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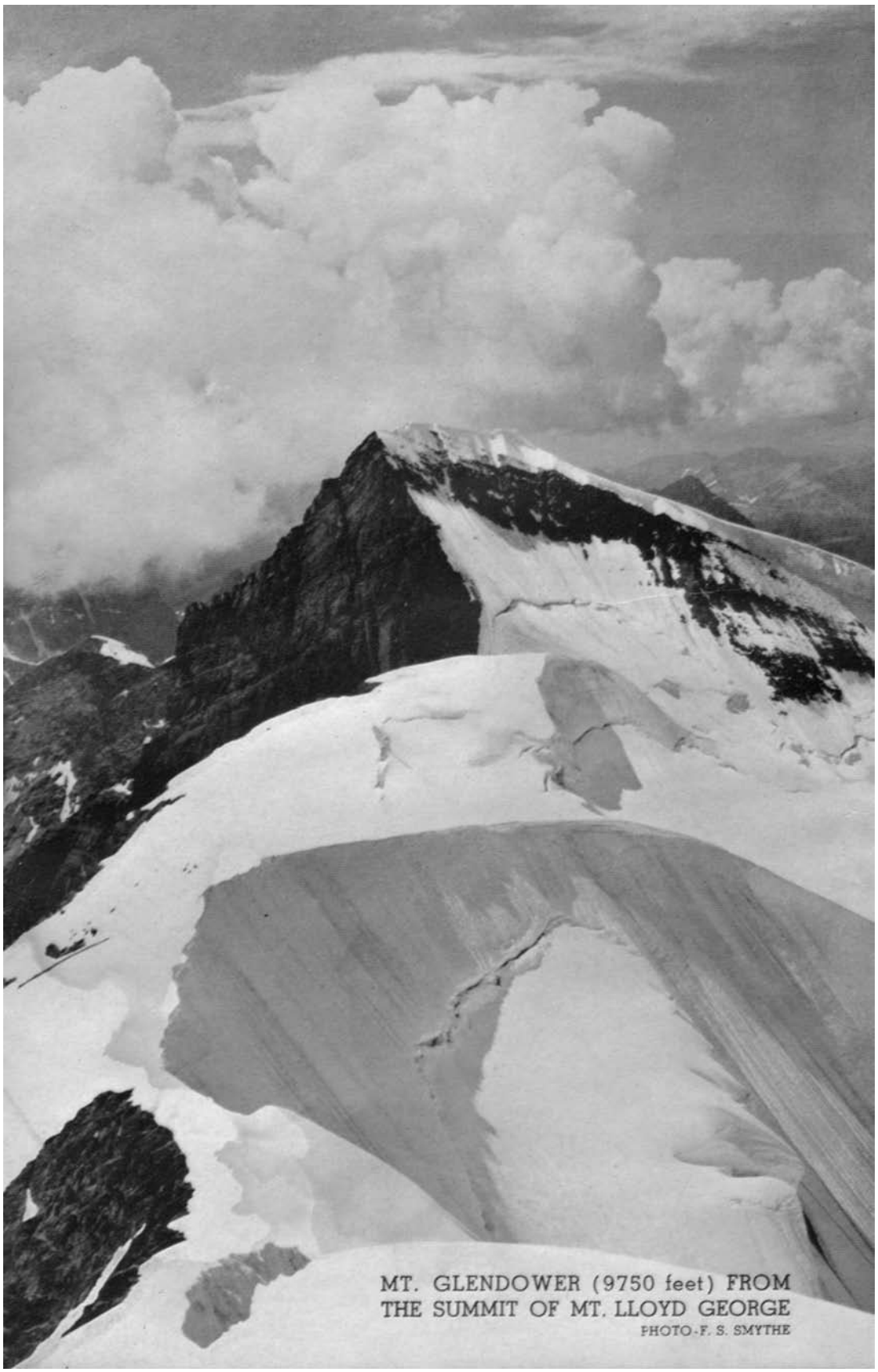

MT. GLENDOWER (9750 feet) FROM
THE SUMMIT OF MT. LLOYD GEORGE
PHOTO-F. S. SMYTHE

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THE BATTLE RANGE

BY NORMAN H. BREWSTER

There is for every one of us a simple word or two, some phrase which, for us alone, will evoke the memories and the mood of exaltation and high romance. Such, for me, are the words, "Battle Range," for they call forth no describable experiences but rather the return of my old dreams of their remote, dark peaks and the awareness of their beauty "lone and like a candle clear in this dark country of the world," and they call back the years when my thoughts wove a spell of enchantment about them. It is such a mood, the synthesis of all joyful and beloved memories of the hills, which is vital and compelling enough in spite of its tenuous quality, to overcome the restraining knowledge of our own shortcomings, and of discomforts and hardships, and cause us to set out again toward some distant peaks.

The mysteries of the Battle Range intrigued me when I first unfolded the map of Glacier Park and saw its large blank area lying along the southern border of the park. During my first year in Glacier I caught glimpses of its ice-clad, granite peaks, and my interest grew as I turned to the works of Wheeler and Palmer for information. One cannot escape the conclusion that Palmer, in particular, was fascinated by these peaks, for he returns to them so frequently in the pages of his book, and even after his arduous attempt to reach them had failed he refers to them again with undiminished curiosity.

If all the peaks in Thorington's *(Guide to the Interior Ranges)* delineation of the Battle Group are included, it is a long range, stretching from the Beaver River southwesterly to the Incommapleux River. Previous to 1947, one or two peaks had been climbed on the lower, western end of the range. The eastern end, being accessible by a trail up the Beaver Valley to the early climbers based at Glacier House, has an interesting early history which begins with the ascent of Mt. Sugarloaf (10,732) by Forster, Huber and Topham in 1890 and terminates with the conquest of an unnamed peak of about 10,400 feet by Butters, Holway and Gilmour in 1914. However, the great, central portion of the range which apparently contains the highest peak remained untouched in spite of various attempts to reach it.

The difficulties lie in that the approach must be made on foot over exceedingly rough country, which entails backpacking enough food and equipment to sustain a long, hard trip, and also in the formidable problem presented by the granite walls of the range itself.

They were well described by W. S. Drewry, D.L.S., in his report of triangulation in the railway belt during 1892. Drewry had crossed Flat Creek Pass, and proceeded down Fish River (now marked Incommapleux River) to Battle Creek which flows along the northern side of the Battle Range. He says of his ascent of Battle Creek: "I had travelled through some rough country, but that into which we then entered exceeded anything I had ever imagined to exist in Canada. On the first day we travelled from 9:00 a.m. until 6:30 p.m., and made two miles; while not more than three miles was accomplished in any one day."

In an attempt to place a signal on a prominent peak he was turned back by "walls of granite and syenite . . . at some points exceeding two thousand (feet)" which rise out of Battle Creek. Later, Drewry succeeded in climbing a peak some distance further west, at the lower end of the range.

In 1945, Andy Kauffman of the Harvard Mountaineering Club, and his wife, Betty Kauffman, reconnoitred the same approach but succeeded only in confirming the accuracy of Drewry's description. However, on their return to Glacier it was decided that we should make a serious attempt on the range the following summer.

