK, going over the slots and the uphill side hill section. We started to have a very hard time pulling our sleds and crazy carpets on the wind crusted snow and ice as they were pulling us all down hill and sideways. That was when I thought, OK, I'll just cut the next corner a bit and not go around the next flag to make it easier for us. I'll always remember that next moment. I went to plant my right ski pole and wondered why it didn't stop going down, I remember looking down seeing

a hole where it had pushed through the snow and seeing nothing but black and wondered why it had happened. These thoughts all went through my mind in a flash. The next thing was that I was hanging at the inside edge of a crevasse by both of my arms, one on each side of it. It was just wider than me. I also remember thinking. Oh shit! Oh shit! What just happened? This was to have been a safe route! Other groups had passed much closer to the open end of the hole than us safely! Why? Why? Why?

Heading to camp 4. Photos: G. Kollmuss.

I didn't time the event but was told afterwards that I was inside that hole for nearly an hour. It was just wider than me, and bottomless, going down into blackness. When I was finally pulled out I was SOO cold! I just could not stop shaking. I couldn't even hold on to a drink. Ever wonder what you would think of if you were hanging on a rope, inside a crevasse, for an hour? You realize that the others on top can't hear a thing you say or yell so there is no use even trying to communicate unless someone is right there at the edge to hear you. So your thoughts are for you only. Looking down: all there is to see is the blackness of the bottomless hole. No walking out of this one! I thought of home, Donna my wife, my kids and grandkids. Strangely enough I even thought of my parents who have been gone for quite a few years now. Dying entered my thoughts. But only as an afterthought as it seemed totally unreasonable to even try to comprehend it.

Camp 4. Photo: D. Carey.

6 m down, full pack on, skis still on my boots, sled in on top of me. Didn't lose a thing. Went in with all of my gear and came out with it all. And no injuries either. I did get on my knees after getting out to thank God. Just a few kind words for Him. And just a reminder to myself that from now on to think, rope up stupid! After getting myself together we carried on for a few hundred meters and stopped for the day leaving our sleds until the next day. We went back to camp.

Next day we went in two rope teams intending to get to camp 4 for a day's work getting our first carry in. It would be our last camp that side of Prospector Col and our camps were really starting to get high. It was at camp 3 that I had to start taking diamox as my pounding headache from the altitude just would not quit. I was pleased that I was able to arrive at camp 4 without a headache. With the diamox the headache went away and I felt fine again and didn't have any further altitude problems for the rest of the trip. I mention this as Bob was on my rope and he was starting to have a lot of trouble getting his breath, even though he had been taking diamox for a few days. His pace was so very slow that the other rope team eventually got out

At Prospector Col. Photo: G. Kollmuss.

of sight of us. After getting over 2 hours behind I finally said that we had to stop and drop our loads. Bob was really struggling then and I was really concerned for him. So Diana, I, and Bob all stopped and cached our gear to be picked up the next day.

Back at camp we all had started supper while Bob went and tried to feel / get better in the tent by lying down and resting. The conversation in the cook tent centered on Bob's progress, or rather the lack of it. Sorry to say he wasn't doing well and try as he might he couldn't get his breath or keep up. In our pre-trip meetings all different kinds of scenarios were talked about and what to be done in each. This was one of them. It was clear that Bob couldn't keep up or carry on, trying as hard as he was. So I had the unenviable task of telling him that he had to think of going down and leaving the group, the reality being that things were going to get harder, not easier. That was one of the most difficult things that I have ever had to do and it sucked big time.

Option 1 was to have 2 or 3 of us go down with him and return and carry on. That would take a couple of days at the very least. And what would the others do? Wait, carry on? Option 2 was an iffy thing as we thought of asking a guided group if Bob could go down with them. The guided group was the Canada West Mountain School from Vancouver. We had passed them just the day before and they would be passing us on their way down the next day. If that wouldn't work, well, we'd deal with that if and when it occurred.

Next morning we got up and Bob readied himself to go down when the guided bunch arrived. They came and we introduced ourselves and asked if Bob could go down with them. The guides asked the clients and they said it was OK. There have very few days in my life that I felt as I did at that time - weeks and months of planning together, only to have to split up. We said our goodbyes. As I looked around I was not the only one with tears. So Bob lifted up his pack, tied in, and was gone. And there was silence.

We packed up and did our carry to camp 4 at 5300 m. From here we had an unobstructed view of Mount St Elias. It is quite an awesome mountain, being around 5500 m. It looked to be so close but once again the distances were deceiving. It was over 40 km away over the massive sea of ice known as the Seward Glacier.

Camp 5. Photo: D. Diaconu.

Day 14 and it was off to camp 5 with sunny days still guiding us. It had only been -20^{0}C the previous night -not too bad. Prospector Col was further than we thought, or were we starting to get a bit worn down with the attitude. It was quite a slow grunt to get there. We had a bite to eat and looked for the route to our next camp and saw 2 lonely figures coming our way. It was Yugo and Hiro, our Japanese friends. They were beat having hung out in a storm for a few days and going the wrong way on their first summit try, They then got more supplies from the Canada West Mountain group and were able to stay and try for a second attempt.

View from near camp 5 north to Mt. Walsh. Photo: D. Diaconu.

We carried on over the col at about 5800 m and down the other side. And it was soon after that our first mistake in route finding was made. We were following a GPS route from someone else and up to there it had been accurate but that day it wasn't. We were quite a way

off route when the mistake was found out and it cost us a lot of energy to get back to where we were supposed to be. It was an exhausting day. When we finally got to what was to be our camp 5 it was straight into our tents and to sleep.

High camp night 1 - another -20^{0}C night. I could not get warm. I just couldn't. It didn't matter what I did and all night I shivered, constantly checking my feet to see if I could still feel them. It was a very disconcerting night. I found out the next morning that Dan was in the same shape. We guessed that our bodies were more tired than we thought and we were getting concerned. It was then day 15.

The next day was a rest day and we really needed it. To be cold and shivering was so exhausting. Shivering also takes up a lot of energy so that even at night while shivering we aren't getting any rest as our bodies were working all of the time.

High Camp night 2 - we called out for a weather report and it was good so the next morning we went for the summit. It was slow going. Step, take 3 breaths, stop, step, take 3 breaths, repeat. And up we went. Then it became really slow, taking 4 breaths between steps. It got steeper so it was time to put on crampons. As I stood up I almost fell over with the head rush from the altitude. The wind was slowly getting stronger the higher we went. There was some cloud but not too bad so we went on. Steeper again with a bit of route finding around some rock formations, finally up onto a small plateau where we huddled behind a small rock formation for a bit to eat. It was cold and windy and cold - very cold and windier too, with more clouds coming in. I had all of my clothes on (expedition long johns, a farmer john 1 piece set of long johns over that, down lined ski pants over that, Intuition liners in my boots, -40 below over boots over them, a long sleeved jacket , over that my down parka, and my Goretex jacket over all of that, and Alti Mitts) and was still cold. Gerry told us later that it was -37^{0}C when he checked.

Heading towards the West Pk., seen behind Dave (bottom). Photos: D. Diaconu.

Up a ridge, along a small plateau with Gerry, the strongest, out in front when the rest of us came together and stopped. Some of us couldn't see as our glasses were freezing up, we were freezing - enough was enough. I was pulling ice off of my cheeks where the snow was sticking and freezing. So we motioned for Gerry to come back. And as we looked at him for some reason he just sat down. He got up and came slowly back to us. He explained that one leg went into a slot - he didn't just sit down. The discussion was very short about what to do next. We had to go down. The sharp jutting peak that we could just make out through the snow was Mt Logan's West Peak. Gerry said that we were about 13 m below it. Oh so very, very close, and as they say, so very far away. So very tempting but we would have been crazy to have even tried it. We went down.

High Camp night 3 - that night it became windy with snow. The next day we built walls - big walls, high walls. They were made thick to stand up to the wind which was gusting to 60 km/hr holding steady at 50 km/hr. We anchored our tents with everything we had as the wind was relentless. Then during a lull we had surprise. Visitors - 2 of the army guys from their camp below ours came to visit us. The previous day they had made their summit attempt like us, but not getting much closer than us. They took a different approach, going low and trying to get high later on. They asked if we had any weather forecast as their sat phone wasn't working so I called out and it didn't look promising, but it could have been worse. They decided that, based on the forecast, they were leaving in the morning. We decided likewise.

High Camp night 4 - it was a bad night as the wind kept on blowing with intermittent big gusts. They kept waking me up. It was -37^{0}C again the next morning. We were supposed to leave so I packed some things before going out to the cook tent. I didn't really expect the cook tent to be there as it was so high

and it was really catching the wind. Surprisingly it was still there. It was partially buried and that might be part of the reason why it stayed up. My tent was really covered as were the others and I had to dig my way out into a blowing maelstrom. I couldn't look into the wind as it was blowing so hard, and the snow was stinging my face. So into the cook tent I went to catch my breath before starting to dig it out. Others crawled out and helped to dig and then we ate. After a long debate we decided to stay put and not try to get out that day as we didn't have to because our fuel was still ample enough for a couple of more days - just ample enough. So we dug out again.

High Camp night 5 - same as night 4. The next day we had food enough but fuel was starting to get low. The weather was no better and the debate started - to go or to stay and wait hoping for better weather one more day. We did pack up to go and then everything just stopped and the debate continued. Stay or go. We voted. Time passed. I finally said - go. There were 2 things that made me say to go. One was the fuel. The other was the weather. It could get worse, keeping us here for a long time so to go, even in bad weather, seemed the lesser of both evils. The army guys had gone the day before and we passed their camp going off into the storm. It was hard, really hard. Gerry was the leading figure, constantly checking his GPS keeping us on route. I was having the hardest time ever. With Bob gone I was carrying the whole tent and all of my food and it was catching up to me big time. Gerry at one point made direct eye contact with me saying that he and Dan would help me carry the tent. Thanks guys. Prospector Col was finally passed and we started down. Blessed be the down, except for the falling down that is.

We were still in poor weather with no visibility and the first thing that happened was that we were all falling because we couldn't see anything. There was a wind crust and the sleds and crazy carpets were all over the place pulling everyone down. What a mess. Each of us was unable to help anyone else as we couldn't even help ourselves. After mulling and stumbling around for a time we finally came to a less steep section. Gerry had taken off his skis and we all did, as booting it down was the easiest thing to do at that point. At one point Gerry sat on and rode his sled down to camp 4. It was then 11:30pm. Exhausted, we dug out a place for the tents and, without eating, crawled straight into our sleeping bags.

The next morning we arose, packed up in the still bitter cold and left for camp 3. No breakfast, and with just a mouthful of water left off we went - just to try to get out of that bitter wind and down. We picked up Bob's food and gear stash on the way and continued down to camp 3. Finally out of the wind and cold we fired up the stoves and had some soup. The going was hard, trying to control the sleds as they wanted to just fly straight down pulling us all over the place. It was really hard to hold them in check.

Serac collapse avalanche into King Trench. Photo: G. Kollmuss.

Another day came and we went for camp 2. This was to be another memorable day where we had to descend that long steep slope. We did two carries taking the sleds first over the twisting crevasse-laden route to where they would be anchored to be lowered later. On the second carry Dan was second last and Gerry last when I heard Gerry yell that the sled between him and Dan had fallen into a crevasse! What! Something else we didn't need! After much work they finally got it out. We then had to go back over that crevasse to get our packs and then again get back down one more time. We had to jump it. It was a big hole too, going a long way down. After my time in a hole on the way up it took real willpower to force myself to jump

Looking down King's Trench from above camp 2. Photo: G. Kollmuss

over it. The first time going up was bad enough but going back down with full packs was even scarier with the extra weight. But the snow at the edges held and we made it without incident. What we did next was to set up an anchor and lower our sleds. Two 60 m ropes and one 30 m rope were tied together and the sleds were lowered as far as they reached. Then another anchor was set up and everything was then lowered to the valley floor. Down at last! What a huge relief to finally have the hardest part behind us. And we ate!

The weather was good again. The air was heavy and sweet after so long at altitude, and we slept without the wind and it wasn't so cold. Just one more day to get down - just one more. From camp 2 to base was accomplished without too much ado, but one thing that was apparent was that since our ascent 3 weeks previously many crevasses had opened up. It was quite an eye-opener to see that we had crossed so many on our way up and not roped up at that. But we did get down safely, going as fast as we could for the last 2 km to base to try to impress the 3 people who were there.

Base camp – finally! And we were safe and well. AND then there was our cache of food and goodies! A couple of the group started to put up the tents but I got into the food. The heck with the tent, I wanted food. Lots of food! I opened up some goodies, while the others watched and they quickly started in on all of our goodies also. The heck with the tents! Salmon, crackers, cookies, all kinds of goodies, including some brandy. What a sight we were. All crowded around the pile of food from the cache, on our hands and knees just gorging ourselves, eating with our fingers, drinking, all the while laughing for just the hell of it, releasing much of the tension from the previous 3 weeks. We were pigs and we were loving every minute of it.

Left - Gorging on basecamp food; above - Gerry, Dave, Dan, Diana, and Radmila about to leave, posing with their pilot, Donjek (3rd from left). Photos: G. Kollmuss.

The next day with good weather the plane came, and we left. One last night in Whitehorse and then home we went.

The contestants in this tale were - Radmila Jaksic, Gerry Kollmuss, Bob Woodhouse, Diana Diaconu, Dan Carey, and David Scanlon.

Columbia and Rocky Mountains

The Holmes Apland – Mt. Robson Park Traverse, 30 July – 6 August, 2010

Karl Ricker and Michael Simpson

In the late spring of 2010 I received a call from a charter member of the legendary Grizzly Group (Sandford, R.W. 2002. Once upon a mountain – the legend of the Grizzly Group. Alpine Club of Canada, Spec. Pub. prepared for the Mountain Guides Ball). A band of middle-aged men, who live in Calgary and the foothills of the Canadian Rockies, and have had a life-long quest of companionship in alpine endeavours which began in about 1972/73. At that time it was a group of four: Mike Simpson, Don Forest, Gordon Shruggs and Glen Boles. After five years of intimate alpine ventures, they added Leon

Kubbernus, soon to be followed by Lyn Michaud, and in the 1980s two others joined the gang. The name, Grizzly Group, remained because in one of their earliest trips, they had a confrontation with a grizzly bear, and in later years their aging faces generated a healthy hirsute appearance after finishing week-long trips. Their climbing covered the Rockies from Mt. Cleveland, in Glacier National Park, Montana, to as far north as Mts. Ida and Sir Alexander (each 2nd ascents), near Tumbler Ridge, B.C. They also went westward into all four ranges of the Columbia Mountains, and also visited the eastern side of the Coast Mountains on two other trips. Not only are there summer expeditions, they also have winter camps, primarily in the Columbias, with Wells Gray Park being the recent favourite area to ski tour.

Almost all camps, winter or summer, were accessed by helicopter or rarely with pack horses. They camped in relative luxury, with full regalia to set up a luxurious base that included a kitchen tent or fly, usually a Coleman stove, steel frying pans, folding chairs, and the requisite fluids, of course. In recent years, they have set up camps in the relatively unknown ranges of the central Rockies between Mt. Robson Park and Mt. Sir Alexander, which eventually generated the idea of forgetting about a helicopter assisted base camp and focusing instead on an overland traverse of the high country from B.C. into the northwest corner of Jasper National Park. Perhaps my southern Chilcotin Ranges treks persuaded a change of format to a light-weight gear-ladened, multi-day traverse. By the turn of the century, the Grizzly Group was reduced to five members, two having passed away while another, Glen Boles, now fully retired, is focusing his energies on amazing alpine artwork. Of the remaining five, three wanted no part in a multi-day backpack. So the ranks were bolstered by adding family members of Mike's and Lyn's families, plus the addition of a pair of keen Lake Louise ski patrollers, and myself.