With this in view, in May 1946 I made a trip to Beaton, a village located on the northeast arm of the Upper Arrow Lake at the mouth of the Fish River. I went about ten miles up the river on an old mining road to where I could view the western end of the range, and I also received at the same time some valuable information from Gray Metzler who has for many years run a trap line near the mouth of Kellie Creek. This creek flows along the southern side of the Battle Range in a narrow, precipitous valley very similar to that of Battle Creek on the northern side. I concluded that it was possible to climb directly from Fish River to timberline and then traverse along the southern side of the range toward the central peaks. In retrospect, this decision which eventually proved to be valid enough, seems to have been based more on a "hunch" than on acute observation. However, the main factor which disposed me to favour it in subsequent discussions of routes was that it was certainly the most direct approach to the range. On the advice of Metzler I ruled out the possibility of forcing a way up Kellie Creek.

In mid-August of the same year the Kauffmans arrived from Alaska where they had successfully ascended Mt. St. Elias with the Harvard Mountaineering Club expedition. They looked disconcertingly robust to me and my suspicions were confirmed as they helped me stagger the few yards to the railway station with my pack. The weather was definitely of the Selkirks, inauspicious, and at that time Glacier was full of patient, sodden Iowan mountaineers with whom, I couldn't help thinking, I should probably be happy to exchange lots in a day or two.

However, as we went by train from Glacier to Arrowhead the weather improved and crossing the lake on the tugboat Beaton we enjoyed a beautiful view of the Thor and Odin massifs of the Monashee Range, under the clearest skies. While on board the good ship Beaton we learned that a party of American climbers had left the district only a few days before, after having spent about a month in the Battle Range area. Later we learned that they had not succeeded in reaching the central peaks.

In Beaton, Andy and Betty discovered their friend Bert, a prospector with whom they had camped during the previous summer when they were in the valley of Fish River. This meeting resulted in a long evening of discussion and argument which ended in a decision to change our plans and make our approach via Poole Creek, which enters the Fish River only five miles above Beaton. Such a long, indirect route did not attract me, but in the end Bert's charming enthusiasm and perhaps some wishful thinking on my own part overcame my resistance. The actual words I could never remember but I do recall my distinct impression, when we left Bert's home that night, that our journey was to be a delightful walk over flowery, alpine meadows, right to the base of the fabulous peaks. I had even forgotten about my pack.

One of our most agreeable memories will always be the comforts of Mr. and Mrs. Bob. Smith's Beaton Hotel, and the epicurean cuisine thereof. With Mrs. Smith's aid we started for the Battle Range, serenely full, each of us confident "fate cannot harm me — I have dined today." We therefore began our first day of backpacking with quite inappropriate luxury, for we were then transported by taxi to the old mining village of Camborne at the mouth of Poole Creek. But there, I

at any rate came to grips with reality for I found my heavy pack to be dreadfully oppressive, and as I walked slowly up the creek there was only a small corner of my consciousness able to appreciate somewhat desperately the attractiveness of the scene, the extraordinarily good trail cut through solid rock along a narrow gorge, and the green, tumbling waters far below,

Bert's cabin was reached early in the afternoon and was at a lower level than we had expected. Next morning we climbed the walls of the steep cirque which forms the head of the valley, and in the afternoon crossed its rocky rim and found ourselves on the edge of a broad glacier which forms the main source of Boyd Creek. Here we faced one of the problems of travel in unfamiliar mountains. We could not estimate how long it would take us to reach a camping spot so finally decided to turn back. Dropping down about a thousand feet before reaching a suitable campsite, we passed five lovely miniature lakes set jewel-like in the rock at different levels. Each was a separate, vivid shade of green and the most spectacular had a small glacier flowing into it.

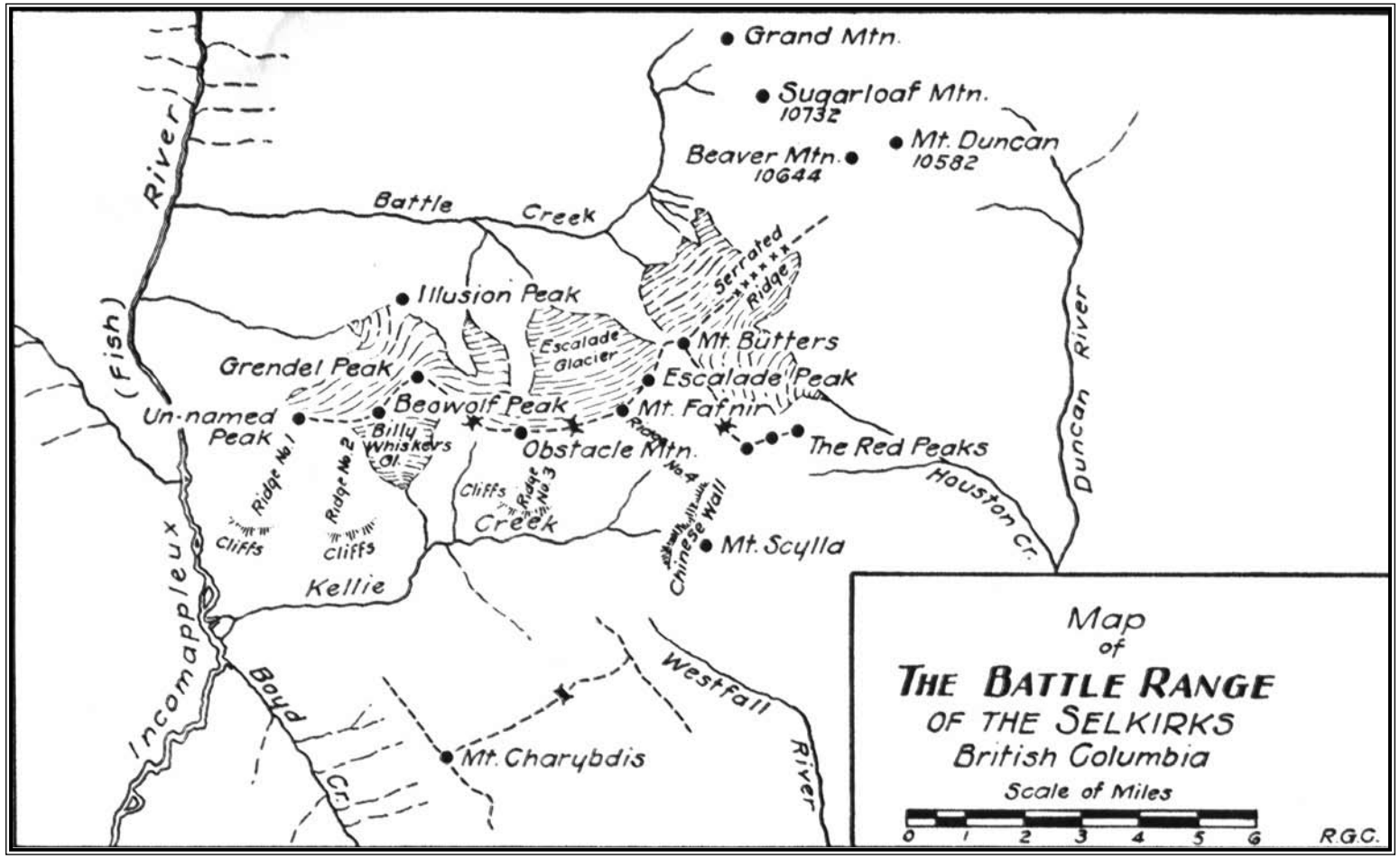
We ascended quickly on the following morning and began to cross the névé in a northeasterly direction. There was a glorious view of high, glaciated peaks in every direction, most of them, so far as we know, being unclimbed. But our gaze was chiefly on the Battle Range which we now saw at a distance of perhaps fifteen miles. The dominating, central peak we called "Mt. Butters" and proposed to take whatever steps we could to make this designation official, as a gesture of respect toward the late F. K. Butters, one of the early explorers of the Selkirks. We were surprised and much pleased to learn, some weeks later, that this had already been done by others.