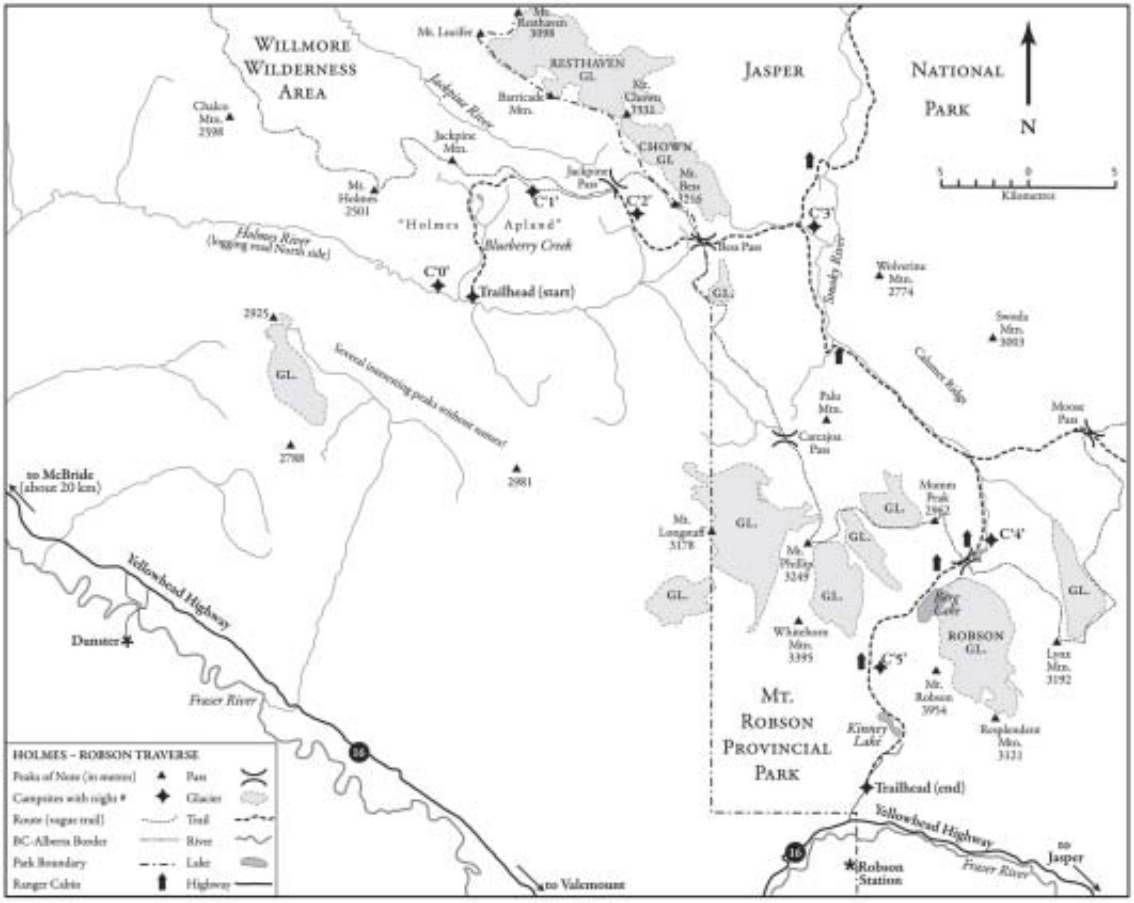
Several of the group had only 6 days available for trekking, and so the mountaineering had to be skipped despite the rugged traverse around the sides of Mt. Bess. Jackpine Mtn. was another possible climb, and we were looking straight at Mt. Chown for the first three days of the traverse. Mike and Lyn had attempted the latter and have completed ascents of several others as shown on the map on P. 129 in previous trips. The Grizzly Group is also known for their natural history observations on many a trip; I came prepared to add my assistance on these endeavours. So, in the reporting of this trip Mike has prepared the day-by-day narrative, and Karl has compiled the natural history notes, with the day-by-day assistance from Mike and Lyn in the observations. Admittedly, we could have done a more thorough job, but as usual the hand lens and authoritative flora guides were left at home!

The party at the Apland high point, looking NNW to Mts. Lucifer and Barricade. Photo: The party.

<u>The Journey – Holmes/Robson Traverse</u>, by Mike Simpson

For many years the Grizzly Group of the ACC has climbed and hiked extensively in and around this area. The backpacking trip from Blueberry Creek on the Holmes River to Robson Park links together many past memories. The route is bordered on the north by the Willmore Wilderness area, the Resthaven group of peaks and Mounts Chown (3586 m) and Bess (3461 m), both worthy climbing objectives. To the south a broad panorama across the Holmes River valley to Mounts Robson, Whitehorn, and Longstaff creates impressive views. The trip started by leaving vehicles at Robson Station and taking a 12 passenger van, for the 9 participants plus gear to the confluence of Blueberry Creek and the Holmes River, camp 0, approximately 42 km northeast of McBride, B.C.

Day 1 begins with a steady climb on the east side of Blueberry Creek through mature forest from elevation 1083 m to an open valley and Blueberry Lake at 2070 m. From here an old horse trail gains the escarpment above the lake, below Jackpine Mountain, then parallels the Willmore Wilderness



Map showing the route of the traverse. Map by D. Nickull.

boundary eastward through beautiful Apland - large open meadows - where camp 1 was made by a small lake at 2200 m: a day of elevation gain of 1117 m and a distance of 14 km. The meadows are vast and views in all directions are excellent.

Day 2 starts with travel through the high alpine with special views of distant Mt. Robson. The trail goes over small shoulders up to 2360 m and down to Jackpine Pass at 2130 m. Mounts Chown and Bess tower above the pass. A short excursion down the Jackpine River for 1 to 2 km is pleasant with good views of little-seen mountains such as Lucifer and Saurian. From the pass the trail descends to an old horse camp in the trees at 1840m. A moderate day of 11 km. An unusual find in camp was two whiskey bottles with notes from passersby, from over the years. One on a $5 bill was suicidal but probably a spoof.

Day 3 – From the horse camp the route contours around the Bess shoulder, on a somewhat indistinct trail, crossing several babbling brooks that drop from high on Mt. Bess. It was a wet and drizzly morning with trailside crowding bush guaranteeing that all of us would be well-saturated. The route climbs through forest to tree line to a high point at 2200 m, about 560 m above the actual Bess Pass which is heavily treed and would be a very difficult route to bash through. An interesting reference is the 1933 Alberta/British Columbia boundary survey Map No. 33 by A.O. Wheeler and R.W. Cautley which shows

Near Blueberry Lake above Holmes valley on day 1.

Camp 1 with Mts. Robson, Phillips, and Longstaff on the SE horizon.

Above Jackpine Pass looking toward Bess Pass with Mt. Robson in the distance.

Heading to camp 1 on Holmes apland, with Mt. Bess in the distance.

On Bess Pass summit.

Near camp 1, looking N to Mts. Lucifer, Saurian, and Resthaven.

Looking W to Mt. Bess near Chown Ck.
All photos: The party.

View S from camp 1.

Vast meadows on the start of day 2.

Looking W to Mt. Bess and the Chown Glacier.

Karl and Bonnie on dish duty.

At Jackpine Pass looking towards Mt. Barricade and the slopes of Mt. Chown.

Mt. Whitehorn from the trail into Robson.

Emperor Falls and Mt. Robson.

Mt. Robson from the north.
All photos: The party.

the original trail. The high point is a pretty spot just at tree line. The trail then contours downwards through flower-laden avalanche meadows with steeper sections to the gravel outwash from the Chown Glacier at 1600m. We were soaked by the time we reached this wide open plain, but the sun came out so we stripped boots and clothes to dry. As soon as we opened up our packs and spread out gear, a full-grown grizzly sauntered along, about 80 m away, but after much waving and hollering by us he detoured into the bush. From this point good views up the Chown Glacier would justify a side trip if time permitted. No trail is apparent along the south side of Chown Creek which necessitates tougher navigation for about 4 km until you reach the Jasper Park North Boundary Trail at the edge of the Smokey River. Camp was set up near a bridge on the Smokey, a 14 km day.

Day 4 – The north boundary trail along the Smokey River is a well trodden route with bridges on all streams. Travel is pleasant through forest and after 7 km you reach a warden's cabin near Carcajou Creek, a good rest stop. A historic artifact nearby was a stone boat, leaning against a tree, used to haul boulders by horse to the cabin site, obviously decades ago. The right, southwest side of the trail, is flanked by a significant wall of Palu Mtn. and Mumm Pk. After a day of 24 km, camp was made at another horse camp about 1 km from Adolfus Lake. There is a very good view of Robson's north face from here.

Day 5 – Four of our group leave early for the 26 km trek out to the cars at Robson Station while the rest of us hiked more leisurely through the ever impressive Robson area - kudos to the Sierra Club for trail improvements done over recent years. Camp was struck after about 15 km at a newer Whitehorn Campground in the Valley of a Thousand Falls, a few kilometres up-valley from Kinney Lake. A fine dessert of huckleberries was enjoyed here.

Day 6 involves a leisurely stroll to our cars for an early journey home. The 100 km trip traverses beautiful country and gives a great perspective on our vast landscape along the B.C. - Alberta border.

Participants: Karl Ricker, Lyn and Linda Michaud, Gordon and Debbie Ritchie, Bonnie Farris, Bryan and Jackie Skrypnek, and Mike Simpson.

Natural History Notes, by Karl Ricker

The traverse was in generally fine weather with only one evening and morning of rain, at the worst spot possible. Trail conditions were variable on the B.C. portion of the route that was outside of parks, fair to good in Jasper National Park, and unbelievably excellent in Mt. Robson Park. For the latter, three years of heavy-duty rebuilding by the Sierra Club was an amazing effort. Vestiges of the old horse worn-down trail are gone. Throughout the traverse I kept notes on natural history observations with Lyn Michaud helping immensely with the flowers and animal tracks (and scats). Unfortunately, we did not have any flora or geology handbooks with us. However, we have used the "Lone Pine" series of flora guides, Jasper Park geology guides, and a map produced by the Geological Survey of Canada to assist in the following compilations. The books/guides are as follows:

Karl, the observer, recording. Photo: The party.

Baird, D. 1963. Jasper Park – behind the mountain and glaciers. Geol. Surv. Canada, Misc. Rept. No. 6.

Gadd, B. 2008. Canadian Rockies – geology road tours. Corax Press (Vendant Pass Ltd.) Jasper.

Lyons, C.P. and B. Merilees, 1995. Trees, shrubs and flowers to know in British Columbia and Washington. Long Pine Publishing, Vancouver, Richmond, Edmonton.

MacKinnon, A., J. Pojar and R. Coupé, 1992. Plants of Northern British Columbia. British Columbia Forest Service and Lone Pine Publishing, Vancouver, Edmonton.

Parish, R., R. Coupé and D. Lloyd, 1996. Plants of Southern Interior British Columbia and the inland northwest. B.C. Ministry of Forests and Lone Pine Publishing, Vancouver, Edmonton and Renton, Washington.

Price, R.A. et al, 1977. Athabasca River, Alberta and British Columbia. Sheet 83. Geological Survey Canada, Map 1339A (scale 1:1,000,000).
Yorath, C. and B. Gadd, 1995. Of rocks, mountains and Jasper – a visitor's guide to the geology of Jasper National Park. Minister of Supply and Services (Ottawa) and Dundurn Press, Toronto, Oxford.

GEOLOGY

Fascination with the geology reigned supreme while lunching in Randy's cafeteria at the base of Mt. Robson. The apex of the Main Ranges of the Canadian Rockies – a mighty pile of Cambrian-aged sedimentary rock – over 3000 metres of it, exposed right before the eye! Well, the trip began by dropping westward to the Rocky Mountain Trench, a linear trough of complex faulting origin. Just short of reaching McBride our bus swung out of the Trench and onto the Holmes River forestry road. Initially, the valley passed through older Pre-Cambrian strata on the lower outer ridges of the Main Ranges. Higher peaks further up-valley are not very visible. We were dropped off at kilometre 42 on the incredibly long Holmes River road which at that point ran parallel to the NW-SE strike of the structural trend of the Rockies.

The Blueberry Trail ascended steeply through the Pre-cambrian Miette Group of rocks (age: Hadrynian or "Neoproterozoic") of sandstone-shale, minor conglomerate and limestone. On the southwest side of the valley, however, the vistas from a few places on the trail showed a much more rugged and higher sets of ridges capped by the Cambrian-aged Gog Group – the resistant quartzites as seen around Amethyst Lakes, Mt. Edith Cavell and elsewhere along the Main Ranges. Our trail, however, topped out on a lower and relatively smooth, if not streamlined, set of ridges on the Miette Group. They had been honed down by the overriding Cordilleran Ice Sheet, several times over during the last 1 to 2 million years.

It was a hiker's paradise. To the southeast where we were heading, the rugged peaks of the Chown-Bess and Robson area massifs are in younger, less erodible Cambrian-aged strata. Ahead there were also glaciers - nothing exceptionally large, but a good array of valley and cirque types, with one or two icefield centres supporting some. So began our trek, the overview of geology rising before us, and what follows are the local curiosities sighted each day. Day zero, the drive to trailhead, will be skipped in the following travelogue.

Day One – Blueberry Trail to the Holmes Basin Apland - All day on the Miette Group, slightly metamorphosed, cut by small quartz veins here and there, running at right angles to the strike (NW-SE) of the sedimentary strata. The structure was a syncline north of our campsite. Off to one side a scalloped-edged cliff marked the source of an old rock slide.

Day Two – Homes Basin Apland to Jackpine Pass - The morning trek was over more Miette Group, with more minor quartz veinlets cutting through its strata; slates were noticeably chloritized, yielding a schistose appearance – hardly a place to drill for hydrocarbons! Exposed areas of overlying rock rubble often showed a grain-size sorting into stripes – a permafrost generated feature. Double-crested moraines downslope of the small pocket glacier on Mt. Chown, above Jackpine Pass, were very conspicuous. The NW-SE linear groove of Jackpine Pass is an erosional manifestation of an underlying thrust fault. The older Miette Group is pushed against younger Cambrian-aged strata – Gog Group quartzites were below the pass level, and at ground level against the younger Upper Cambrian-aged carbonate formations. Campsite was on the trace of this thrust fault feature.

Day Three – Jackpine Pass Camp to Chown River Campsite - The morning's wet hike stumbled over the occasional outcrop of dolomite and/or limestone into a wild avalanche area of Bess Pass. Remind me to avoid ski touring into this hellhole! Lower down, and into Jasper Park, the odd rock outcrop encountered on the bushy trail was supposedly on Middle Cambrian-aged carbonates but there were no stratigraphic indicators to be seen at forest level. At lunch-time the procession stepped out onto the wide-open outwash plain emanating from Chown Glacier, through gaps in its colossal forest-covered terminal moraine. Yes, the moraine was developed more than a century ago, perhaps two or three. At this point the view of the Bess-Chown massif showed clearly the succession of Cambrian-aged

formations, as well as a distinct trim line (area or raw exposure) of the former height of the Chown Glacier during the apex of the Little Ice Age, some 2 to 3 hundred years ago. The valley train outwash flats were flooded by peak summer run-off. The bridge crossing downstream is supposedly on Lower Cambrian Gog Group strata, here red-coloured due to oxidation of iron minerals within it.

Day Four – Chown River Campsite to Adolphous Lake Horse Camp - A long day along the edge of the Smoky River at near bankfull water levels. The valley becomes broader and flatter near its head at Robson Pass. Over 100 years ago, it received copious discharge from Robson Glacier, but this amounts to only a minor trickle today with nearly all of its discharge now going into Berg Lake which discharges south into Robson River. The best view of the valley was from a long scree-talus slope section of the trail between Wolverine Camp and the Moose Pass trail junction. The rubble was of Cambrian-aged rocks. Good views of the tiered succession of the formations on Robson and Mumm massifs appeared from the Horse Camp.

Day Five – Adolphous Lake Campsite to Whitehorn Campsite - Easily the best and most geologic inspiring scenery of the entire trek on this day. At Robson Pass the trail was on the vast outwash fan of the Robson Glacier, then covered by scattered shrubbery. This feature is the north side "dam" of Berg Lake. Robson Glacier, however, was barely visible, well-below its trim line showing on Lynx Mtn. and ridges on either side of it. Berg Glacier was also somewhat reduced, barely reaching lake level at one narrow point. Moving south of Berg Lake, the next glacier on the massif (Mist) was above the valley floor at its terminus, but a large arcuate terminal morainal ridge at valley floor level marked its historic extent. An outwash fan from the Mist formed the south "dam" to Berg Lake. The trail was on the outwash gravel for a long way, before being diverted off it and onto a colossal talus slope. The adjacent flood plain gave way to sand, silt, and organic muck (gradient change!). The talus was of more Cambrian-aged sedimentary strata. By the way, Mike insisted that we scan the right side of Berg Glacier (on the Helmet) to look at algal mounds (Cambrian-age) but they were not obvious from valley floor viewpoints. The trail was mainly on Cambrian carbonate rock as it descended beside Emperor Falls (and Gorge Falls). However, the channel nearest the trail was dry. Robson River was diverted to a new course during deglaciation(?) by a "deflector" not obvious at trail level. Below the series of cataracts, the valley levels out, flanked by near vertical walls of Cambrian-aged strata. Whitehorn Camp was at the axis of a shallow syncline plunging gently to the southeast. Truly a spectacular valley for the geologist! Mt. Robson is also on the axis, whereas Mt. Resplendent is on the tilted strata of the northeast limb of the structure.

Day Six – Whitehorn Camp to Trailhead SW of Kinney Lake - The geologic feature of note was the vast wide-open outwash plan entering Kinney Lake. The trail stayed above this feature weaving through outcrops of Gog Group strata (quartzite, etc.). Placards along the trail provided notes on a few other features of the natural history.

* Apland – so named by A.O. Wheeler on his impressive set of boundary survey maps.

FLORA

Locations by day number on trail are defined as follows: Day 0 = drive up the Holmes River basin to campsite at base of Blueberry Trail; Day 1 = first day on the trail to first high camp; Day 2 = traverse to camp near Bess Pass and so on, with Day 6 = trail hike from Whitehorn Campsite to parking lot trailhead near Kinney Lake, as shown on the attached sketch map.

Trees

Gymnosperms (needles)

– *Abies lasiocarpa* – subalpine fir: Days 1, 3, 5
– *Picea engelmannii* – Engelmann spruce: Days 1, 3, 4, 5
– *Pinus albicaulis* and/or *Pinus flexilis* – White-bark pine and/or Limber pine: (not noted, but possibly present) Day 1-5?