At the northern edge of the glacier the slopes became severe and we were forced to cross some difficult ribs of rock. Eventually we reached the final ridge and looked down into the head of a steep, narrow valley containing a brook which flowed toward Boyd Creek. In the centre of this rocky ravine was a small eminence of heather and scrubby trees, our obvious campsite as it was the only level spot to be seen.

At this point our trip came close to ending in disaster. While descending a short, steep snow slope Betty slipped. The slope extended about sixty feet below her, and in that short space her quick attempt to brake with the pick of her axe was not effective. As her feet reached the scree, the heavy pack hurled her forward and she described three huge bounds through the air, smashing down on the rocks first on her face, then her back, and again her face. When I reached her I saw that her face was a mask of blood. But it quickly appeared that by miraculous good fortune she had escaped serious injury. The blood came from one small, deep puncture in her upper forehead, one knee was bruised and beyond that she suffered only a few superficial abrasions. We were able to proceed down to the heather where we made camp and began to treat Betty's wounds and apply hot fomentations to her knee.

While we were so engaged a large and competent-looking grizzly bear appeared over the ridge and began to descend nonchalantly into our camp, entirely oblivious of our shouts of alarm. The rifle, which I had declared to be a superfluous weight on Andy's huge pack suddenly assumed a new value. The bear had come to within a hundred yards of us, when for some reason the mere click of the rifle bolt persuaded him to depart in a tremendous hurry. I shall never cease to wonder if the same rather ludicrous anticlimax could not have been produced by any kind of click.

Betty insisted on the following morning that she should go on, so we spent a long day above timberline contouring around the flanks of two unnamed peaks. Although their slopes were carpeted with acres of gorgeous flowers they were treacherously steep and slippery. There is no doubt that we were all somewhat unnerved by the events of the previous day, a fact that I recall with particular admiration for Betty's courage. It was with relief that we arrived late in the afternoon at


Grand Mtn.
Sugarloaf Mtn.
10732
Mt. Duncan
10582
Beaver Mtn.
10644
River
Battle Creek
Serrated Ridge
Illusion Peak
(Fish)
Escalade Glacier
Mt. Butters
Grendel Peak
Escalade Peak
Beowolf Peak
Mt. Fafnir
Un-named Peak
Billy Whiskers Gl.
Obstacle Mtn.
The Red Peaks
Ridge No. 1
Ridge No. 2
Ridge No. 3
Ridge No. 4
Cliffs
Cliffs
Cliffs
Creek
Chinese Wall
Mt. Scylla
Houston Cr.
Duncan River
Incomappleux
Kellie
Boyd
Cr.
Mt. Charybdis
Westfall
River
Map
of
THE BATTLE RANGE
OF THE SELKIRKS
British Columbia
Scale of Miles
0 1 2 3 4 5 6
R.G.C.

the attractive little pass which lies at the head of Boyd Creek's most northerly fork.

We were now at the watershed between Boyd Creek and the Westfall River. North of us, appearing tantalizingly close, lay the Battle Range, dominated by the mass of Mt. Butters. But it was plain that we must descend into the head of the Westfall Valley. High above the steep cliffs that walled its end we could discern the edge of a glacier which might lead us toward our goal.

We spent a comfortable night on the pass, and early next morning scrambled down the cliffs on the Westfall side and began a long traverse on some terraces of quartzite. Our progress was unusually easy and we were able to examine the surroundings as we went along. Toward the southeast rose a group of sharp pinnacles locally known as the Badshot Range, the highest one being Mt. Templeman (10,000 feet). From our position they appeared excessively steep and difficult, reminiscent of pictures we had seen of peaks in the Bugaboos.

Abruptly we were halted by a chasm cutting across our path, of such desolate and sinister appearance that we unanimously dubbed it "The Devil's Gulch." Two thousand feet below us a glacier crowded through narrow walls of rock, flowing at right angles into the Westfall Valley. We were unable to see what lay between us and the glacier. After a somewhat pessimistic discussion we ventured over the brink and were agreeably surprised to find the cliffs broken with comfortable ledges which eventually led us on to the ice. Thence by a long, uneasy traverse on steep scree between two belts of cliff we reached the bottom of the valley.

Our route for the morrow lay before us clearly. Four thousand feet above was our objective, the glacier seen from our last camp. Our eyes traced a path, through a thousand feet or so of slide alders, up and across a tremendous slope of talus, over some final scree and on to the ice. We did not relish the idea of the initial bushwhacking but it appeared unavoidable, the alders being flanked by granite cliffs of tombstone smoothness.

Early in the morning we were battering and pulling-our way through the alders. By noon we had reached the glacier and could examine the towering peaks of the Battle Range close at hand. Confidently we talked of bivouacking, in a few hours, on the rocks of Mt. Butters. But as we trudged across the névé the picture changed. The gentle swells of the névé suddenly plunged into a tremendous gorge at the head of Kellie Creek. To traverse around the head of the valley was impossible as the rock confining the glacier was smooth and perpendicular.

But at a higher level the ice came near the crest of its containing wall. We were sure that there must also be a glacier on the opposite side and this might offer us an avenue of detour. A short but difficult rock climb brought us to the crest — and the end of our last hope. We looked down the truly perpendicular sides of an immense granite wall, at this point about 4,400 feet in height and stretching in a shallow curve for at least a mile. There was no break in its vertical angle and the hour or more we spent on its length simply confirmed our first impression that descent on the eastern side was impossible. The glacier immediately below us on that side was the ultimate source of Houston Creek and gazing down the valley we recognized the familiar outlines of the northern Purcells.

Retracing our steps we again considered the possibility of descending into the valley of Kellie Creek. We did not know what lay below us in that direction, except that the angle must be excessively steep. Providing that we could reach the valley bottom by nightfall and on the following day were able to ascend the precipitous, lower walls of the Battle Range, we might reasonably hope to climb Mt. Butters on the third day. We should then require a minimum of four days to return to Beaton. But as our present food supplies would barely cover four more days, we were forced reluctantly to admit defeat.

This decision, although grudgingly arrived at, seemed to relieve us of a burden, and under the stars that night in the Westfall Valley we feasted recklessly on pancakes and the last of our jam. Next day, by virtue of lightened packs and familiar terrain we made the long journey to our "accident" camp, arriving in a furious storm of thunder and hail.

In drizzling rain we crossed on the following day to Belt's cabin, where we finished the last crumb of our supplies. The final leg of the journey was an easy walk down the good Poole Creek trail. Early in the afternoon we arrived at Camborne, located its one telephone, and summoned the taxi from Beaton.

Our attempt, while failing utterly to obtain its objective, did throw some light on possible alternative routes. In looking down Kellie Creek along the southern side of the range we saw that between the sheer walls that rise from the valley and the actual peaks there appeared to be a terrace which might afford access to the high peaks immediately west of Mt. Butters. Thus it appeared that the route we had first intended to follow had a good chance of being successful.

The view down Houston Creek also showed that the approach to the eastern end of the range via the Beaver Valley and Beaver-Duncan summit could be continued to the head of Houston Creek, where one would be opposite Mt. Butters. This approach shares the advantage of the route mentioned above, in that it is not necessary to cross a number of deep valleys. But it is very long, and probably involves a great deal of bush travel. At any rate, from all we had read of attempts on the northern side, and from what we ourselves had seen of the southern side of the Battle Range, we concluded that one of these two routes must eventually be used to reach Mt. Butters.