– *Pinus contorta* – lodgepole pine: Day 0
– *Pseudotsuga menziesii* – Douglas-fir: Day 6
– *Thuja plicata* – western redcedar: Day 6
– *Tsuga heterophylla* – western hemlock: Day 6

Angiosperms (broad leaves)
– *Betula papyrifera* – paper birch: Day 6
– *Populus balsamifera* – black cottonwood: Day 0
– *Populus tremuloides* – trembling aspen: Day 0

Shrubs and Small Trees

– *Acer glabrum* – Douglas (vine) maple: Day 6
– *Alnus crispa* – Sitka alder: Day 1
– *Arceuthabium americanum(?)* – western dwarf mistletoe or other spp.: Day 5
– *Artostaphylos uva-ursi* – kinnikinnick: Days 1, 4
– *Betula glandulosa* – shrub birch: Days 3-5
– *Cassiope mertensiana* and/or *C. tetragona* – white mountain or four-angled mountain heather: Days 1, 2
– *Juniperus* spp. – unidentified junipers: Days 4-6
– *Ledum glandulosum* and/or *L. groenlandicum* – trappers and/or Labrador tea: Day 4
– *Linnaea borealis* – twin flower: Days 1, 4
– *Oplopanax horridus* – devil's club: Days 1, 6
– *Phyllodoce empetriformis* – pink mountain heather: Day 1
– *Phyllodoce glandulifera* – yellow mountain heather: Day 1
– *Potentilla fructicosa* – shrubby cinquefoil: Days 3, 5
– *Prunus virginicus* – choke cherry: Day 4
– *Rhododendron albiflorum* – white rhododendron: Days 1, 3
– *Ribes lacustre* – black gooseberry: Days 1, 4
– *Rosa acicularis(?)* – prickly rose and/or Baldhip rose: Day 4
– *Rubus parviflorus* – thimbleberry: Days 1, 6
– *Salix arctica* – arctic willow: Day 2
– *Salix* spp. – unidentified shrub willows: Days 1, 2, 3, 4, 5, 6
– *Shepherdia canadensis* – soopolallie: Days 4-6
– *Taxus brevifolia* – western yew: Day 6
– *Vaccinium membranaceum* – black huckleberry: Day 1
– *Vaccinium* spp. – unidentified blueberries: Days 1-5
– *Viburnum edule* – high bush cranberry: Day 6

Not noted, but probably seen:
– *Amelanchier alnifolia* – Saskatoon berry
– *Andromeda polifolia* – bog rosemary
– *Chimaphila umbellata?* – prince's pine – possibly some *Leptarrhena*
– *Cornus stolonifera* – red-osier dogwood
– *Kalmia microphylla* – bog laurel
– *Lonicera* spp. – honeysuckle species
– *Menziesia ferruginea* – false azalea
– *Oxycoccus oxycoccus* – bog cranberry
– *Pachistima myrsinites* – false box
– *Penstemon fructicosus* – shrubby penstemon
– *Sambucus racemosa* – red elderberry
– *Sorbus sitchensis* – Sitka mountain ash
– *Spiraea* spp. – unidentified red and/or white flowered shrub

Flowers

Dicotyledons (net-veined leaves)

White to Cream-Coloured

- *Achillea millefolium* – yarrow: Days 1, 4
- *Anaphalis margaritacea* – pearly everlasting: Days 4, 5
- *Anemone drummondi* and/or *A. parviflora* – Drummond's anemone: Day 2
- *Anenome occidentalis* – western pasque flower: Days 1-3
- *Antennaria racemosa* and/or *A. pulcherrinum* – pussytoes: Day 1
- *Arenaria* spp. – sandworts: Day 1
- *Caltha leptosepala* – marsh marigold: Day 2
- *Cerastium arvense* – chickweed: Day 1
- *Cornus canadensis* – bunchberry: Day 6
- *Draba* and/or *Arabis* spp. – Draba and/or rockcress; Day 2
- *Draba longocarpus and/or D. nivalis* – Draba species: Days 1, 2
- *Dryas octopetala* – white mountain dryas: Days 2, 3
- *Dryas* spp. – unidentified dryas: Day 5
- *Erigeron humilis* – arctic daisy: Day 2
- *Fragaria virginiana* – wild strawberry: Days 1, 4, 5
- *Geranium richardsonii* – white geranium: Day 1
- *Leptarrhena pyrolifolia* – leather-leafed saxifrage: Days 1, 2 (could be *Chimaphila umbellata* - prince's pine)
- *Luetkea pectinata* – partridgefoot: Days 1, 2
- *Parnassia fimbriata* – fringed grass of parnassus: Days 2-5
- *Saxifraga bronchialis* – spotted saxifrage: Day 2
- *Saxifraga occidentalis* – western saxifrage: Day 1
- *Stellaria longpipes* – starwort: Day 1
- *Tolfieldia glutinosa* – sticky false asphodel: Days 1, 4
- *Valeriana sitchensis* – Sitka valerian: Days 1, 3

Alpine meadow with red *Castilleja*, white *Valeriana*, yellow and orange/yellow *Aquilegia*, and pink *Hedysarum* prominent. Photo: The party.

Yellow

- *Agoseris glauca* – short-beaked agoseris: Day 2
- *Arnica gracilis* - high mountain arnica: Day 1
- *Arnica latifolia* – mountain arnica: Days 1-4
- *Artemesia norvegica* – mountain sagewort: Days 2, 4
- *Castilleja thompsoni* – Thompson's paintbrush: Days 2, 3, 5
- *Draba aurea* – golden draba : Days 1, 2
- *Draba paysoni* – Payson's draba: Day 3
- *Dryas drummondii* – yellow mountain dryas: Day 3
- *Gaillarda aristata* – brown-eyed Susan: Day 0
- *Oxytropis campestris* – field locoweed: Day 4
- *Pedicularis bracteosa* – bracted lousewort: Day 3
- *Potentilla* spp. – unidentified cinquefoils: Days 1, 2, 5
- *Ranunculus* spp. – unidentified buttercups: Day 1, 2
- *Saxifraga aizoides* – spotted saxifrage: Day 5
- *Sedum* spp. – unidentified stonecrops: Days 4, 5
- *Senecio canus* – woolly butterweed: Day 2
- *Senecio pseudoaureus* and/or *S. streptantifolias* – streambank butterweed and/or Rocky Mountain butterweed: Day 1
- *Senecio triangularis* – arrow-leaved butterweed: Days 1, 4, 5
- *Solidago canadensis* – Canada goldenrod: Day 4
- *Solidago multiradiata and/or S. spathulata* – northern goldenrod and/or spike-like goldenrod: Days 3-5
- *Taraxacum ceratophorum* – horned dandelion: Day 2
- *Taraxacum officianale* – common dandelion: Days 0, 4, 6
- *Utricularia intermedia* – flat-leafed bladderwort: Day 3
- *Verbascum thapsus* – great mullein: Day 0

Pink
– *Claytonia lanceolata* – western spring beauty: Day 1
– *Petasites frigidus* – palmate coltsfoot: Day 2
– *Silene acaulis* – moss campion: Days 1, 2

Red
– *Castilleja miniata* – scarlet paintbrush: Days 1, 3, 4, 6
– *Castilleja rhexifolia* – alpine paintbrush: Day 3
– *Oxyria digna* – mountain sorrel: Day 2
– *Sedum integrifolium* – roseroot: Day 1

Orange-Red
– *Agoseris aurantica* – orange agoseris: Days 4, 5
– *Castilleja hispida* – harsh paintbrush: Day 4

Pinkish-Purple or Whitish Purple
– *Epilobium alpinum* – alpine willowherb: Day 3
– *Epilobium latifolium* – alpine fireweed or broad-leaved willowherb: Days 2, 5
– *Erigeron peregrinus* – subalpine daisy: Days 1-3

Reddish-Purple or Purplish Red
– *Astragulus alpinus* – alpine milk vetch: Days 1, 2
– *Epilobium angustifolium* – fireweed: Day 4
– *Pedicularis ornithorhyncha* – birdsbeak lousewort: Day 2
– *Pedicularis* spp. – unidentified louseworts: Days 3-5
– *Pyrola asarifolia* – pink wintergreen: Days 1, 3, 4, 5
– *Silene acaulis* – moss campion: Days 1, 2

Purple
– *Aster* spp. – unidentified asters: Days 1, 2
– *Lobelia kalmii* – Kalm's lobelia: Day 6
– *Pedicularis langsdorfii* – Langsdorf lousewort: Days 3, 4

Purplish Blue or Bluish Purple
– *Aconitum delphinifolium* – mountain monkshood: Days 2, 3
– *Campanula rotundifolia* – common harebell: Day 4
– *Penstemon proceras* – small-flowered penstemons: Day 2

***Epilobium latifolium* in typical habitat. Photo: The party.**

Blue
– *Campanula lasiocarpa* and/or *Campanula uniflora* – mountain or solitary harebell: Day 2
– *Erigeron speciosus* – showy fleabane: Days 3-5
– *Lupinus arcticus* – broad-leaved lupine: Days 1, 3
– *Lupinus lyalli* – dwarf mountain lupine and/or *L. sericeus*: Days 1, 2
– *Mertensia paniculata* – tall bluebell: Day 4
– *Myosotis alpestris* – mountain forget-me-not: Day 2
– *Veronica wormskjoldi* – alpine speedwell: Days 1, 3, 5

Green or Greenish
– *Gentiana glauca* – inky gentian: Day 1

Monocotyledons (parallel-veined leaves)
– *Lilium columbianum?* – tiger lily or *L. montanum* – western wood lily, orange: Day 1
– *Lysichiton americanum* – skunk cabbage, yellow: Day 6
– *Plantanthera* spp. – unidentified rein orchid species, white: Days 1, 3
– *Smilacina racemosa* – false Solomon's-seal, creamy white: Day 6
– *Veratrum viride* – Indian hellebore, greenish: Days 1, 4
– *Zygadenus elegans* – mountain death camas, white: Days 3-5

Grasses / Sedges / Rushes

- *Carex* spp. – several species of sedge, black: Days 1-6
- *Eriophorum chammisonus* – cotton grass, white: Days 1, 5
- *Juncus* spp. – few species of rush: Days 1-6
- *Luzula* spp. – one or two species: Days 1-6
- *Poaceae* – grasses, clover, no IDs, several genera glanced at: Days 0-6
- *Trifolium repens* – white clover: Day 6

Ferns

- *Equisetum* spp. – unidentified horsetails – field-day not noted
- unidentified fern spp.: Days 4, 6

Flowers Seen (but day of observation not noted)

- *Antennaria alpina* – alpine pussytoes, white
- *Antennaria lanata* – wooly pussytoes, white
- *Antennaria rosea* – rosy pussytoes, pink
- *Aquilegia flavescens* – yellow columbine, yellow
- *Aquilegia formosa* – red columbine, orange/yellow
- *Arnica parryi* and/or *chamissonis* – Arnicas, yellow
- *Articum lappa* – great burdlock, purple
- *Cirsium* spp. – unidentified thistle species, bluish-purple
- *Crepis nama* – dwarf hawksbeard, yellow
- *Delphinium glaucum* – tall larkspur, purple
- *Eriogonum* spp. – unidentified buckwheats, whitish to yellowish
- *Gentianella* spp. – unidentified gentian, pinkish-violet
- *Gillia aggregata* – scarlet gillia, red
- *Hedysarum* sp. – sweet vetch
- *Hieracium auranticum* – orange hawkweed, orange-red
- *Hieracium gracile* – slender hawkweed, yellow
- *Leucanthemum vulgare* and/or *Chrysanthemum leucanthemum* – roadside oxeye daisy, yellow
- *Menyanthes trifoliata* – buckbean, white
- *Pedicularis groenlandica* – elephant's head lousewort, pinkish-purple
- *Phacelia sericea* – silky phacelia, purple
- *Phlox diffusa* – spreading phlox, blue
- *Polemonium pulcherrinum* – showy Jacob's ladder, purple
- *Polygonum viviparum* – alpine bistort, white
- *Rumex* spp. – unidentified sourweed species, red to russet, also a greenish species
- *Silene noctiflora(?)* – night flower catchfly, white to pinkish tuberls
- *Silene parryi* – Parry's campion, white (tinged to purple or green) tuberls
- *Spiranthes romanzoffiana*(?) – ladies tress, bog orchid
- *Tanacetum vulgare* – common tansy, yellow
- *Thalictrum* spp. – unidentified meadow-rue species, greenish white
- *Tiarella unifoliata* – one-leaf foam flower, white delicate and small
- *Trollius laxus* – globe flower (confused with marsh marigold!), white
- *Urtica dioica* – stinging nettles, greenish (inconspicuous)
- *Viola* sp. – unidentified violet, yellow

BIRDS

- American pipit – several at Holmes Basin ridge: Days 1, 2
- Chickadee (species unidentified) – Chown River basin: Day 3
- Clark's nutcracker – Jackpine Pass: Days 2, 3; Chown River: Day 3; Smoky River valley: Day 4; Adolphous Lake camp: Day 5; Berg Lake: Day 5; Emperor Falls to Whitehorn Camp: Day 5
- Common raven – one or two at Jackpine Pass: Day 2
- Golden-crowned kinglet – a few near Kinney Lake: Day 6

– Harlequin duck – one female on Berg Lake: Day 5
– Killdeer – nesting pair on Robson Pass (B.C. side): Day 5
– Northern flicker – Holmes River: Day 0
– Northern goshawk – one on Holmes Basin Ridge: Day 1
– Robin – one or two at Adolphous Horse Camp: Day 4; Holmes River: Day 0
– Rufous hummingbird – Jackpine Pass at horse camp: Day 2; Chown River campsite: Day 3; Smoky River: Day 4; Wolverine Camp: Day 4
– Spotted sandpiper – one near Berg Lake: Day 5
– Spruce grouse – one or two on Blueberry Trail: Day 1
– Surf scoter – flock of 15 on Berg Lake: Day 5
– Varied thrush – nesting pair between Kinney Lake and parking lot: Day 6
– Western Wood-peewee – Holmes River: Days 0, 1
– Winter wren – Holmes River: Days 0, 1

17 species (low!) Obviously missing are Gray jay, finches, sparrows and an owl.

MAMMALS

– Deer sp. – Holmes River Valley: Day 0; and tracks at Jackpine Pass: Day 2; upper Smoky Valley: Day 4
– Elk – tracks upper Smoky River valley: Day 4
– Grizzly Bear – Chown River outwash plain: Day 3
– Homo sapiens (9) – average age 54.4, median age 53, range = 34-74.
– Marmot – Blueberry Lake: Day 1; Holmes Basin ridge: Day 2; near Kinney Lake: Day 6
– Moose – tracks at Jackpine Pass: Day 2; Smoky Valley: Day 4
– Porcupine – Jackpine Pass: Day 2; Chown River camp: Day 3
– Small rodent – Blueberry basin: Day 1
– Squirrel, Red – heard: Days 1-6
– Wolf – tracks upper Smoky Rive valley: Day 4

FISH

– Unidentified salmonids (trout? or char?) – Chown River: Day 3

AMPHIBIAN(?) OR LIZZARD(?)

– Small lizzard-like animals seen by Bonnie Faris.

A Scenic Circuit Trek in the Southern Rockies - In the Footsteps of A.O. Wheeler's Boundary Commission Surveys, 3-6 August, 2011

Karl Ricker

Trip Travelogue

The last active member of the original "Grizzly Group", a band of crusty, but happy-go-lucky mountaineers who assemble two to three times on week-long or longer trips each year, as well as many weekend trips, has yet to call it a day. Mike Simpson of Cochrane, Alberta, was still mountain rambling in the 40th year (2010). Over the decades, a few other old salts joined the group. but recently bowed out, leaving Mike to round up new members. The trip he had in mind was on his drawing board for several years. Two daughters, Bonnie and Jackie, were easily conscripted to join the party. They had been with us the previous year on our 100 km trek to the northwest of Mt. Robson so it was an easy sell. Bonnie's son, Jacob Farris, and Jackie's daughter, Jane Skrypnek, joined to make it a three-generation family party. It was an appealing venture, only 52 map km in length but more like 70 km when taking in switchbacks and various other trail irregularities. This trip was at the other end of the Rockies, on the height of land covering the B.C./Alberta border, roughly 10 to 15 km west and northwest of Kananaskis Lakes, Mt. Sir

Douglas (3406 m) being the centrepiece of the entire circuit. Parts of three parks are traversed along the way, beginning in Alberta's Peter Lougheed Park, crossing into B.C.'s Height of the Rockies "Park", Banff National Park, and finishing back in Peter Lougheed. So, in this clockwise circuit the first pass, actually a col (2765 m), lay at the head of a rapidly-shrinking French Glacier, providing access southward to a very level and much more expansive Haig Glacier, used for summer ski race training. Leaving the toe of the Haig, the next to come was North Kananaskis Pass (2341 m), then onto a very long and flat Palliser Pass (2084 m) and, finally, to an incredibly scenic Burstall pass (2360 m). And to make sure that we had seen enough passes, there was a side trip on the third day to visit an unexpectedly beautiful Leman Lake and Spray Pass at a lowest 1913 m. The entire circuit is shown on Gem Trek's Kananaskis Lakes and Region map, scale 1:50,000. Caution: the first edition (1996) has several trail location errors. Make sure you have the sixth edition (2010). The circuit described is seldom done, if ever, before our venture, but Burstall Pass is a very busy one-day hike with the local Calgary crowd, when the sun is out. On our Sunday exit day, there were 40 cars in the parking lot at the Mud Lake trailhead on the Smith-Dorrien Road. Yes, the road is in very good shape, paved if used by way of Peter Lougheed Park.

The party at the Palliser Pass BC-Alberta Border Survey Monument, set by Wheeler in 1915. Left to right: Karl, Jane, Bonnie, Jacob, and Patti. Photo: M. Simpson.

Our trek departed from the Mud Lake lot on August 3rd with 5 days worth of food on our backs and a minimum of gear to permit safe glacier travel on the Haig. Leaving the Burstall Pass trail (an abandoned logging road), after about 500-600 m, the non-signed French Creek trail departed on another old road which soon became a narrow trail along the west side of the creek. It stopped just short of a waterfall, leaving us to find a log to cross the creek and eventually back onto the trail on its east side. The trail was sketchy at best, veering from creek level to side hills and windfall-forested areas where the narrow valley floor was engulfed by the creek bed. Midway through the morning, we reached a fresh winter avalanche zone of destruction off the north ridge of Mt. Murray where a standing mature forest and the trail had been wiped out, leading to an hour of bushwhacking before finding the trail which eventually took us out of the forest and onto the right lateral moraine of French "Glacier". About 2 km of easy hiking on its crest lead to a snow-covered glacier(?) and another km of slogging in snow took us to French-Robertson Col. There was no sign of underlying ice, but some decaying patches may have been there.

Roping up below Mt. Jellicoe to traverse the Haig Glacier. Photo: K. Ricker.

The array of peaks both north and south of us was dazzling. Most of the strata was near-vertical Paleozoic carbonates, and Haig Glacier before us was decidedly flat. The cross-country ski racers had already returned to their camp of Quonset huts beyond its terminus for the day and the groomer had already re-worked their trails. This site has had training facilities for many years. Regardless of their activity, we roped up for the 2 km snow slog to the exit trail below Mt. Jellicoe on the east side. Surprisingly, the trail was well-constructed on the rubble but in the descent to the huts more and more of it was on glacial polished slabs of dolostone and limestone. The snout of the Haig Glacier,

crevassed here and there, was directly below us, and the three Quonset huts were just beyond it, perched on barren rock. Each day the athletes left the huts at elevation 2380 m and hiked up-hill on this fantastic trail, roughly 2.5 - 3 km, to their training courses at 2700 m – a great aerobic workout! The trail to the huts from the Upper Kananaskis Lake parking lot (roughly 18 km) was well-established with two regulated campgrounds along the way. Our stop for the night was at the nearest one, Turbine Canyon, with paid reservations for three of the 18 numbered sites. Over the course of the evening, other back-packers showed up to overfill its capacity. Located just below tree line around an alpine meadow, it was easy to see why the campground was so popular — great mountain scenery, two glaciers in view and the exceptional setting of nearby Lawson and Maude Lakes. This being a family trek, it was Jackie's night for supper preparation.

Descending the slabs to the Quonset huts, with Mt. Lyautley centre-top. Photo: K. Ricker.

Day two on the trail started with an easy hike to Maude Lake, seeing a few goats above it on the way there. On its west side, North Kananaskis Pass, was an incredible view: The Royal Group to the southwest, and imposing vertical strata on Mts. Leroy and Monro to the northwest. It was a photo and flower stop here! A.O. Wheeler (1917) described its surroundings as "…widely picturesque and imposing several glaciers fill amphitheatres between the encircling peaks, one of which comes down close to the summit of the pass (in 1916) from the base of the high, snow-clad peak named (by him) Mt. Beatty". At this point we should have ascended Mount Maude (3042 m), but the day's journey down below us was obviously going to be a long one.

Mt. Beatty and the Beatty Glacier from the trail above Turbine Canyon camp-site. Photo: K. Ricker.

Now dropping into B.C., where any recreation facility maintenance comes from a bygone era of our provincial parks system, the "trail" to follow was on thin rubble lying on the angle of repose. A.O.'s horses must have really had a tough descent on it. But for us, the scenery overwhelmed the difficulties with the traction. Reaching the forest in Leroy Valley, about 1100 m below, the trail was grown-in but "followable" to an avalanche fan still covered in snow. Debris on the snow at the distal edge of the fan had obviously wiped out the trail but young Jacob quickly

Maude Lake at N Kananaskis Pass, Mts. Leroy (left) and Monro (right) behind. Photo: K. Ricker.

Royal Group from Kananaskis Pass, Mts. King George (left) and Queen Mary (right). Photo: K. Ricker.

found it as we picked our way through the debris and back into the forest. Shoulder- to head-high shrubbery overhanging the trail worsened in the final one hour thrash to the confluence with the Palliser River. Yep, the trail hadn't been brushed out since the day that A.O. used it! Boots off and it was an easy ford across the river to reach the trail on its west (not east) side. The Palliser trail was in much better shape and for the initial hour we passed through several subalpine openings. Later, the Palliser was re-crossed to its east side; the trail was no longer in the open, and it began to steepen after crossing two tributaries. In the heat of the afternoon, we suddenly hit a complete change of grade for a 300 m rise on an almost switchbackless trail. Obviously, it was not built for hikers, and was developed in the era of packhorse trains, when cowpokes had no patience in setting up a reasonable grade of climb, or descent. For the last kilometre of the day the trail swung around a topo nose to a very placid and shallow tree-shrouded Palliser Lake. At its north end an opening in the forest revealed a seldom-used campsite. The boundary of Banff Park, where camping is not allowed, was only a few hundred metres away so we set up the tents at the lake. It had been a long day. Bonnie's turn on the stoves produced another gourmet dinner.

Mike's plans for day three were only a few hours of heavy pack trekking in the headwaters of the Spray River of Banff National Park. The entrance to the park was marked by the provincial boundary survey monument set up by A.O. Wheeler 95 years ago. It was a metal pyramid-topped post, filled with crumbling concrete, exuding the appearance of a historic monument, so it was photographed from all angles with the designated "IE" showing on both sides of the B.C./Alberta boundary. There were great views to Mt. Elizabeth (2849 m) to its northwest and Mt. Sir Douglas and outlier peaks (on its west and south ridges) to the northeast. From the monument it was a wide open, almost dead-level pass area for about one km, and frankly, the drainage divide was not obvious on it. A.O. gave this expansive alpine meadow area to Alberta and Banff National Park, leaving B.C. on its south edge in the trees! Beyond the north end of the meadows at Belgium Lake the trail resumed in forest cover on the east side of the Spray River while a narrow slice of the meadow extended for another km under Mt. Elizabeth. It was a magical and historic setting: A.O. Wheeler described the pass "… as one of the most beautiful yet surveyed by the (Boundary) Commission". (At that stage his surveys extended from the U.S. border to Kicking Horse Pass.) Entering the trees, we heard our first thunder as the clouds quickly moved in from the west. The peaks were quickly engulfed in clouds and the lightning flashes began to burst around us. The national park trail was in good condition for our hurried 150 m (vertical) descent into bigger trees for shelter. The downpour began just as we found a couple of big spruces to stand under. After an hour the skies reduced their wrath to a drizzle and the trek resumed to the very flat-bottomed Spray valley.

The trail entered saturated open meadows with only a few clusters of high and wet shrubbery for roughly 1.5 km, but the real moose pasture was ahead as far as the eye could see – waist- to head-high wet shrubbery of dense dwarf birch. The trail was ephemeral or sketchy at best, with the crew fanning out to find it or another game trail in bits and pieces. We eventually lucked out; one such pathway led to the crossing of the Spray where the trail was definitive, leading quickly to the important junction, the Leman Lake trail and the nearby campground, inappropriately titled Burstall C.G. (Burstall Pass, Creek and Mount are well east of the site and lie in the Smith-Dorrien basin.) By then, the clouds had moved off, re-exposing a magnificent view of Mt. Sir Douglas as we set up camp in the three sites paid for. Facilities, however, were minimal – two tables, a hoist for animal proofing the packsacks, an outhouse with porcupine defences, and five numbered tent sites – hardly worth the 15 bucks per person!

By mid-afternoon, Mike was ready to execute his wistful desire - a hike to nearby Leman Lake at Spray Pass. On the maps it didn't appear to be too appealing, suggesting a lake entirely surrounded by forest. Had I looked at A.O.'s book before this trek, I would have thought much better of the mission. It was an easy forested walk to the north end of the lake, where park officials had posted a no-fishing zone. The trail continued along its west side rising onto a steep sloping alpine meadow which plunged down to lake shore. A wonderful floral display, an idyllic island on the lake, and backed by Mt. Leman which exposes a magnificent rock structural syncline. Breathtaking! Absorbing the scene for a few minutes we continued on the trail to the southwest corner of the lake, and back into the forest a scant few

Syncline shown on N Face of Mt. Leman above Lake Leman. Photo: K. Ricker.

hundred metres to Spray Pass, which is the park boundary against B.C. territory. The return to camp after this 5-6 km jaunt was in cloud cover, soon to exude a drizzle, making it necessary to erect a tarp to serve as a kitchen and dining area – Mike and I were in charge of dinner for all, and hardly met the previous days' standards.

Day four, still on schedule, and the sun returned. Crossing the bridge over the Spray we had to go down-valley a bit to the Burstall Pass trail junction. This trail was in good shape beginning with a fairly flat 2 km section rising less than 60 m. It turned toward the pass on a meadowy avalanche fan and the ascent began without too much let up until tree line was reached at about 2200 m. Jacob couldn't stand our slow methodical pace, and would burst ahead for 10 minutes or so and then stop and wait. In the alpine zone of scattered large blocks of limestone on verdant meadows, we paused for the view to the west, an astounding perspective towards Whiteman Mtn. (2977 m) and peaks in front of it, and then the scene to the east, a spectacular wall of steep slabs - Whistling Ridge. The trail crossed a scree slope and ascended a low ridge of glacially-rounded slabs to reach Burstall Pass. The views from there were outstanding in all directions. The steep strata on nearby Mt. Birdwood (3097 m) beckoned for a sporty rock climb (which Mike had already done); to the south the north-facing basin of Mt. Sir Douglas lead up to a series of slanting gullies and rock ribs which was Mike's route to its summit with the Grizzly Group years ago, and those slabs on Whistling Ridge — wow! A parade of day-trippers below us was about to reach the pass; its reason for popularity with the Calgary crowd was obvious. Presently, some of Mike's kin arrived to join us. While they trekked about the pass I descended into the basin below to examine the array of flowers. After a while the crew reunited for the supposed 8 km hike to our cars, but, frankly, it felt like 10 to 12. Where the creek from Robertson Glacier

Mt. Sir Douglas from Burstall Pass. Photo: K. Ricker.

Mt. Birdwood, Pigstails, and Commonwealth Pk. from Burstall Pass. Photo: K. Ricker.

Commonwealth Pk., Mt. Galatea, Gutsy Pk., and the Fortress above Burstall Valley from Burstall Pass. Photo: K. Ricker.

reached the valley floor, there were 1 to 2 km of squishy treading among water-logged meadows and a maze of stream channels. The trail soon joined an old logging road, out of sight of Burstall Lakes, which was followed to the parking lot and a most-welcomed honey-brown brewski. The circuit was completed.

It was a fantastic tour, over half of it in the footsteps of legendary A.O. Wheeler and his survey crews. Esthetically and historically, it is a winner, long overdue to be done by others, and we thank Mike for his very thoughtful organization of the venture. For future parties, adding three or four days would provide some outstanding nearby ascents; the obvious ones are: Mount Jellicoe (3246 m) at Haig Glacier, Mt. Maude (3042 m) at North Kananaskis Pass, Mt. Queen Elizabeth (2849 m) and/or Mt. King Albert (2981 m) at Palliser Pass, Mt. Leval (2760 m) at Leman Lake, and Mt. Birdwood (3097 m) at Burstall Pass. Mt. Sir Douglas, which sits in the middle of the circuit is best approached from Burstall Pass, and is a serious mixed rock and ice climb – one of those legendary eleven thousanders for those who are interested in that quest.

Mike at Palliser Pass, grizzly bear diggings in foreground. Photo: K. Ricker.

Natural History Notes

This circuit was in prime alpine floral habitat, particularly for calciphilic species, because the terrain is almost entirely in Paleozoic limestones and dolostones with lesser amounts of highly-erodible shales and massive resistant quartzites. The broad valleys are also big game corridors, although they were unseen on our trek, despite the abundance of fresh tracks.

LOCAL GEOLOGY

The area lies within the Front Ranges of the Canadian Rockies, a zone of thrust faulting of older strata, Devonian-Carboniferous carbonates, that have pushed above younger strata which include shales, siltstones, coal and lesser carbonates. The latter were not seen on our trip, lying under the cover of valley floor forests and meadows. Hence, a typical mountainside would show basal cliffs of resistant dolostone and limestone (Palliser Group – Devonian age) overlain by a thick sequence of mixed shale and dolostone (Banff Formation – Carboniferous age), and capped by a thick resistant sequence of limestone-dolostone (Rundle Group – Carboniferous). Dolostone is the new name for dolomite, which is also a mineral, so the rock is now dolostone, made of the calcium-magnesium carbonate mineral, dolomite. The age span in the above-noted sequence is roughly 370 to 326 million years ago, formed by precipitation of the minerals out of sea water onto a shallow to moderately deep sea floor. About 100 million years ago, arrival of exotic terrains on the coastline of North America began to push up the sea floor with the Main Ranges (to the west) rising above sea level. Twenty-five million years later, the continual push from the west buckled more sea floor to the east giving rise to the Front Ranges. About 5 million years ago the up-thrusting of the Front Ranges ceased. The leading edges of each thrust sheet have been contorted yielding a variety of folds and local breaks. Since then erosion, particularly along the leading edge of each thrust sheet, has produced the characteristic “writing desk” appearance of the Front Ranges – steep northeast faces and gentler southwest-leaning backslopes. Our tour was below those northeast faces, utilizing trails on the base of the leeward and gentler slope, roughly along the thrust fault trace in the Palliser-Spray Valley thoroughfare. Other fault traces were not so obvious and would require a detailed geological map to illustrate them. The concomitant product

Rockslide terrain on Whistling Ridge, as seen from Burstall Pass. Photo: K. Ricker.

Protalus ridge from avalanche debris, Lake Leman. Photo: K. Ricker.

of the thrust faulting is the exposed secondary structural features: a dazzling display of inclined to vertical strata in an array of synclines and anticlines ("sags and swells"). Throughout the trek we were looking at both; the classic syncline was fully exposed to the south of the Leman Lake Trail on Mount Leman.

Younger geological features were of erosional origin: avalanche fans, rock slides, moraines of the Little (recent) Ice Age, valley floodplains, karst features, and polished rock and scattered debris of the Pleistocene Epoch. All have been noted in the previous travelogue but one feature of note was a significant mound and bay on the edge of Leman Lake – a protalus ridge. Slopes above the lake at this point were seasonal avalanche-prone – the snow in most events reaching the lake and sitting there throughout much of the spring and summer seasons. Meanwhile, rocks and debris continually tumble down the mountains, bouncing down the snow surface to reach the outbound edge of the fan in the lake. Slowly over the centuries, the debris built up out of the lake to form an offshore ridge. At Lake Leman the leeward side of the ridge was tree-covered, whereas the proximal side was scantly vegetated, showing that the process was still active but more constrained because, in fact, the slope on the mountain was more or less stabilized by growth of forests, leaving less rock to roll downslope. Post-glaciation some 10,000-12,000 years ago, however, the raw slopes were fully exposed, somewhat over-steepened and, for a few hundred years or more, rained copious debris downslope.

Another feature found on the final approach to Burstall Pass was a series of low vegetative re-covered mounds in an alpine meadow. These were frost mounds (earth hummocks) produced by the presence of permafrost in the meadow. There are several explanations as to how the permafrost and vegetation work together to produce the mounds. In this area, as well, there were several huge depressions in the carbonate rock. They are produced by karst activity – solution of the limestone/dolostone by acidic rainwater runoff, percolating through the rock cracks to enlarge them and eventually leading to huge pits and an underground cave. Spelunking exploration anybody?