Returning from our vain attempt of 1946 I was profoundly oblivious to the imagined charms of the Battle Range, being, in fact, spurred on by a single-minded desire to leave the whole severe and exhausting region forever. It seemed to me that I could be content to take a merely academic interest in future attempts to explore the range.

But a life of ease soon restored all my illusions, and the following winter found me corresponding hopefully once more with the Kauffmans. In the springtime I received word that Andy was seated at a sewing machine, stitching a magnificent new Battle Range tent, and I knew that the die had been cast. There remained only the crucial decision as to what route we should follow.

During the winter Andy and Betty had been in touch with Terry Baker, one of the party who had spent several weeks in the area the previous summer. Terry, having climbed Illusion Peak on the western end of the range and having also observed the range from other points of vantage, seemed to feel that it was impossible to traverse along the east-west axis as we had hoped to do. We carefully considered an alternative, which we all found attractive, of following the Beaver-Duncan trench to Houston Creek and ascending the latter, but eventually decided against it. I do not think our decision was influenced in any way by learning, about this time, that a party of climbers led by Sterling Hendricks would probably attempt to reach Mt. Butters by a somewhat similar route; the knowledge was however interesting and stimulating and gave rise to much speculation then and later. We really hoped to meet Sterling on the summit of Mt. Butters in a dramatic Stanley-Livingstone scene.

In the end we returned to the original plan of the direct approach by way of the Fish River.

We landed in Beaton on July 5 with the 300 lbs. of provisions and equipment upon which we proposed to rely for at least three weeks. Before leaving the village we met Gray Metzler, whose conservative but meticulously correct advice we had to our sorrow failed to follow the

year before, and who now graciously offered us the privilege of using his cabin at the mouth of Boyd Creek. Just about dusk that evening a logging truck dumped us at George Edge's farm, eight miles up the Fish River, a clearing of startling beauty in the forest of massive cedars and tangled undergrowth. Mr. Edge, who, in spite of his eighty-odd years, manages his farm alone summer and winter, offered us the use of an unoccupied house, a favour we were particularly glad to accept in view of a rapidly-approaching thunderstorm.

Next morning, having agreed not to carry loads of more than fifty pounds, we divided our supplies in half and, shouldering packs, struck up the valley. We were still following the old mining road, but the luxuriant vegetation of the Selkirks obscured it almost entirely. Nettles and other weeds reached above our heads, and as we forced a way through them we quickly became soaked to the skin, a condition to which we became thoroughly accustomed during the next few days. After some delay in crossing a flooded creek we arrived at 12-mile, where there is a cabin, and a cable crossing the Fish River. From the first, the intricacies of this aerial crossing became a popular diversion from backpacking; it was, too, one of the few places where we had an unrestricted view up the broad river to the first snow-capped peaks of the Battle Range. Early in the afternoon we reached the cabin on Boyd Creek, left our loads and hastened to return to Edge's. The following day we brought up the balance of our supplies and established ourselves in Metzler's cabin.

Impatient to learn what lay ahead, we crossed Boyd Creek at an early hour next morning and began to follow a line of blazes through a forest of immense cedars, Presently we came to the edge of a large swamp and to the grandfather of all windfalls. Some tremendous blast had cut a broad swath down the mountainside to the water's edge, sweeping huge trees into a fantastic jumble of jagged splinters which was tedious and difficult to cross. A little further along we came to "Blow-down No. 2", a somewhat smaller and less vexatious barrier.

As we picked our way through the dark, tangled forest we began to hear the torrential roar of Kellie Creek, but it was some time before we finally emerged on its south bank. It was an exciting moment when we stood at the edge of this violent stream, whose lofty glacier source we had crossed a year before, and gazed at the steep flanks of the Battle Range rising directly from the opposite bank.

Soon we had found a log jam, where the creek divided into two parts, and crossing we plunged into the forest on the north bank and began to climb at a rapidly increasing-angle. Each of us, I think, was stirred by the mere act of setting foot at last on the sides of this aloof chain of peaks, the more so because our unsparing efforts of last year had not enabled us to lay so much as a finger on one of its granite boulders.

We had hoped that the steep, south-facing hillside which we were now on might be dry, and comparatively free from undergrowth. In fact, we had leaned rather heavily on this point in choosing our route, for there was well over 5,000 feet difference in altitude between the mouth of Kellie Creek and timberline. Taking the other conditions into account, had it been much covered with brush the route would have been, at least, impractical. Happily, our surmise proved to be valid beyond our best hopes. A short distance above the creek we entered a magnificent forest of white pines and hemlocks almost devoid of underbrush.

Encouraged by the favourable conditions we ascended at a lively pace. At about 5,000 feet, reaching some cliffs, we decided to cache our packs and began our return to the cabin, weary but well satisfied with the progress made.

A long, idle day, dedicated to the recuperation of sore feet and aching muscles followed. While Betty practised culinary magic in the cabin, Andy and I spent some time brushing out the

trail as far as "Blow-down No. 2."

We reached Kellie Creek at 6:45 next morning and crossing on our precarious log jam began to climb. Not long after passing our cache of the first loads, we came to some granite bluff's, where, the ledges being choked with dirt, cautious climbing was required. From here there was a splendid view of the winding course of the Fish River, a scene which struck us as being decidedly non-Selkirkian in the U-shape of the valley and the mature curves of the river. A second series of bluffs brought us to an easier angle and soon to the first patch of snow where we tried to allay a burning thirst of eight hours' standing. Anxious now to find a suitable, campsite we plowed across an unpromising snowfield and soon came to the edge of a large basin. It", too, was snow-covered, but on the far side we descried a few patches of bare ground. There, beside a small, clear brook we made our first high camp.

We had arrived none too soon for the clouds were closing in and before long it began to rain. We hastened to pitch Andy's pride and joy, the waterproof nylon tent — to which I ought now to pay a tribute as it contributed so largely to our comfort. It successfully incorporated two usually contradictory characteristics, being at the same time both large and light. Pitched as it was now, open at both ends, it was commodious as tents very seldom are, and later during a violent storm when we closed it tightly there was still ample room for ourselves and all our impedimenta.

After spending a comfortable night it was decided that Andy and I should go down to the cache, about 2,000 feet below, and biding up the balance of our supplies, leaving Betty in camp to nurse her blistered feet. We accomplished this without delay and by early afternoon had arrived back, consolidating all our supplies once more.

It was still raining intermittently next morning as Andy and I set out on a scouting expedition. The eastern side of our basin was formed by a part of the ridge which we had, in a general way, followed up from Kellie Creek. It was the first of the four great transverse ridges which bar the way to Mt. Butters, and which (by a remarkable exercise of imagination) we named Ridges Nos. 1, 2, 3, and 4. Without our usual packs we quickly reached the crest of the ridge where a glance revealed nothing encouraging in the precipitous, ice-filled canyon lying between us and Ridge No. 2. We climbed along the ridge until, at about 9,000 feet, lashed by a high wind and unable to see ahead due to thick clouds, we turned about. We now began to descend toward the glacier in order to investigate a possible, though rather improbable, route over Ridge No. 2. This consisted of what appeared to be a chimney, or a fold in the rock of the otherwise impregnable cliffs to which a conspicuous snowpatch had directed our attention while we were climbing. But after we had crossed to the edge of the ice and stood directly under it the chimney proved to be a mere optical illusion, and having only learned that if we were to cross the ridge we must go very high we returned to camp.