FLORA

The pressure was on. An original member of the Grizzly Group, Gordon Shruggs (now deceased) would nonchalantly identify 100 or more flowers on their summer week-long outings. Mike insisted that this target be met on this traverse and he helped with the IDs. To make sure it could be done, a simplified flora guide was taken along and samples were collected daily of those that could not be identified with the help of the guide. The pressed specimens were taken home to be analyzed with the use of several treatises. Several species marked cf defied the guides, being either out of range of known distribution or showing characteristics of two or more species. Nonetheless, about 110 species of flowers were identified, mainly alpine/subalpine, as well as additional trees and flower-bearing shrubs, as follows:

- **Trees**
  - *Abies lasiocarpa:* subalpine fir – days 2 and 3
  - *Alnus* spp.: alders, no IDs – days 1 and 4
  - *Larix lyalli:* alpine larch – days 1 and 4
  - *Picea engelmannii:* Engelmann spruce (possible hybrid to *P. Glauca*) – day 1
  - *Pinus contorta*: lodgepole pine – days 2 and 3
  - *Populus tremuloides*: trembling aspen – days 1 and 4
  - *Pseudotsuga menziesii*: Douglas-fir – days 2 and 3
  - *Salix* spp.: tall willows, no IDs – days 1 – 4
  - *Tsuga heterophylla*: western hemlock – days 2 and 3
- **Shrubs**
  - *Arctostaphylos uva-ursi*: kinnikinnick – day 2
  - *Betula glandulosa*: scrub birch – day 4 (endless in Spray Valley)

- *Cassiope mertensiana*: white moss heather (Note: also possibly present and not checked, *C. tetragona* – four-angled heather) – days 1, 2, and 4
- *Juniperus communis*: common juniper – day 2
- *Kalmia microphylla*: bog laurel – days 1, 3, 4
- *Ledum glandulosum(?)*: trapper's tea – day 1 (possibly *L. groenlandicum*)
- *Menziesia ferruginea*: false azalea – day 2
- *Penstemon fruticosus*: shrubby Penstemon – days 3 and 4
- *Phyllodoce empetriformis*: pink mountain-heather – days 1 to 4
- *Phyllodoce glanduliflora*: yellow mountain-heather – days 1 to 4
- *Potentilla fruticosa*: shrubby cinquefoil – days 2 to 4
- *Rhododendron albiflorum*: white-flowered Rhododendron – day 2
- *Ribes lacustre*: black gooseberry – day 3
- *Salix arctica*; arctic willow – days 1 to 4
- *Salix cf barclay*: Barclay's willow – day 1 (could be several spp)
- *Salix cf planifolia*: tea-leaved willow – day 3 (could be several spp)
- *Salix reticulata*: netted willow – days 1 and 4
- *Shepherdia canadensis*: soopolallie – days 2 and 3
- *Spiraea betulifolia*: birch-leaved Spirea – day 3
- *Symphoricarpus albus*: common snowberry – day 2
- *Vaccinium* spp.: one or more species, no IDs – days 2 and 3

- **Flowers – White**

Saxifrage Family
- *Heuchera cylindrica*: round-leaved alumroot – days 2 to 4
- *Leptarrhena pyrolifolia*: leatherleaf saxifrage – days 1, 3 and 4
- *Parnassia fimbriata*: fringed grass-of-Parnasus – days 1 and 4
- *Saxifraga bronchialis*: prickly saxifrage – day 4
- *Saxifraga cespitosa*: tufted saxifrage – day 4
- *Saxifraga cf occidentalis*: western saxifrage – days 1, 3 and 4
- *Saxifraga tolmiei*: Tolmie's saxifrage – day 4
- *Saxifraga tricuspidata*: three toothed saxifrage – Days 1, 2 and 4
- *Tiarella unifoliata*: one-leaved foamflower – day 3

Geranium Family
- *Geranium richardsonii*: white Geranium – days 3 and 4

Buttercup Family
- *Anemome drummondii*: Drummond's (alpine) Anemone – day 4
- *Anemome occidentalis*: western Anemone, pasqueflower, etc. – days 1 to 4
- *Anemome parviflora*: northern and Lyall's Anenome – days 1 to 4 (high and dainty forms)
- *Clematis ligusticifolia*: white Clematis – days 2 and 3 (noted as a shrub by some)

Carrot Family
- *Heracleum lanatum*: Cow-parsnip – days 1 to 3

Aster Family
- *Achillea millefolium*: yarrow – days 1 to 4
- *Anaphalis margaritacea:* pearly everlasting – days 1 and 4
- *Antennaria alpina*: alpine pussytoes – days 1 to 4
- *Antennaria* spp.: 2 or 3 other spp. not identified – days 1 to 4
- *Erigeron caespitosus*: tufted (white) fleabane – days 3 and 4
- *Erigeron compositus*: dwarf mtn. fleabane – days 1 and 4

Purslane Family
- *Claytonia lanceolata*: western spring beauty (chick pea) – days 1 to 4
- *Claytonia perfoliata*: miner's lettuce – day 4

Rose Family
- *Dryas octopetala*: white mountain-avens (Dryas) – days 1, 3 and 4
- *Fragaria virginiana*: wild (blue-leaved) strawberry – days 1 to 4

Pea Family
- *Astragulus/Oxytropis* spp.: very similar plants! No spp. I.D. – days 1 to 4

Evening Primrose Family – *Androsace septentrionalis*: fairy candelabra (rock jasmine) – days 1, 2 and 4

Valerian Family – *Valeriana sitchensis*: Sitka valerian – days 1 to 4

Mustard Family – *Arabis drummondii*: Drummond's rockcress – day 1
– *Smelowskia calycina*: silver rockcress – day 2

Lily Family – *Clintonia uniflora*: queen's cup – day 2
– *Smilacina* racemosa: false Solomon's-seal – days 2 and 3
– *Tofieldia pusilla*: common false asphodel – day 4
– *Zygadenus elegans*: mountain death-camas – days 2 and 3

Dogwood Family – *Cornus canadensis*: bunchberry (dwarf dogwood) – day 2

Bedstraw Family – *Galium boreale*: northern bedstraw – day 2

Pink Family – *Arenaria capillaris*: three-leaved sandwort – days 1 to 4
– *Arenaria obtusiloba*: white alpine sandwort – day 4
– *Cerastium arvense*: field chickweed – day 3
– *Stellaria longipes*: long-stalked starwort – days 2 and 3

- **Flowers – Yellow**

Aster Family – *Agoseris* cf *glauca*: short-beaked Agoseris – days 1 and 4
– *Arnica angustifolia*: alpine Arnica – days 1 to 4
– *Arnica chamissonis*: meadow Arnica (wooly) – day 4
– *Arnica cordifolia*: heart-leaved Arnica – day 4
– *Arnica latifolia*: broad-leaf Arnica – day 1 (valley floor)
– *Arnica rydbergii*: Rydberg's Arnica – days 2 and 4 (high alpine)
– *Hieracium gracile*: slender hawkweed – day 4
– *Senecio integerrimus*: western butterweed – days 1 to 3
– *Senecio streptanthifolius*: alpine meadow butterweed – days 1 to 3
– *Senecio triangularis*: arrow-leafed butterweed – days 1 to 4
– *Solidago multiradiata*: northern goldenrod – day 3
– *Solidago spathulata*: spikelike goldenrod – day 2
– *Taraxacum officinale*: common dandelion – days 2, 3, and 4 (evasive)
– *Tonestus lyalli*: Lyall's goldenrod – day 4

Saxifrage Family – *Saxifraga aizoides*: yellow (evergreen) saxifrage – days 1 and 3

Buckwheat Family – *Eriogonum heracleoides*: creamy buckwheat (yellow var.) – day 4
– *Eriogonum* cf *ovalifolium*: cushion buckwheat – day 4

Buttercup Family – *Aquilegia flavescens*: yellow columbine – days 2 and 3
– *Ranunculus cymbalaria*: shore buttercup – day 3
– *Ranunculus eschscholtzii*: subalpine buttercup – days 1 and 4

Rose Family – *Dryas drummondii*: yellow mtn. avens – day 4
– *Potentilla* spp.: 2 or 3 other unidentified spp. – days 1 to 4
– *Potentilla diversifolia*: diverse-leaved (mtn. meadow) cinquefoil – days 1, 3 and 4

Pea Family – *Hedysarum sulphurescens*: yellow Hedysarum and/or *Oxytropis campestris* cx: field locoweed – days 1 to 4

Figwort Family – *Castilleja sulphurea*: sulphur paintbrush – days 1 and 4
– *Pedicularis bracteosa*: bracted lousewort – days 1 to 4

Lily Family – *Erythronium grandiflorum*: glacier lily – day 3

Sedum Family – *Sedum lanceolatum*: lance-leaved stonecrop – day 3

Mustard Family – *Draba paysonii*: Payson's Draba – day 1

- **Flowers – Yellow-Green**

Lily Family – *Veratrum viride*: Indian hellebore – days 2 and 3

- **Flowers – Orange – Red – Pink**

Evening Primrose Family – *Epilobium anagallidifolium*: alpine willowherb – days 1 and 3
– *Epilobium angustifolium*: fireweed – days 1 and 4
– *Epilobium latifolium*: broad-leaved willowherb – days 1, 3 and 4

Figwort Family – *Castilleja hispida*: harsh paintbrush – day 2 (orange-red)
– *Castilleja miniata*: common red paintbrush – days 2 and 3
– *Castilleja parviflora*: small-flowered paintbrush – days 2 and 4
– *Castilleja rhexifolia*: alpine paintbrush – days 2 and 3

Aster Family – *Agoseris aurantiaca*: orange Agoseris – day 3

Heath Family – *Pryola asarifolia*: pink wintergreen – day 3

Pink Family – *Silene acaulis*: moss campion – days 1 and 4

Geranium Family – *Geranium viscosissimum*: sticky geranium – day 2

Lily Family – *Allium* cf *acuminatum*: Hooker's onion – day 3, out of range, not *A. cernuum*

Pea Family – *Trifolium* spp.: clover (no species ID – invasive from horse traffic?) – day 3

Rose Family – *Geum triflorum*: old man's whiskers (long-plumed avens) – day 3

Primrose Family – *Primula* cf *angustifolia* or *P. incana*: primrose – day 4

- **Flowers – Brown**

Aster Family – *Artemisia ludoviciana*: western mugwort (wormwood) – day 4

- **Flowers – Blue to Purple**

Forget-Me-Not Family – *Hackelia micrantha*: false forget-me-not – days 2 and 3
– *Myosotis alpestris*: mountain forget-me-not – days 1 and 4

Figwort Family – *Pedicularis langsdorfii*: Langsdorfii lousewort – days 2 and 4
– *Pedicularis ornithorhyncha*: bird's-beak lousewort – day 3
– *Penstemon proceras*: small-flowered Penstemon – day 2
– *Veronica cusickii*: Cusick's speedwell and/or *V. wormskjoldii*: alpine speedwell, very similar species – days 1 to 4

Pea Family – *Astragulus alpinus*: alpine milk-vetch – days 1 to 4
– *Lupinus arcticus*: arctic lupine – day 1 (alpine forms could be *L. lyalli*)
– *Oxytropis podocarpa*: stalked-pod locoweed – days 1 and 2

Aster Family – *Aster* cf *conspicuus*: showy Aster (below tree line species) – days 3 and 4
– *Aster* cf *sibiricus*: arctic Aster (or other alpine species) – day 4
– *Cirsium edule*: Indian thistle – day 2
– *Erigeron peregrinus*: subalpine daisy – days 1 and 4

Buttercup Family – *Clematis occidentalis*: blue clematis – day 3 (noted as a shrub by some)
– *Delphinium glaucum*: tall larkspur – day 3
– *Delphinium nutallianum*: Nutall's larkspur – day 2

Mustard Family – *Arabis lyallii*: Lyall's rockcress – days 1 and 4

Waterleaf Family – *Phacelia sericea*: silky Phacelia – day 2

Bluebell Family – *Campanula lasiocarpa*: mountain harebell – day 4
– *Campanula rotundifolia*: common harebell – day 3
– *Lobelia kalmii*: Kalm's Lobelia – day 4

Bladderwort Family – *Pinguicula vulgaris*: common butterwort – day 3; the teenager's favourite!

Mint Family – *Prunella vulgaris*: self-heal (invasive sp.) – day 4 (on trail out to cars)

Gentian Family – *Gentiana propinqua*: four-parted gentian – day 3

Phlox Family – *Polemonium pulcherrimum*: showy Jacob's ladder – day 4

- **Club Mosses**
  – *Lycopodium complanatum*: ground-cedar – day 1(?)
- **Sedges**
  – *Carex* spp.: several species, no IDs – days 1 to 4
  – *Eriophorum chamissonis*: Chamisso's cotton-grass – day 4

FAUNA

Despite the north-south through corridor provided by the Palliser-Spray valleys which are remote to any sort of traffic, wildlife was scarce at the time of our trip. Big game, game birds, small fur bearers, song birds, etc. were few. Unusual though was the abundance of toads (*Bufo boreas*) on the trail in Palliser and Spray valleys. They were the wildlife highlight of the trip! Otherwise, what was seen is as follows:

- **Mammals**
  – Bear, grizzly: scat only – days 1-3; excavation craters – day 3
  – Chipmunk, rufous-tailed: Lake Leman trail – day 3
  – Deer, mule: several at Turbine Ck. C.G. – day 1; tracks – day 3
  – Deer, whitetail: 2 at Turbine Ck. C.G. – day 2
  – Elk, Rocky Mtn: tracks only – days 2 & 4
  – Goats, Rocky Mtn.: 6 on slopes – day 2 above Maude Lake
  – Ground squirrel, Columbia: few – day 2
  – Ground squirrel, golden mantled: one above Leman Lake – day 3
  – Marmot, hoary: scat – day 4
  – Moose: day one: one at Burstall-Mud Lake parking lot, tracks – days 2-4
  – Pika: several, Haig-French Col – day 1
  – Squirrel, red: heard every day, seen at all campsites
  – Wolf: scat only – day 4
- **Birds**
  – Chickadee sp.: On trail, heard only (probably Mtn. sp) – day 2
  – Finch sp.: several flying – day 3
  – Finch, gray-crowned rosy: Burstall pass – several, day 4
  – Jay, gray: 2 at Turbine Canyon Camp – day 2
  – Kinglet, golden-crowned: several – day 3
  – Merganser, hooded: 1 on Mud Lake – day 1
  – Pipit, American: French-Haig Col, few – day 1; Turbine Canyon – day 1; Palliser Pass – day 3
  – Raven, common: few, throughout day 1
  – Robins, American: several at Burstall C.G. – day 3
  – Sandpiper, spotted: 1 at Palliser Lake – day 3
  – Sparrow, savannah: several, Turbine Canyon area – day 1

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MOUNTAIN SCIENCE

A view inside volcanoes utilizing the technique of muography

Sara Steigerwald

While volcanoes have been responsible for some of the most catastrophic natural disasters in our history, they have also been the destinations of people on vacation who go out of their way to encounter landscapes shaped by this phenomenon. Some of the most gorgeous, spectacular and unusual locations on our planet are not only located near volcanic areas, but are also in part created by the forces unleashed by volcanic activities. Many tourists in Hawaii take time away from resorts to witness the spectacle of volcanic lava dripping lethargically into the ocean at night. Pompeii was the site of one of the most terrible volcanic events in human history. However, it also provided an opportunity for people to understand ancient Roman cities in a way that wouldn't have otherwise been possible. This site, along with the still active volcano Vesuvius itself, continues to draw large crowds of visitors and is a visible landmark dominating the Naples skyline. Japan is famous for volcanoes. Mount Fuji is one of the most recognizable volcanoes in the world and the subject of countless works of art and photographs. Japanese people as well as foreign tourists regularly visit the numerous volcanic areas of the country to go to onsen, natural hot springs dotted with traditional inns called ryokan where people enjoy baths in volcanically heated waters along with local food (often including eggs cooked in the same water). In New Zealand, you can take a trip to Wakatane to board a

Illustration: S. Steigerwald.

small vessel bound for an active volcanic island (White Island) where the volcanic activity is so persistent that the ground trembles, the mud bubbles and colorful, sulfurous clouds are continuously spewing from openings in the rocks. It is a popular trip for the more intrepid tourists as well as locals of the area. As a reader of this B.C. Mountaineer, we don't need to convince you of the popularity (for climbing and also skiing) and beauty of Canada's west coast volcanoes. British Columbia has several volcanoes mostly dotting areas within the Cascade Volcanoes (part of the so-called Pacific Ring of Fire) and the Garibaldi Volcanic Belt. Most likely you have encountered the remarkable landscapes of these volcanoes, including Mts. Meager, Baker, and Garibaldi with some of you experiencing these magnificent structures closer than others and from a variety of unusual perspectives during your trips.

We have been intrigued by the idea of viewing the inside structure of volcanoes in order to understand how the volcanic activities are driven and why such beautiful scenery can be produced. However, until recently we have only been able to see volcanoes from a limited viewpoint. Geophysicists have clarified the subsurface structure of many geological features by utilizing a technique of seismic tomography. They tried to apply the same technique to volcanoes. However, the spatial resolution didn't sufficiently separate components such as the magma pathway or the magma in a conduit (the fluid channel inside the volcano). The present article focuses on a new scientific technique that has been developed to enable us to glimpse a cross section of a volcano. In other words, we can get a more accurate view of the interior of a volcano. The method provides an image showing the average density along the nearly straight path of muon particles that can penetrate thick rock of more than 1 km. The method is similar to taking an X-ray although the result is not photography, but is called muography. What is muography exactly? Avoiding overly technical language and physics equations, the practice of muography, an introduction of the instruments used to survey volcanoes, and some of the results of experiments will be discussed.

Due to the limited scope of this article, we will only review the essential principles behind muography and the techniques used to survey volcanoes. The muon is the particle that is employed in muography. These particles arrive predictably and in very large numbers at the surface of the earth. Experimental physicists have calculated the number to be 1 muon per cm^2 per min. Primary cosmic rays travel from far corners of our galaxy and are mainly derived from supernova (exploding stars). Once these primary cosmic rays interact with the earth's atmosphere, secondary cosmic rays break down into muon particles. Muons travel through material easily. Some will even travel through mountains without stopping. Since muons are heavier than other particles, they experience fewer radioactive reactions in the process of traversing matter. This means that they are less likely to react with other particles and therefore they can travel further into material compared to most particles.

The basic concept of muon radiography is comparable to the way in which an X-ray machine works. When you have an X-ray taken, particles are penetrating your body in large numbers and then monitored once they react with material inside. The shape of bone and the differentiation between bone structure and muscle structure are rendered accurately as a result of how many X-rays react with the material and how many X-rays pass through. Bone has higher density, i.e if magnified you would observe that bone material contains more electrons and nucleons per unit volume than other materials in your body. By contrast skin, muscle, and organs are less dense than bone so a higher proportion of X-rays will pass through these structures. In summary: in relation to its density, X-rays will either react or pass through material and when we measure a very high number of these particles, we can discover the density and shape of the interior structure of a human body. X-ray machines have been successfully employed in hospitals for almost 100 years. So you might ask, why not simply X-ray a volcano? The reason is that most X-rays can only penetrate structures up to approximately a meter. On the other hand, muons can travel through more than 2 km of water, making them suitable for surveys of larger objects.

So now that the fundamental idea behind this research is outlined, we'll introduce the apparatus designed for this task. Perhaps, since we are used to seeing rather sizable X-ray machines in hospitals, you are imagining a correspondingly huge, energy guzzling apparatus hoisted near a volcano with

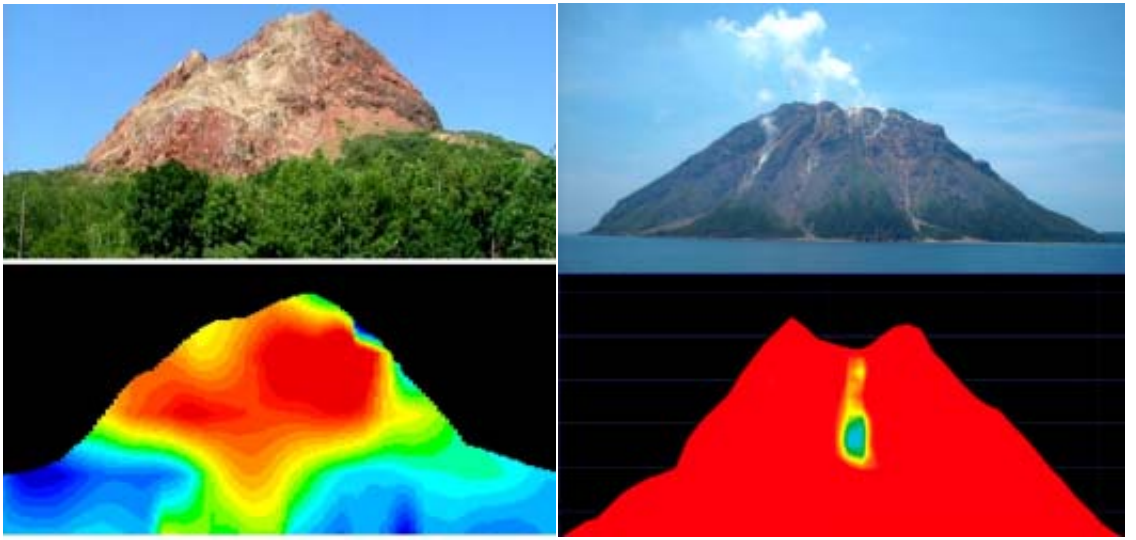
helicopters or cranes! Happily, that is not the case or else this research would not be viable. X-ray machines require an x-ray producing machine as well as the x-ray film. In the case of muon radiography, we do not need a muon-producing machine (such as a large accelerator) because we use natural radiation. Corresponding to x-ray film, the only apparatus we need is a muon detector. Typically, muon detectors measure approximately 1 square meter. They have been built to survive in the harsh environment of volcanoes. Emulsion cloud chamber detectors do not consume power and even for the models that do require power (for the electronic system), very little power is required (often using solar energy panels when possible). Additionally, they are portable enough to be carried by small vehicles and/or people. Since this detector is designed to record muon events coming from a specific angle intersecting the volcano, it is generally placed below the target area of the volcano being studied. Consequently, we can position the detector closer to the foot of the volcano further from the more dangerous regions of the volcano or crater.

An example of a muon detector. Photo: H. Tanaka, University of Tokyo.

There are several muon detector designs. In the case of the scintillation detector, for example, the detector itself consists of 2 planes both outfitted with photomultiplier tubes with corresponding scintillator strips to make a segmented device called a hodoscope. By detecting photons that are the result of reactions of muons in the scintillator strip and converting photons into an electric signal that can be counted, millions of muon events can be carefully recorded. Various detector units have been used in this research with improvements along the way. However, it takes longer to collect the data than an X-ray machine because we are using natural radiation. At the time of writing, it takes a few weeks for the detector to collect muon data, but this depends on the size of the target and the resolution of the image. There are other steps to consider after the data have been collected, but suffice to say after several calculations using the muon range - energy relationship and the known spectrum of the atmospheric muon, scientists can create an interior view of a volcano.

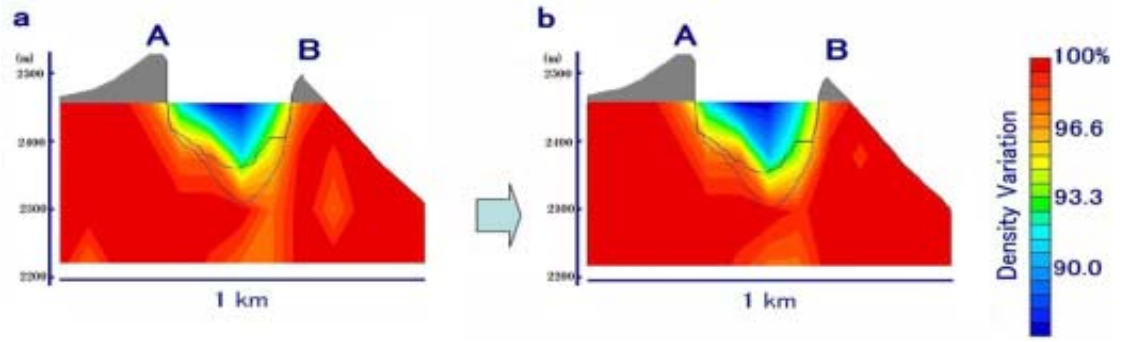
In 2006, Dr. Hiroyuki Tanaka and his colleagues at the University of Tokyo successfully imaged a volcano for the first time. An example of the image obtained (Mt. Usu, Japan) is shown below. The colored regions correspond to differences in density levels. The lowest density regions are blue with yellow indicating the medium densities and red indicating the higher density regions. Near the bottom of the volcano, we can see a yellow region vertically extended in an underground direction. This is the area of a pathway of magma (a combination of molten rock, volatiles and solids existing below the surface of the Earth). With this information, scientists can analyze what is occurring beneath the surface of the volcano.

A muon radiographic survey was also conducted on the volcanic island of Iojima. The interior structure of this volcano is entirely different from that of Usu. Iojima had a high-density region (shown as red) surrounding a lower density mass (shown as blue). The lower density region indicates magma that is highly vesiculated. In other words, the magma contains many bubbles. As magma ascends towards the surface, the volatile component makes a lot of bubbles in magma as a result of the de-pressuring effect. Since this volcano does not emit magma, it is thought that the structure represents a “convection” structure inside the volcano. Convection in this case refers to the process by which escalated magma with a highly vesiculated structure (filled with small cavities formed by gasses) descends after degassing. While it is not yet possible to monitor volcanoes in real time, improvements are being made to make the process more dynamic and allow for faster image generation so that the changes that occur over periods of time can be studied. An example of some of the first stages of this process can be seen in the panel below showing two cross sections of a volcano. Image A was created before the 2009



Muography Results of Japanese Volcanoes: Mt. Usu, Japan is pictured left and Iojima is pictured right Images: H. Tanaka, University of Tokyo.

eruption at Asama volcano. A few weeks later after the eruption, another muon radiographic survey was conducted and image B was the result. While both images look almost the same at the bottom of the image (the conduit density does not change significantly), a change can clearly be seen in the shape of the bottom of the crater during, and then after, the eruption. Before the eruption there was obviously a clear pathway for the low-density material (in this case, gas) to escape. The second image was taken right after the eruption. Judging from the change in shape at the crater floor and the fact that there was no magma ascent in the conduit, it was evident that this particular eruption would not be prolonged. The 2009 eruption was interpreted as a situation where the heated gas ascended and caused the old lava deposited at the crater floor to disintegrate. There is a heightened interest in increasing the efficiency of the process of muon radiography with the anticipation in the future we may be able to monitor volcanic activities in real time.



Density of material within Mt. Asama before (a) and after (b) the 2009 eruption. Images: H. Tanaka, University of Tokyo.

A collaborative effort to survey and study a volcano in British Columbia with muon radiography is currently being discussed. This has focused on Mt. Meager. Mt. Meager is an example of a stratovolcano,

a type of volcano featuring materials with differing compositions that are formed in layers from previous eruptions. The last major eruption was 2,500 years ago, which is very recent from the perspective of a scientist. The hazards posed by potential eruptions and landslides also influenced the decision to investigate Mt. Meager in more detail.

Mt. Meager, a possible future target of muography. Photos: P. Gumplinger (left); B. Finlayson (right).

There are already other methods and monitors in place that help scientists predict volcanic eruptions. While muon radiography may help to validate existing information, perhaps more importantly it gives us a new way to help us better understand how volcanoes form and also how previous eruptions influence future processes. Muon radiography may reveal the present state of the conduit and possibly some of the structures of older domes located within. By analyzing the variety of density regions present within the volcano with muography, scientists can assess the structures within previously inaccessible places.

Ecological zones of B.C. for the mountaineer

Michael Feller

BCMC members have been interested in the vegetation observed on trips to the mountains from the very inception of the club. In 1910 several club members with an interest in botany got the recently appointed provincial botanist, John Davidson, to join the club. Davidson communicated his enthusiasm for botany, and its study, to the club and began running botany classes for club members in 1912. Fred Perry, one of the founding members of the club, had been interested in botany and became the first chair of the club's botanical section in 1911. This section, with Perry and Davidson's leadership, grew to the point where its membership was greater than the club's active mountaineering membership. Its interest expanded beyond botany and it eventually evolved into the Vancouver Natural History Society in 1918 (see history in Feller 2002). Meanwhile Perry became the club's vice-president and went on to become the club's first major writer of natural history articles, particularly about vegetation. He wrote many articles, describing the flora of much of southern B.C., over a 30 year period until his death in 1953. Perry became knowledgeable about many aspects of botany and ecology and was the first person to describe for the BCMC the zonal distribution of plants in B.C. (Perry 1937). Now, 75 years later, it seems appropriate to describe our current knowledge about the zonal distribution of plants or the ecosystems one encounters on mountaineering trips in B.C.

As mountaineers or hikers, most of us have hiked from a valley bottom to a mountain top or alpine ridge in B.C. Along the way we have noticed a change in vegetation, the most obvious being from a closed forest to subalpine meadows/trees to open alpine meadows or rock with a few small plants. Within the forests, we may also have noticed changes in the major tree species present, from Douglas-fir –

western redcedar – western hemlock at low elevations in the southern Coast Mountains up to amabilis fir – yellow cedar – mountain hemlock at higher elevations, for example. These changes are, of course, not random, but reflect different environments – lower temperatures, more precipitation, and shorter snow-free growing seasons with increasing elevation disadvantage those plant species requiring warmer, longer growing seasons, and favour those species more tolerant of these more restrictive conditions. As we move to more northerly latitudes we can observe the higher elevation plant species of southern B.C. appearing closer to sea level with some ultimately at sea level, as latitude has similar effects on climate to elevation. If we walk around a small area (a few hundred square metres, say) at the same elevation we can also observe differences in vegetation – at low elevations in the southern Coast Mountains, sometimes western hemlock with much moss on the ground may be dominant; sometimes western redcedar with many ferns on the ground may be dominant. Overall climate will not change much in these few hundred square metres, but we may observe the soil beneath the hemlock forest to be relatively dry and light in colour while the soil beneath the red-cedar forest is moist and relatively dark in colour. We might also observe lodgepole pine growing on very shallow soil on a small rocky outcrop nearby. Clearly, soil and associated microclimate (climate near the ground surface) can also change and favour or disadvantage different plant species, according to their preferences and tolerances (lodgepole pine is the tree species most tolerant of very dry conditions and poor soil at low elevations in the southern Coast Mountains). Thus, climate (macro- and micro-), soils, and vegetation interact, with vegetation (and its associated wildlife) depending on climate and soils in different ways.

Botanists and ecologists have studied these interactions for hundreds of years in an effort to understand nature and explain what they (and we) see. In B.C. we are particularly fortunate in that we have had the strongest plant ecology study program in the Americas, and we have an excellent classification and understanding of plant ecology. This began in a major way in the 1950s when a Czechoslovakian immigrant, Vladimir Krajina, began working in the University of British Columbia's department of Biology and Botany. He developed an ecological classification system in which he initially defined 12 different ecological, or "bioclimatic", zones within the province. He and his many students worked on the system intensely between 1950 and 1975. It became known as the biogeoclimatic ecosystem classification (BEC) system. One of Krajina's students, Karel Klinka, another Czechoslovakian immigrant, after graduating in 1975, began work with the BC Forest Service, and managed to convince the Forest Service of the utility of the BEC system for forest management. This resulted in another intense research effort on the part of the Forest Service, as it went through its several government ministry names, from 1980 to 2000. Work continues on the system to this day as the less well-known zones (particularly alpine areas) are studied and characterized. Today we recognize 16 different ecological or BEC zones (Figure 1).

I will briefly describe the system and its application in what I hope are simple terms, although some jargon is necessarily used, but defined.

The basic unit of the classification system is known as the biogeoclimatic (or BEC) **subzone**. This is a region with a uniform climate and the same vegetation unit (plant ecosystem) on what is known as zonal sites. **Zonal sites** are simply intermediate or average portions of the landscape (i.e. their soils are neither wet nor dry and neither very rich nor very poor – they typically occur neither on ridge-tops nor in valley bottoms, but rather in the middle of gentle slopes). Subzones with very similar climate, but with different plant ecosystems that still contain the same dominant plant species on zonal sites, are grouped together into zones. A **zone** is a large geographic area with a broadly homogeneous broad-scale (or macro-) climate and the same dominant plant species on zonal sites. Throughout a zone, the processes forming soils, such as freezing and thawing at high elevations, or the production of large amounts of dead grass leaves in southern interior grassland areas, are similar, so the soils beneath vegetation within a zone have some uniformity, particularly in zonal sites.

BEC zones are usually named after one or more of the dominant climax plant species in zonal sites. A **climax plant species** is one that can grow and continue to reproduce itself in an area that has had no major disturbance, such as fire, logging, or avalanches, etc., for hundreds of years. Zones are often

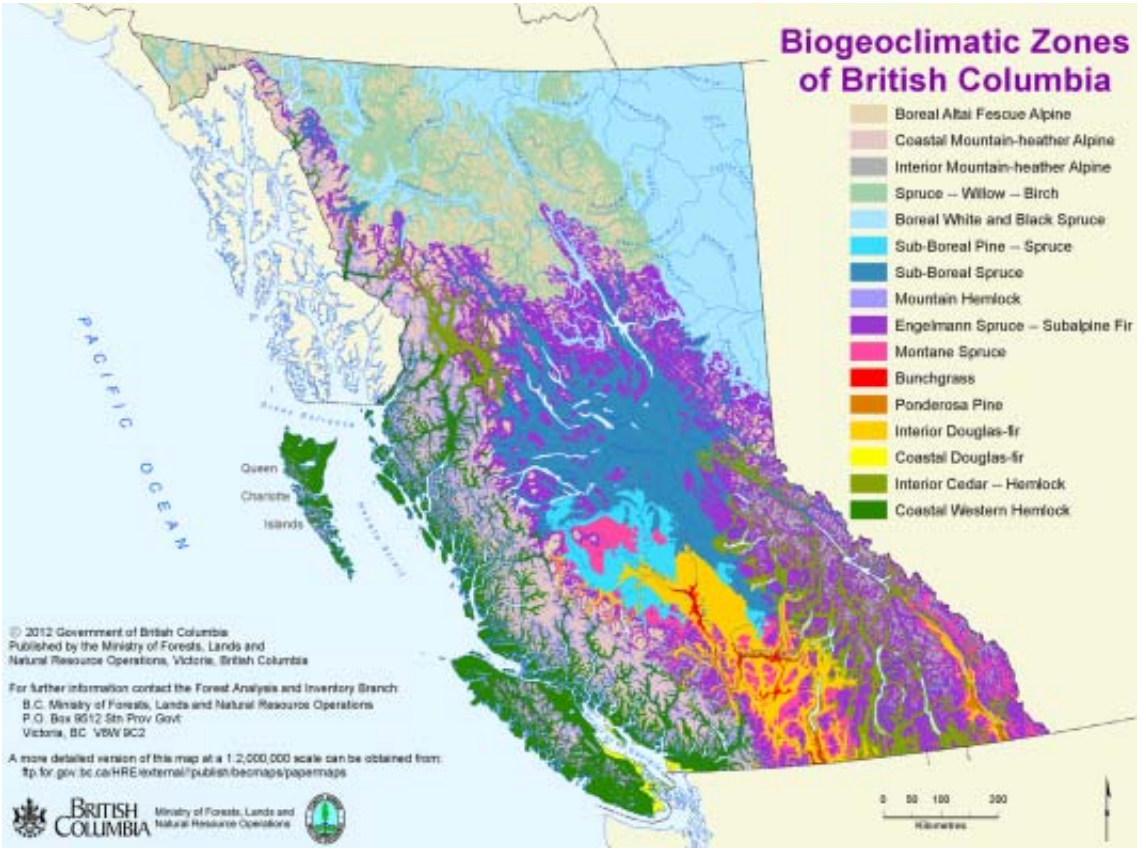


Figure 1. Biogeoclimatic zones of B.C. From www.for.gov.bc.ca/hre/becweb/

referred to by a 2-4 letter upper case acronym. For example, the Coastal Western Hemlock Zone is referred to as the CWH Zone and the Mountain Hemlock Zone is referred to as the MH Zone. Throughout the CWH zone, western hemlock is the dominant climax species on zonal sites.