Overnight the skies cleared and at 5:25 a.m. we set out with full packs, feeling the exciting sense of venturing into unknown territory. It soon became apparent that both Ridge No. 1 and Ridge No. 2 culminated in the summit which we later named "Beowulf Peak" (ca 9,600). As the ridges could be crossed only at a level very near the summit we left our packs there and scrambled up the rocks to complete our first ascent in the range. This was the highest of the group of closely-related peaks which compose the Battle Mountain massif at the western end of the range. There was no evidence of any previous ascent, although Illusion Peak, a mile or so to the north had been climbed at least three times, the first ascent being Drewry's, in 1892.

Descending to our packs we put on the rope and traversed over steep snow slopes to Ridge No. 2, anxious to see what lay on its eastern side for our increasing knowledge of Battle Range ridges

led us to expect the worst of them. Fortunately, the upper reaches of a sizeable glacier extended to the crest of the ridge, and although overhung by a tremendous cornice formed a reasonable avenue of descent. Here a desire for haste, created by the ominous knowledge of tons of snow hanging over our heads was tempered by the extreme pitch of the long slope. It was impossible to escape the threat of the cornice, due to the position of two narrowly bridged schrunds which forced us to stay directly under it. This spot, which we crossed four times during our backpacking emphasized a point of some importance to climbers in the Battle Range. Later in the season the necessity of cutting hundreds of steps in the ice on such a steep slope might render it well-nigh impassable with heavy packs. It is true that it is possible to circumvent this passage by a detour on the northern side of the range, but we found a good many similar places along the way, which led us to conclude that we were extremely fortunate in being on snow almost constantly from our first camp.

Kicking careful steps we at last reached gentler slopes where we were able to glissade and skate downward at an exhilarating rate. A turn to the left now brought us to the lowest point of the long ridge which joins Grendel and Obstacle peaks, and we began to climb again. A brief ascent along this ridge and we reached a perfect little oasis of heather and dwarf balsams in the austere surroundings of rock, ice and snow. Here, on the south side of the ridge, a few feet below its crest, we decided to camp.

A thunderstorm hastened our return to the lower camp but could not dampen our spirits for we felt that things had turned out most fortunately this day. The way was not clear beyond camp, but we were now in a position to spend considerable time in route finding.

With a little help from our persistent advocate of early rising, we had packed the tent and other equipment and were off at the unfashionable hour of 5:40 a.m. next morning. Arriving on the crest of Ridge No. 2 in good time we were beguiled by clear skies and the pleasant warmth of the early morning sun to stay a while and enjoy the view. In the whole vista of glittering peaks stretching toward the southern horizon there were few that were familiar. Opposite us, across the gorge of Kellie Creek, rose the summit of Mt. Charybdis with its striking, convoluted ice cap, and east of it Mt. Scylla on whose northern glacier our aspirations were wrecked last year. Both peaks appeared to be around 10,000 feet in height. We could now see the precipice below the tongue of Scylla Glacier and it was plain that we had acted wisely in turning back. But most compelling of all was the sight of the symmetrical spire of Mt. Templeman rising above its surrounding group of jagged towers and wedges of rock some twenty miles to the south. Templeman may prove to be a pretty problem for future climbers in the Southern Selkirks.

The increasing strength of the sun soon reminded us that it would be wise to descend, and we began carefully to kick out our faint steps of yesterday. Before noon we had reached our patch of heather and were busy setting up a new camp,

In the mid-afternoon, while we were desultorily improving our campsite and enjoying the delightful luxury of walking around barefooted, we became aware of an approaching storm on the far western horizon. It was soon apparent from the magnitude of its front and abysmal blackness that this was no passing shower. There was not much to be done—we exchanged the granite boulders to which we had fixed our tent ropes for some truly ponderous ones, made the tent as compact as possible and then had an early supper while we watched the livid clouds swallow range after range in their approach.

Our last hurried glance revealed an awesome spectacle as the mass of furiously seething clouds drove past and enveloped an outpost peak, with an ear-splitting crash of thunder suggesting its utter disintegration. Next moment the tent gave a tremendous snap and we had a momentary

Beowulf And Grendel Peaks From Camp. *Photo A. Kauffman.*

Mt. Fafnir, Escalade Pk. And Mt. Butters From Scylla Glacier. *Photo A. Kauffman.*

Western Peaks Of Battle Range. *Photo N.H. Brewster.*

Battle Range Across Westfall Valley.
Photo N.H. Brewster.

"The Devils Gulch"
Photo N.H. Brewster.

"Kellie Peak" Above Westfall Valley. *Photo N.H. Brewster.*

fear of its sailing over the cliff a few feet away. As we lay tensely in the full force of this maelstrom of wind, lightning and rain, Andy comforted us by relating detailed accounts of death by lightning in the Alps. The hours wore on and the storm raged with violence throughout the night, until early in the morning diminishing wind and the steady drumming- of rain lulled us to sleep. When we awoke, about 9:00 a.m., the rain had ceased but a quiet, steady wind blew under cold, grey skies and the ground was covered with slush. Tracks showed that a goat (probably the guardian angel of the Battle Range, in an appropriate guise) had been standing just outside our tent. Over breakfast it was decided to honour this hardy spirit by naming the glacier below on the south side the "Billywhiskers Glacier."

What we most feared was that the uncertain weather of the past ten days might settle into one of those characteristic Selkirk drizzles which sometimes go on for weeks. We therefore resolved to make a dash for Mt. Butters next day and in view of the great distance be prepared to spend the following night without shelter.

Somewhere along the line Andy had dredged up a small alarm clock, a revelation which at the time provoked incredulous laughter. But in the early hours of the next morning its insistent ringing was greeted with profound humorlessness; nevertheless we stumbled forth, to find unexpected stars glittering coldly in a clear sky, a portent which roused us to lively action.

A little after 3:00 A.M. we started briskly up the west ridge on Obstacle Mtn. At about 9,000 feet we were brought to an abrupt halt by a deep cleft which called for a rappel of some fifty feet. But from the bottom of the gap rose a long and difficult pitch. This, if we could climb it at all, would plainly consume more time than we could afford, and after some discussion we turned around and retraced our steps to near the starting point. Here we put on crampons before dropping into the basin on the southern side of the peak. After losing, in all, about 1,800 feet we were able to begin climbing once more toward the juncture of Ridge No. 3 and the apex of the mountain. As with other main north-south ridges of the range, it was found impossible to cross at a lower level. At 7:15 A.M. we reached the summit of Obstacle Mtn. and built a small cairn to mark our ascent.

It was now necessary to descend on the northern side of the range, and after some hesitation we found a route to the glacier directly below, and were able to traverse its steep slopes at a downward angle until we reached the Obstacle-Fafnir col. Here we crossed again to the southern side and continued to descend below the cliffs of Mt. Fafnir. Now we were confronted by the fourth and last great ridge. We knew from last year's observations that if we could cross this final barrier the way should then be clear, and we approached it with a silent prayer. By great good fortune the gap which we felt should exist was no mere illusion, and with vigour renewed by the realization of our hopes we were soon scrambling across the rough slopes below Escalade Peak. Before long we stood on the terminal moraine of the glacier which curves downward from the summit of Mt. Butters. Here, at much the same altitude as our now distant camp, we enjoyed a brief rest.

As we trudged up the soft snow of the glacier, we swung well away from the almost perpendicular face of Escalade Peak, there being considerable evidence of danger from falling rock and snow. For the first time we were under no compulsion to place our hands and feet carefully and so were able to examine the soaring rocks of Escalade Peak as we climbed. The name, incidentally, signifies our conclusion that an extraordinarily long ladder seemed to be called for in order to effect a lodgement anywhere on the face. Even Andy had not thought of bringing a ladder so we decided to leave this peak for the experts. From what we saw of this and other sides of Escalade, we classified it for ourselves as "impossible" and for others as "very difficult."

The snow gradually became softer and deeper, until during the last mile we were plowing

above our knees through powder snow which had evidently been deposited by the great storm. At last we reached the base of the eastern peak, the highest of four which enclose a large snowfield on the summit of this huge and massive mountain, and pulled ourselves wearily up the rocks. It was difficult to realize that this was the end of our long quest, and prosaically our immediate thought was of food. As we ate we began to take in the view which was simply overwhelming in its extent and in its intricacy of detail. Judging from the known heights of peaks to the northeast, our altitude seemed to be at least 10,700 feet. Immediately below us was the first of a line of peaks around 10,000 feet proceeding toward the east, which we had referred to last year as the "Serrated Ridge." A deep and wide gap intervened between the last of this group and the range which swings northward to include Mts. Beaver, Duncan and Sugarloaf. It appeared that there was no true identity between the northern group and the chain of peaks on which we now stood. I am under the impression that Palmer himself did not include the northern group as a part of the Battle Range, and that the mistake somehow crept in later.

During the short hour spent on the summit we built a cairn and left a note for the Hendricks party. (We met them some time later, in Glacier, and learned that they had not reached Mt. Butters.)

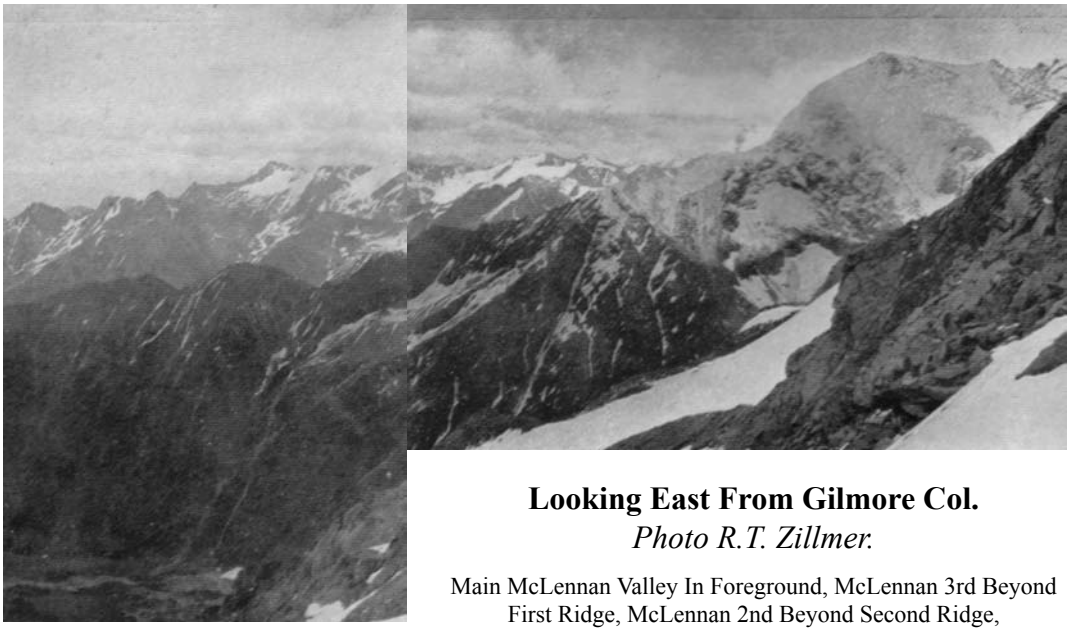
We left the peak at 2:15 p.m. and arrived at our camp about 7:00 p.m., still "running like hell," a phrase which accurately, if not quite elegantly, describes our whole day. With perfect timing Andy now produced his most dramatic, and certainly most popular, surprise — a pint of Demerara rum and we celebrated our success in a lengthy banquet.

It was after sunrise next morning when we got up, and about 9:00 a.m. when we set off to climb Mt. Fafnir. However, as we sat once more on the summit of Obstacle Mtn- contemplating the descent to the Obstacle-Fafnir col: we became filled with lethargy, and returned instead to camp. On the way back we had a good view of the upper slopes of the Billywhiskers Glacier, and in view of rapidly deteriorating snow conditions we felt it might be wise to leave. Apart from Escalade Peak, which was probably too difficult, we were not much interested in anything west of the Serrated Ridge, and those peaks posed a problem in packing which was not attractive. Consequently we broke camp, jettisoning about a week's supplies, and returned to our base camp the same evening.

No Battle Range story would be complete without a bear. The very name is derived from a legendary encounter with one. When we arrived at Kellie Creek next day we found it in flood and our log jam in bad condition. While I began to rearrange Betty's pack Andy left his own and ventured out on the logs. In a minute or so a yell, barely audible above the roar of water startled us and we saw the disturbing spectacle of Andy balancing precariously on a wet and slippery log in mid-stream while a black bear moved out on the same log from the opposite bank. However, the bear was apparently frightened by Andy's roars and soon backed up to disappear in the bush on his own side. I bent over the pack again, only to be brought to attention by renewed shouting and to see the bear once more coming doggedly toward Andy on the definitely one-man (or one bear) log. Unfortunately our rifle was lashed to Andy's pack all too securely. By the time I had released it the animal was very close to him, and I was uncomfortably aware of Andy being in the picture too as I fired. The shot knocked the bear off the log, but how seriously it wounded him we never learned, for he was able to claw his way over some brush on the lower side of the log and reach the shore where he disappeared forever.

After considerable difficulty we eventually got ourselves and our packs across the stream and before night fall arrived thankfully at Metzler's cabin. Two days later we were in Beaton, having been gone just sixteen days.

The names we bestowed on the Battle Range peaks are not official, being at this time still under consideration by the Canadian Geographic Board. While there remains considerable climbing to be done in the range, particularly the tempting first ascent of Escalade Peak, we found our interest turning to the many unclimbed peaks south of that area. Although we have no exact knowledge of this so-called Southern Lakes Group we feel sure that they can be more easily reached than the Battle Range due to mining activities in the district, and the fact that prospecting has been carried on within the area for many years. One of the things which convinced us from the first that it would be difficult to approach Mt. Butters, was the discovery that the hardy prospectors who covered the Southern Selkirks so thoroughly had left the Battle Range strictly alone.



Looking East From Gilmore Col.
Photo R.T. Zillmer.

Main McLennan Valley In Foreground, McLennan 3rd Beyond First Ridge, McLennan 2nd Beyond Second Ridge, McLennan 1st Beyond Third Ridge.

Looking South And Southeast From Tete - North Canoe Pass.
Photo R.T. Zillmer.

: Mt. Sir John Thompson And North Canoe Glacier At Right, South Canoe Glacier At Left.