BEC subzones are named by placing two lower case letters after the zone acronym, these letters defining the relative dryness of the climate - very dry (x) to very wet (v) - and the relative temperature of the interior zones – hot (h) to cold (c) - or continentality of the climate for coastal zones – hypermaritime (h – adjacent to the sea) to submaritime (s – some distance inland from the sea).

Thus, the major Coastal Western Hemlock zone, which occurs along the coast from Washington up to Alaska (Figure 1) has 10 subzones, ranging from the wettest Very Wet Hypermaritime (CWHvh) to the driest Dry Submaritime (CWHds). Visitors to the west coast of Vancouver Island or the Queen Charlotte Islands will be familiar with the CWHvh subzone, while the CWHds occurs in drier rain shadow areas, such as on the lowest slopes of the Cheakamus valley from just south of Cloudburst to the Brandywine valley (Figure 2), for example. In all these subzones, western hemlock is a dominant plant species on zonal sites, but the accompanying plant species differ between subzones. Thus, Sitka spruce, yellow cedar, deer fern, and salal are likely to be present in the CWHvh zonal sites, while Douglas-fir, broad-leaf maple, and the moss *Pleurozium schreberi* are likely to be present in the CWHds zonal sites.

Subzones can be divided into increasingly smaller and increasingly more homogeneous units. The most important of these units is called the **site series**. A given site series has a particular plant

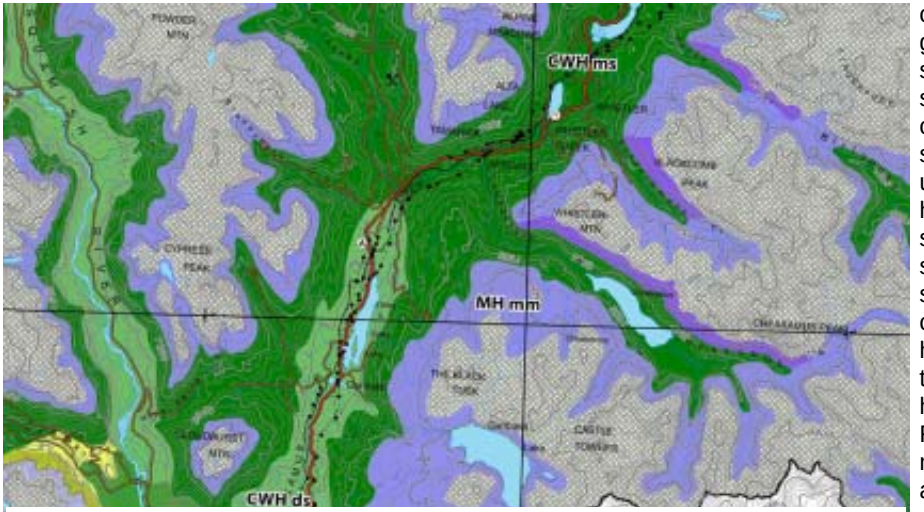


Figure 2. Biogeoclimatic zones and subzones in the Cheakamus and lower Squamish valley areas. From www.for.gov.bc.ca/hre/becweb/

community, or group of plant species. Site series can be considered as small ecosystems usually up to only hundreds of square metres in size, unlike subzones which can be many hundreds of thousands of hectares in size. For example, the moist, humid area adjacent to creeks or at the base of long slopes is the location of a particular site series. In our CWHds subzone, these site series are the Western hemlock – Queen's cup site series on poorer soils and the Western redcedar – Devil's club site series on richer soils, since soil richness can influence plant species distribution, even if moisture conditions remain the same.

The 2 main factors explaining plant distribution within a given climate region are, thus, considered to be soil moisture and soil richness. Soil moisture generally increases from a dry ridge top downslope to a valley bottom, as increasing amounts of water flow through the soil from an increasing upslope catchment area. Soil richness varies less uniformly as it depends on the type of rocks and plants present, as well as the nature of the soil. The presence of dark coloured rocks that contain much magnesium, calcium, and iron, plants that are leafy and deciduous, and soils that are deep and rich in clay, tend to indicate rich soils, whereas the presence of light coloured rocks that are low in magnesium, calcium, and iron, plants that are coniferous, and soils that are shallow or very rocky, tend to indicate poor soils. All the site series within a subzone can be placed on a 2-dimensional grid or matrix using soil nutrients (or richness) and soil water as the 2 determining factors. This is shown in Figure 3 for the Moist Submaritime CWH (CWHms) subzone, which covers most of the Chance Ck., Roe Ck., and Callaghan valleys and most of the Garibaldi Lake trail below The Barrier, for example. (Figure 2).

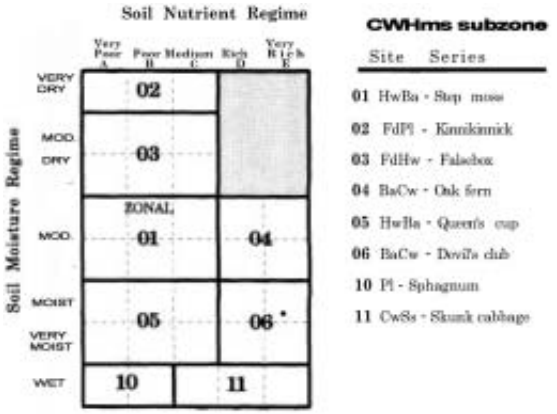


Figure 3. Vegetation site series placed on a soil moisture/richness grid for the CWHms subzone. From Green and Klinka (1994).

In alpine zones, soil richness is considered a less important factor in determining plant distribution. Soil moisture is still one of the 2 important factors, while the other is the length of the snow-free period (or date at which the snow leaves). Site series have been placed on a 2-dimensional grid involving these 2 factors (Figure 4). Small

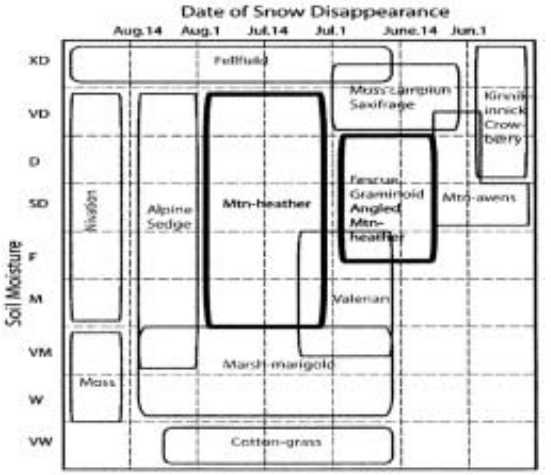


Figure 4. Vegetation site series placed on a soil moisture/date of snow disappearance grid for alpine zones. From MacKenzie (2006).

hummocks or ridgetops, sunny south-facing slopes, or areas where wind keeps snowpack low all have longer snow-free periods while depressions, cooler north-facing slopes, or the lee side of ridges, tend to have shorter snow-free periods.

The plant species one actually sees often do not include the major plant species that should be present in the site series . This is usually the result of some recent disturbance, particularly fire. No BEC zone includes lodgepole pine in its name but lodgepole pine is very common throughout interior B.C., although less so now due to widespread death caused by an insect - the mountain pine beetle. Lodgepole pine is a great fire-follower and grows profusely after fires. Its presence usually indicates a fire within the last 100 years and a plant community which is not the climax one. Beneath the lodgepole pines, particularly older pines, one can often see the climax tree species which can grow and reproduce in the shade of the pines, unlike the pines themselves. Eventually the pines will die and the climax species will dominate. The mountain pine beetle is actually hastening the progression of a forest to its climax state. Logging of mountain pine beetle-killed pines retards this progression.

Sometimes plant species which are not supposed to be present may be seen in an area. This may be due to a small-scale disturbance, such as animals, including people, bringing in seeds and disturbing the soil surface, creating a good place for seeds to germinate. It can also be due to ground disturbance by small fires lit by campers or lightning, or it can also be due to various environmental factors, such as cold air descending down a valley, creating climatic conditions that are more representative of higher elevations, allowing some higher elevation species to become established.

Diversity of ecological zones / subzones

If you are interested in maximizing the amount of ecological diversity at the zone level that you can encounter in one extended hike, you can find nothing better than a traverse of the Stein valley from Lizzie Lake to Lytton (Figure 5). As you drive along Lillooet Lake to the Lizzie Ck. road, you are in the Wet Warm Interior Douglas-fir (IDFww) subzone. A short distance up Lizzie Ck. road, in the absence of logging, you would have encountered more western hemlock trees as you pass through the Dry Submaritime Coastal Western Hemlock (CWHds) subzone. This subzone extends most of the way up the road until around where it steepens below Lizzie Lake. Here the road enters the wetter Moist Submaritime Coastal Western Hemlock (CWHms) subzone where amabilis fir and black huckleberry shrubs become common. Douglas-fir is still present, partly because it has been planted following logging but also partly because it has grown up after past fires. The CWHms subzone continues up to Lizzie Lake and some distance up the hiking trail to the old hut. Somewhere before the terrain flattens out before the hut, you enter the Moist Maritime Mountain Hemlock (MHmm) subzone where mountain hemlock has replaced western hemlock (although the 2 species hybridize, causing identification problems) and yellow cedar has replaced western redcedar. Douglas-fir has disappeared. The MHmm subzone continues until the patches of trees become quite small and well separated. Here you enter the Coastal Mountain-heather Alpine (CMA) zone. You remain in this alpine zone as you go up and over the divide. Over the divide you are in the Interior Mountain-heather Alpine (IMA) zone, through which you descend

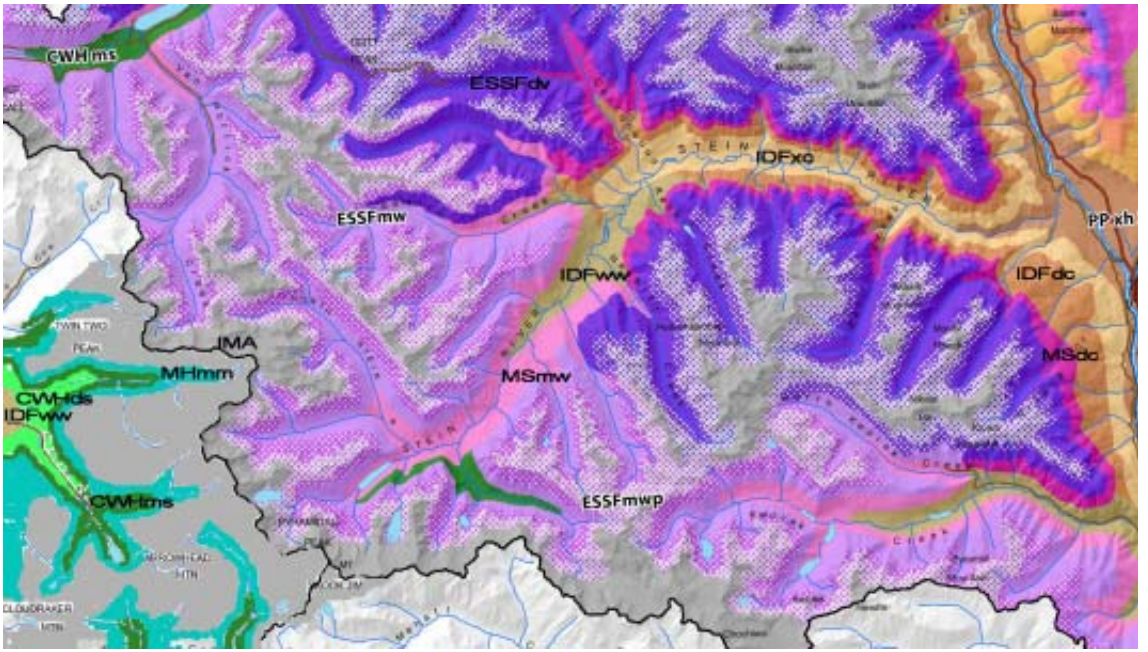


Figure 5. Biogeoclimatic subzones in the Lizzie Ck. - Stein Valley area. Adapted from www.for.gov.bc.ca/hre/becweb/

into the headwaters of the Stein. The IMA zone differs from the CMA zone in that it contains more grassy communities, particularly in drier areas, such as Cathedral Provincial Park, more widespread luxuriant flowery meadows, of which those in Mt. Revelstoke National Park and the adjacent mountains are noteworthy, and some different plant species, such as the mountain avens. Zonal sites in coastal alpine areas are covered predominantly with mountain-heathers – white moss and pink – while zonal sites in southern interior alpine areas are more variable, containing more grasses and dwarf willows, in particular, as well as the heathers. Stunted trees, or krummholz, in alpine areas are typically mountain hemlock in coastal areas and subalpine fir in interior areas, although other species, such as whitebark pine and Engelmann spruce, are also present. In northern interior alpine areas widespread grassy tundra areas are common, as are dwarf willow and birch. Blueberry / huckleberry species change from almost exclusively Cascade (or blue-leaved) huckleberries in southern coastal alpine areas to mixtures of species in the interior, including dwarf blueberry, grouseberry, bog blueberry, and lingonberry, nearly all of which are delicious.

The first forests you encounter in the Stein valley indicate you are in the Moist Warm Engelmann Spruce – Subalpine Fir (ESSFmw) subzone. A more continental climate than on the coastal side of the divide results in Engelmann spruce and subalpine fir being the dominant trees in high elevation forests here and throughout most of BC's interior, except the Interior Wet Belt areas in the valleys of the Columbia Mountains, the middle section of the Rocky Mountain Trench, and the valleys east of the Coast Mountains near the southern Alaskan Panhandle (Figure 1). The spruce and subalpine fir replace the mountain hemlock and amabilis fir of the coast.

Surrounding Stein Lake and occupying the valley bottom for much of the upper Stein is the Moist Warm Montane Spruce (MSmw) subzone. Due to past relatively frequent fires, lodgepole pine is (was) one of the most common trees in the MS zone. Subalpine fir, hybrid Engelmann spruce – white spruce, and Douglas-fir are also present. Soopolallie and pinegrass, not seen on the coastal side of the divide,

become relatively common. Down valley from the MS zone, the trail enters the Wet Warm Interior Douglas-fir (IDFww) subzone, previously seen around Lillooet Lake. Here Douglas-fir and lodgepole pine become the dominant trees, with western redcedar appearing on the moister sites. This IDF subzone gives way to the Very Dry Cold Interior Douglas-fir (IDFxc) subzone upstream from the confluence of the Stein with Cottonwood Ck. In this drier subzone the abundance of western redcedar and shrubs declines, the redcedar being restricted to the wetter sites. The IDFxc subzone continues down valley for some distance. Heading upslope one encounters a band of Dry Cold Interior Douglas-fir (IDFdc) forest, then a band of Dry Cold Montane Spruce (MSdc) forest, and finally a band of Dry Very Cold Engelmann Spruce – Subalpine Fir (ESSFdv) forest before the Interior Mountain heather Alpine (IMA) zone is again reached.

Continuing down-valley, the trail remains in the IDFxc subzone for some distance, until considerably below Earl Ck. where ponderosa pines begin to become very common. Here one enters the Very Dry Hot Ponderosa Pine (PPxh) subzone. Douglas-fir and lodgepole pine trees are also present and the ground vegetation is dominantly grassy, with some shrubs. Older forests tend to be quite open as there is insufficient precipitation to support dense accumulations of large water-demanding trees, unlike at higher elevations or at low elevations in coastal areas. The PPxh subzone continues and expands in width all the way to the trailhead and Lytton.

The Lizzie Ck. to Fraser River trail involves walking through 8 of BC's 16 different ecological zones – fully half the zonal diversity of the entire province. I am not aware of any other trail which takes in so much of BC's plant diversity.