THE FIRST CROSSING OF THE CARIBOO RANGE [1]

BY RAYMOND T. ZILLMER

Prior to the summer of 1947, I had taken four exploratory trips in the Cariboo Range. On the first, Lorin Tiefenthaler and I entered the range from the south and mapped the mountains at the source of the North Thompson River, but, because of lack of food, we failed in our further objective of crossing the range to the source of the Canoe River, which enters the range from the east. On our second trip, we explored one branch of the McLennan River and the source of the Canoe River, and, because of a snow storm, failed in our objective of crossing the range from the Canoe to the North Thompson. On the third trip, I explored two additional branches of the McLennan, but failed to accomplish the principal objective of crossing from the Canoe to the North Thompson. On the fourth trip with prospector Joel Nord, we completed the exploration of the McLennan, reaching the main branch next to Tête(Sand) Creek, but, because of the deep water of the Canoe River, we failed again in crossing from the Canoe to the North Thompson.

Before these exploratory trips in the Cariboos, all penetrations by mountaineers had been from the north— three via TêteCreek and one via Kiwa Creek. By our 1947 trip, I hoped to tie together the results of prior explorations. The objectives were: first, to explore an important branch of TêteCreek, to which all explorers referred but none had ever investigated; second, to cross from Tête Creek to the Canoe River; and, third, to cross from the Canoe River to the North Thompson, coming out at Gosnell, many miles to the southeast. By crossing from TêteCreek to the source of the Canoe, we would avoid the problem of crossing the Canoe River where it was deep and fast.

The matter of securing a suitable companion for my trips has always been a problem. I had promised my son, John, when he was still very young, that I would take him with me when he became fourteen.. When he reached fourteen, however, I felt that he was still too young, and that, because of the hardships, he might come to hate the very thing that I wanted him to love. The result was that I kept postponing the promised "adventure." Then came the war, and after his discharge from the Navy and a second year at Dartmouth, he was, at the age of twenty, ready for this trip. A course in climbing given by the Dartmouth Outing Club, which included roping-off from a high tower, helped him not only to meet the problems, but also to attain the mental poise required of climbers,

We arrived at Tête Jaune, British Columbia, on the Canadian National Railway, on July 9, 1947, and spent the night at the ranch of Stan J. Carr, located on the north bank of the Fraser River three miles from Tête Jaune. Stan J. Carr, a well known outfitter, is familiar with Tête Creek Valley. He has considerable sketching ability, and he drew an excellent pictorial map of the valley for us. It proved to be of great value.

We left the ranch the next morning accompanied by Carr, Art, his employee, and two pack horses carrying our duffle. We returned to Tête Jaune, crossed the railroad tracks, and began to climb gradually, passing some poor looking farms on our way to Tête Creek. When we first saw the creek, we were high above it on the northwest side. Far below was a deep canyon. Ahead, and

1 This title involves only the high portion of the Cariboos lying east of Raush River and the North Thompson. There have been many crossings between the North Thompson and Azure River and between the Azure and the Raush, but these are not over the main range and are below timberline. I know of no prior crossing between Tête Creek and the Canoe River, nor between the head of the Canoe and the head of the North Thompson, excepting perhaps by a brother-in-law of Ella Frye.

further into the mountains, the canyon walls were higher and quite spectacular. The trail took us over a shoulder and then down to the point where the river entered the canyon from the southwest. As we reached the river on the valley floor, we passed the large stone beside which Carpé had camped the first night of his trip, and where he no longer could use horses. We continued on the left side of Tête Creek, going up and down the steep mountain side, over alder slides, rock slides, and through woods. From the large stone, the valley has no trail other than animal trails, but Carr and Art chopped out a passageway in less time than it took us to follow them. Late in the afternoon—about three miles beyond the stone—we caught up with them where they had unsaddled the horses and decided to camp, At this point, Carr left us, but Art remained to take the pack horses to the head of the valley, and, if this were impossible, to backpack at least one load there.

The next morning the valley was wider, and we had our first view of its head, although we could see little of the mountains because of the clouds. On either side of us, we could see no peaks because the slopes were so steep. We were soon fording the river and walking on the bars, for the stream had many branches in the flats. This was John's first experience in fording ice-cold streams, and while he winced at first, he soon proved himself to be better than I in deep, fast water because his tight-fitting "Levis" caught less water than my baggy pants. After we had gone about a mile, we came to the large creek which enters on the south side, this being the only large branch of Tête Creek. In 1916, when Holway and Dr. A. J. Gilmore, and in 1924, when Carpé , Chamberlin, and Withers went up Tête Valley, this creek flowed from a large glacier which reached almost to the bottom of the valley. The end of the glacier was now 800 to 1,000 feet above us. I shall call them "Gilmore Creek" and "Gilmore Glacier," in honor of Dr. Gilmore, who participated in the first expedition into the" Cariboo Range.

We took two days' food for the trip to explore Gilmore Valley and Glacier, and parted with Art, who was to cache the balance of our food on a tripod in an open space. We were a little anxious about finding the cache when we returned to the main valley, for we would then be without food. We climbed next to the most easterly of the many streams. Ahead of us the conjoined single stream was so steep that it was a series of waterfalls. To our right was steep smooth rock recently uncovered by the glacier. To our left the stream flowed beside vertical cliffs which rise over a thousand feet to the first trees. We climbed immediately under the cliffs, for the smooth slabs opposite were impracticable without sneakers. We followed a goat trail, and at times climbed over piles of enormous rocks ten feet or more in diameter, or walked in the edge of the stream. Finally we came to the glacier. Here our principal difficulty was maintaining our footholds on thinly-covered, steep ice next to the main glacier and sloping steeply toward it, and on the unstable rocks and debris overlaying the ice of the older glacier which recently had entirely filled the valley from the cliffs to the top of the smooth slabs.