Ecological subzones / site series - the Black Tusk trail

A trip up the Garibaldi Lake trail to the Black Tusk (Figure 2) involves starting in the trail head car park at the edge of the Dry Submaritime Coastal Western Hemlock (CWHds) subzone, ascending up through the Moist Submaritime Coastal Western Hemlock (CWHms) subzone to just below The Barrier, then up through the Moist Maritime Mountain Hemlock (MHmm) subzone, initially through the forested portion, then through the parkland portion (Black Tusk Meadows), and finally up into the poorly vegetated and generally rocky Coastal Mountain-heather Alpine (CMA) zone (subzones have not yet been delineated for BC's alpine BEC zones). Much of this route passes through climax vegetation, but logging around the trail head, rockfall from a past collapse of The Barrier, and disturbance by past forest fires, strong winds, and snow avalanches, have all reduced the area actually covered by climax vegetation and allowed vegetation characteristic of disturbed (usually open and more exposed to sun and the weather) conditions to flourish. Red alder trees, pearly everlasting, and fireweed are good examples of the more common plants found in disturbed areas in and around Garibaldi Park. This complicates our observations and interpretations of flora and ecosystems. An additional complicating factor, typical of many 30-100 year old forests in BC, particularly those regenerating after fire, is that tree canopies tend to be very dense, decreasing the amount of sunlight penetrating to the ground surface. Little sunlight results in little plant growth and many plant species that should be in an area may not be found there (Figure 6). The trailhead carpark is surrounded by a young Douglas-fir - black cottonwood - red alder forest with some western redcedar and western hemlock. The ground is quite rocky and gravelly - generally indicating poor soil. The trail starts traversing through a narrow strip of Douglas-fir trees over moss (mostly step moss) - lichen (pelt lichen) and a few herbs (mainly prince's pine) and shrubs (mainly falsebox and kinnikinnick). This is likely a Douglas-fir - Western Hemlock Falsebox site series, which is drier than the zonal one, due to its abundant rock and gravel, which do not hold water very well and dry out quickly (Figure 7).

Figure 6. Dense forest near the trail with little ground vegetation. Photo: M. Feller.

Figure 7. Douglas-fir - Western hemlock - Falsebox site series at the start of the trail.

Figure 8. Western redcedar - Solomon's-seal site series along the early section of the sidehilling trail.

Figure 9. Amabilis fir - Western redcedar - Devil's club site series. Photos: M. Feller.

As the trail starts climbing, western hemlock and western redcedar trees appear as well as swordfern, false Solomon's-seal, thimbleberry, Douglas maple, and red huckleberry. The soil here is deeper and no longer containing as much gravel and rock as at the trail start. Hence, it is richer and the vegetation suggests that we are in a Western redcedar - Solomon's-seal site series (Figure 8).

As the trail continues its long sidehilling, an occasional amabilis fir tree and Alaskan blueberry bush appear and Douglas-fir becomes less common, indicative of a cooler climate. Oval-leaved blueberry is also present, as well as queen's cup, wintergreen, foam flowers, and bunchberry. For most of the first 2 km of trail, the site series present are the Western redcedar - Solomon's-seal and the wetter and poorer Western hemlock - Queen's cup site series. By the second creek crossing (around 1 km), the forest appears to be young old-growth with much regenerating western hemlock and western redcedar trees, but few dead old trees, characteristic of old-growth forests.

In the gulley of the fourth creek the trail crosses is the first devil's club. This grows over foam flowers, clasping and rosy twistedstalks, lady fern, thimbleberry, and deer fern. In the next broad gulley, the devil's club occurs over a wider area and the trees are mainly western redcedar with some amabilis fir. The vegetation suggests we are now in the moist submaritime Coastal Western Hemlock subzone and in the Amabilis fir - Western redcedar - Devil's club site series (Figure 9). This is one of the richest and wettest site series in the subzone (see Figure 3).

Continuing along the trail - after a major creek crossing the slope becomes more gentle and the ground surface becomes very mossy (step moss, pipecleaner moss, and lanky moss being common) with bunchberry and queen's cup the dominant herbs and blueberry and red huckleberry bushes the dominant shrubs. This is the first example of the moist submaritime Coastal Western Hemlock subzone zonal site series - the Western hemlock - Amabilis fir - Step moss site series (Figure 10) traversed by the trail.

Amabilis fir becomes more common as the trail climbs up, particularly above the first set of switchbacks. Around 1000 m in elevation, the first black huckleberry and five-leaved bramble appear, indicative of higher elevation cooler forests. The first white-flowered rhododendron, also indicative of higher elevation cooler forests, appears around km 3.5.

At km 4 the trail passes the edge of an old talus slope that is becoming vegetated (Figure 11). In the absence of fire this area will become a forest hundreds of years hence, as the cracks between the rocks get filled with plant litter, particularly from falling trees.

Around km 4.8 the first Indian hellebore (the only major poisonous plant present) appears. Shortly

Figure 10. The zonal Western hemlock - Amabilis fir - Step moss site series near km 3.5 on the trail.

Figure 11. Old Talus slope at km 4 slowly becoming vegetated.

Figure 12. The zonal Mountain hemlock - Amabilis fir - Blueberry site series near the trail junction. Photos: M. Feller.

thereafter false azalea and oak fern also appear and black huckleberry becomes very abundant. After km 5 mountain hemlock trees appear and Douglas-fir trees become scarce, disappearing before km 6. The vegetation tells us that we are passing into the Mountain Hemlock zone.

From around km 5.5 all the way to the Garibaldi Lake - Black Tusk meadows trail junction the trail passes mainly through the zonal Mountain hemlock - Amabilis fir - Blueberry site series where the two dominant tree species occur over shrubs dominated by white-flowered rhododendron and black huckleberry. Some oak fern is present. and the ground surface is covered with mosses, including pipecleaner , electrified cat's-tail, and dusky fork moss, and red-stemmed feathermoss (Figure 12).

The zonal site series continues beyond the trail junction (Figure 13) until moister flat areas are reached. Here the first subalpine species - pink mountain-heather, Cascade huckleberry and partridgefoot - can be seen. The latter is quite common in disturbed areas, such as hiking trails, and often lines their edges. Sitka mountain-ash, and five-leaved bramble are also present. Yellow cedar can be seen (and smelled) below the trail in moister flatter areas. These moister flatter areas probably contain the Mountain hemlock - Yellow cedar - Deer-cabbage site series.

Heading up the trail towards Taylor Meadows, yellow cedar trees become more common, but amabilis fir and mountain hemlock dominate. Approximately 50 m before Taylor Meadows, amabilis fir disappears and is replaced with subalpine fir, which becomes the dominant tree most of the way to treeline.

Taylor Meadows contain mountain hemlock, subalpine fir, and some whitebark pine trees. These will slowly cover the meadows (Figure 14), turning them into forest, unless a fire kills the trees or global climate change reverses itself. Whitebark pine is becoming an endangered species due to insects, and disease, so its status in Garibaldi Park is important. The meadows contain pink mountain- and white moss heathers and Cascade huckleberry, which dominate the zonal Mountain-heather site series for alpine areas. Moister site series in depressions or adjacent to creeks in gullies where snowpacks last longer are dominated by herbs, grasses, and sedges. The herbs include Indian hellebore, Sitka valerian, fleabanes, arrow-leaved groundsel, paintbrushes, partridgefoot, and leatherleaf saxifrage. The grassy vegetation is dominated by sedges, mainly black alpine sedge. These areas contain the Alpine sedge site series (Figure 15).

The trail descends from the Taylor Meadows campsite to cross Taylor Ck. The more sheltered creek gully is forested, which is opposite to what is observed at higher elevations, where trees occur on higher ground, and not depressions,

Figure 13. The trail traversing through zonal site series below Taylor Meadows.

Figure 14. Taylor Meadows filling in with trees.

Figure 15. The zonal Mountain-heather site series in the foreground with the moister, longer snowpack Alpine sedge site series in the background.

Figure 16. Examples of mixtures of the zonal Mountain-heather site series on gentle slopes and the Alpine sedge site series in depressions in the Black Tusk Meadows. Photos: M. Feller.

as it is the higher ground where snow disappears earliest which has the longest growing season, needed by trees. South-facing slopes, which also lose snow relatively early, are also favoured by trees near the treeline. Taylor Meadows appear to be within the general mountain hemlock forest, but are relatively treeless due to a past fire or cold air drainage, or a combination of the two causing an extended snowpack. Beyond the gully, the trail continues with forest generally upslope and open areas generally downslope in depressions - the usual situation for treeline areas. This forest contains amabilis fir again. Its replacement by the more cold-tolerant subalpine fir in Taylor Meadows also suggests cooler conditions in the meadows - not the best place, comfort-wise, for a campsite!

In the treeless portions of the Black Tusk Meadows area can be seen three major site series - the zonal shrubby Mountain-heather site series, the grassy Alpine sedge site series and the flowery, herbaceous Valerian site series (Figures 16 and 17). It is the latter which grabs most people's attention due to its colourful display of flowers in summer. Blue arctic lupin, yellow Arnica, groundsel, and cinquefoil, white Sitka valerian and fringed grass-of-Parnassus, western anemone, and cow parsnip, purple fleabane, and red paintbrush provide most of the colour. Pink monkey-flower (actually red in colour),

Figure 17. Examples of the Valerian site series in Black Tusk Meadows. Dominant flowers (on 10 September, 2012) were arctic lupin, Sitka valerian, and arrow-leaved groundsel (left) and arrow-leaved groundsel and common red paintbrush (right). The Valerian site series is bordered by the Mountain-heather site series in the left photo. Photos: M. Feller.

which provides its scientific name to Mimulus Creek and Lake, can be seen, but is not dominant. Beyond the meadows, the trail climbs up a forested slope above Mimulus Creek and Lake. The trees here are dominantly subalpine fir - more characteristic of the Engelmann Spruce Subalpine Fir BEC zone than the Mountain Hemlock zone. This area is mapped as Mountain Hemlock zone, but areas of Engelmann Spruce Subalpine Fir forests are mapped on the south-facing slopes above Cheakamus Lake and Fitzsimmons Creek. I believe these subalpine fir forests on the south-facing slopes above Mimulus Lake should also be in the Engelmann Spruce Subalpine Fir zone. Beyond this forest, the trail heads up to the true alpine, poorly vegetated rock of the Black Tusk.

Black Tusk trail - An afterthought

Figure 18. Billy Gray's trail heading down towards Mimulus Ck., 10 Sep., 2012.

Garibaldi Park has been emphasized in this issue. Billy Gray's trail to the Mimulus Creek campsite has fallen into disuse, but is still quite easily followed in places (Figure 18). From the campsite an old, now rarely used, trail heads up Panorama Ridge. Reactivation of this Panorama Ridge trail, together with Billy Gray's trail from the main Black Tusk trail, would allow an excellent Panorama Ridge traverse route. It would also provide access to the very attractive Mimulus Falls and to the Billy Gray memorial plaque, as well as to the nearby meadows adjacent to Mimulus Creek, where Garibaldi Park was essentially born - undoubtedly the most important historic area within the park. Billy Gray's words (see p. 56) were appropriate for him, but 100 years later, it is appropriate that that the last words he carved into the last blaze - "the task is done" - have disappeared. I don't believe the task is done for the BCMC. We must continue to protect the wilderness values of the park and convince government and BC parks to reactivate the old Mimulus Ck. - Panorama Ridge trail and adequately acknowledge the historical significance of the Mimulus Creek campsite area.

Figure 19. Billy Gray's last blaze, 100 years later. Photos: M. Feller

How to determine what BEC zone you are in

You can easily determine the BEC or ecological zone in which you are by locating yourself on one of the excellent BEC maps for different parts of the province, found on the BEC Program website given below in the references section. If you do not have a map and you are in a forested area, you can locate a zonal or average site which contains old-growth forest. Identify the smaller trees that are growing beneath the large ones and these will indicate the zone. For example, you are in an old-growth forest on a zonal site in the West Kootenays where large Douglas-fir, lodgepole pine, or western larch dominate the tallest layer of trees. Growing up well beneath them you observe either western hemlock, western redcedar, or mixtures of these, together with perhaps some other conifers, such as white spruce or subalpine fir. The dominance of the hemlock and/or redcedar indicate you are in the Interior Cedar Hemlock (ICH) BEC zone where western hemlock and/or western redcedar are the dominant climax tree species on zonal sites.

If you are in non-forested, relatively undisturbed areas, you may be in lower elevation grasslands in the Cariboo or southern interior, in which case you are in the Bunchgrass BEC zone, or you may be at higher elevations or higher latitudes, in which case you are in an alpine zone. If you are close to the coast, deep in the southern interior or northern interior, the alpine zone is obvious – Coastal Mountain-heather Alpine (CMA), Interior Mountain-heather Alpine (IMA), or Boreal Altai Fescue Alpine (BAFA), respectively. The transition areas between these alpine zones can cause problems as there is always overlap in such areas, but you have the abundances of the dominant plant species to guide you. In southern BC, the CMA – IMA boundary is said to occur along the ridges from the east side of Manning Park to Tulameen Mtn., to Coquihalla Mtn., to the divide east of the Fraser River, to the Nahatlatch, to Twin One Ck. Then all alpine areas east of the Lillooet River up to North Ck. are IMA, whereas areas to the west are CMA. It is interesting that North Ck., site of a club cabin, forms a divide between CMA to the west, and IMA to the north and east. Some of the major differences between the CMA and IMA in plant communities are given above.

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Does Marek realize he is passing over a very dry site series in the Coastal Western Hemlock zone on Judge Howay? (See p. 42) Photo: B. Trenholme.

Scientific and common names of plant species mentioned

Common name	Scientific name	Common name	Scientific name
Alaskan blueberry	*Vaccinium alaskaense*	Lingonberry	*Vaccinium vitis-idaea*
Amabilis fir	*Abies amabilis*	Lodgepole pine	*Pinus contorta*
Arctic lupin	*Lupinus arcticus*	Mountain hemlock	*Tsuga mertensiana*
Arrow-leaved groundsel	*Senecio triangularis*	Oak fern	*Gymnocarpium dryopteris*
Black alpine sedge	*Carex nigricans*	Oval-leaved blueberry	*Vaccinium ovalifolium*
Black cottonwood	*Populus balsamifera* ssp. *trichocarpa*	Paintbrushes	*Castilleja* spp.
		Partridgefoot	*Luetkea pectinata*
Black huckleberry	*Vaccinium membranaceum*	Pearly everlasting	*Anaphalis margaritacea*
Bog blueberry	*Vaccinium uliginosum*	Pelt lichen	*Peltigera* sp.
Broad-leaf maple	*Acer macrophyllum*	Pine grass	*Calamagrostis rubescens*
Bunchberry	*Cornus canadensis*	Pink mountain-heather	*Phyllodoce empetriformis*
Cascade huckleberry	*Vaccinium deliciosum*	Pipecleaner moss	*Rhytidiopsis robusta*
Cinquefoil	*Potentilla* sp.	Ponderosa pine	*Pinus ponderosa*
Clasping twistedstalk	*Streptopus amplexifolius*	Prince's pine	*Chimaphila umbellata*
Cow-parsnip	*Heracleum lanatum*	Queen's cup	*Clintonia uniflora*
Deer cabbage	*Fauria crista-galli*	Red alder	*Alnus rubra*
Devil's club	*Oplopanax horridus*	Red huckleberry	*Vaccinium parvifolium*
Douglas-fir	*Pseudotsuga menziesii*	Red-stemmed feathermoss	*Pleurozium schreberi*
Dusky fork moss	*Dicranum fuscescens*	Rosy twistedstalk	*Streptopus roseus*
Dwarf birch	*Betula glandulosa*	Sitka mountain-ash	*Sorbus sitchensis*
Dwarf blueberry	*Vaccinium caespitosum*	Sitka spruce	*Picea sitchensis*
Dwarf willow	*Salix* spp.	Sitka valerian	*Valeriana sitchensis*
Electrified cat's-tail moss	*Rhytidiadelphus triquetris*	Soopolallie	*Shepherdia canadensis*
Engelmann spruce	*Picea engelmannii*	Step moss	*Hylocomium splendens*
False azalea	*Menziesia ferruginea*	Subalpine fir	*Abies lasiocarpa*
False Solomon's-seal	*Smilacina racemosa*	Swordfern	*Polystichum munitum*
Falsebox	*Pachistima myrsinites*	Thimbleberry	*Rubus parviflorus*
Fireweed	*Epilobium angustifolium*	Western anemone	*Anemone occidentalis*
Five-leaved bramble	*Rubus pedatus*	Western hemlock	*Tsuga heterophylla*
Fleabanes	*Erigeron* spp.	Western larch	*Larix occidentalis*
Foam flower	*Tiarella trifoliata*	Western redcedar	*Thuja plicata*
Fringed grass-of-Parnassus	*Parnassia fimbriata*	White moss heather	*Cassiope mertensiana*
Grouseberry	*Vaccinium scoparium*	White spruce	*Picea glauca*
Indian hellebore	*Veratrum viride*	Whitebark pine	*Pinus albicaulis*
Kinnikinnick	*Arctostaphylos uva-ursi*	White-flowered rhododendron	*Rhododendron albiflorum*
Lady fern	*Athyrium filix-femina*	Wintergreen	*Pyrola* sp.
Lanky moss	*Rhytidiadelphus loreus*	Yellow cedar	*Chamaecyparis nootkatensis*
Leatherleaf saxifrage	*Leptarrhena pyrolifolia*