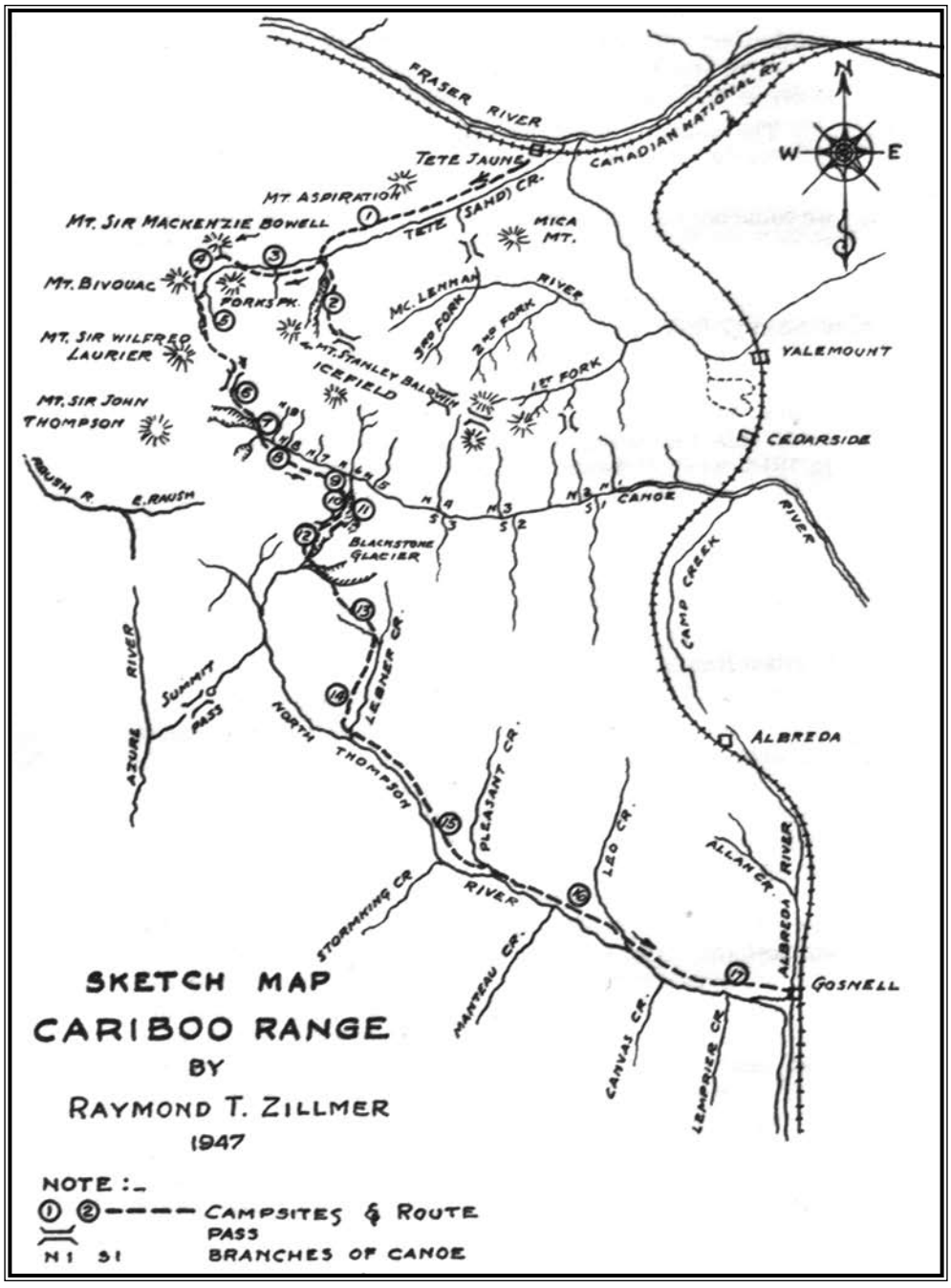
We were worried about being able to reach timber and a sufficiently level place for a camp because of the steep, unclimbable cliffs next to us. Late in the afternoon, however, we saw a few small trees several hundred feet above the glacier. By climbing the moraine which reached above the cliffs, we reached these trees growing on a very steep slope. We dug out and filled in a platform for our tent site a dozen feet from the 200-foot drop. It was so steep that we had to cut a little platform for our fire, for our dishes, for everything we placed on the slope, and even for ourselves. It rained hard all night, the next day, and the next night. The tent leaked badly and our sleeping bags were wet through in places. The tent, however, never leaked thereafter, and the moral of this experience is: "A tent which has been in the attic all winter should be soaked before using." We ate only one meal the next day, staying in our tent and sleeping almost all of the two nights and the

day. Strange to say, the time didn't seem so long. It was still raining the second morning, but as we were on short rations, we had to continue in the rain if we were to explore the head of Gilmore Glacier. After a while the clouds, which had blanketed everything, lifted, and a beautiful vista was disclosed for the first time. The glacier was heavily crevassed in a beautiful rhythmic pattern. To the southwest was a magnificent mountain, whose sheer east face adjoins the head of Gilmore Glacier where it debouches in an icefall from the high névé. This was Mt. Stanley Baldwin (Resplendent), 10,900, climbed by Carpé and Chamberlin from the head of Tête Glacier.

Gilmore Glacier flows north from the névé until it strikes the south side of a mountain between it and Tête Creek. Then it turns almost east in a much crevassed ice-fall, and in less than a mile, it flows against the mountain on which we were camped, when it again turns north toward Tête Valley. We continued on the side of this glacier until we reached the icefall. There we took to rocks and heather-covered meadows, going up steep but easy slopes on which low spruces grew. Continuing along the side of the glacier, we reached a creek which comes in from the east. To avoid losing altitude, we climbed around cliffs to reach the rather wide valley in which this creek divided into many streams. This valley had recently been occupied by a glacier, which even now reaches its south side and almost completely covers the mountain from which it flows —a mountain on the opposite side of Gilmore Glacier from Mt. Stanley Baldwin. We decided to go to the col at its head, because we believed that it would be near the source of the main McLennan. Shortly after noon, we reached the col ("Gilmore Col," I shall call it), about 9,500, and there below us was the head of the main McLennan. We saw our valley campsite of the prior year, the ridge we had crossed from McLennan 3rd, and the ridge between McLennan 3rd and 2nd. The large névé at the head of Gilmore Glacier lies between the McLennan, the Canoe, and Tête valleys. Its ice flows to Gilmore Creek, the main and 3rd McLennan, a little to the 2nd McLennan and N4 of the Canoe, and to N5, N6, N7, N8, and probably N9 of the Canoe, and possibly to Tête Valley directly. Gilmore Glacier compares in size with Tête Glacier.

During our entire trip we had unusually warm weather. Never, except in the col, did we have freezing temperature—a strange experience in the Cariboos. The coldest time on the entire trip was in this col. It was freezing, and a west wind was siphoning through the col with such force that we had a hard time standing up against it. Looking backwards from the col, we could see over the ridge to Tête Valley and across the next ridge to the mountains west of Kiwa Creek. The peak south of the col is a few hundred feet higher than the col, while the peak north of it is over 10,000. On the opposite side of the McLennan is a steep, ice-covered peak of over 10,500. We were happy that we selected such an enlightening viewpoint. We soon learned an important lesson. We had placed our packboard next to one of the many streams, and when we returned, we; could not find it. We could not have continued our trip without it. We spent an exasperating hour going up and down the various streams with no success. Finally I found my old footsteps in a snow patch and followed my former route upwards by scratches on the rock, until I was sure I was too high, and then I retraced these same scratches and footprints down from the snow patch until I found the packboard. This taught me that all caches must be carefully marked before leaving them. We returned to camp where I spent a long time trying to dry my sleeping bag in the rain—a rather interesting problem.

The next morning we left for Tête Creek. We had extended our two days' rations to three days, and we were a little uneasy when we ate our last food at noon. After having considerable trouble crossing the many fast-flowing branches of Gilmore Creek, we again reached Tête Creek. Imagine our surprise when we saw our two packs hanging from a ten-foot high tripod on a bar a


FRASER RIVER
CANADIAN NATIONAL RY.
TETE JAUNE
MT. ASPIRATION
TETE (SAND) CR.
MT. SIR MACKENZIE BOWELL
MICA MT.
MT. BIVOUAC
FORKS PK.
MC. LENNAN
RIVER
3RD FORK
2ND FORK
1ST FORK
MT. SIR WILFRED LAURIER
MT. STANLEY BALDWIN
ICEFIELD
MT. SIR JOHN THOMPSON
YALEMOUNT
CEDARSIDE
RAUSH R.
E. RAUSH
CANOE
BLACKSTONE GLACIER
CAMP CREEK
RIVER
AZURE RIVER
SUMMIT PASS
LEBNER CR.
NORTH THOMPSON
ALBREDA
PLEASANT CR.
LEO CR.
ALLAN CR.
ALBREDA RIVER
STORMING CR
RIVER
MANTEAU CR.
CANVAS CR.
LEMPRIER CR.
GOSNELL
N
W
E
S
SKETCH MAP
CARIBOO RANGE
BY
RAYMOND T. ZILLMER
1947
NOTE :-
CAMPSITES & ROUTE
PASS
BRANCHES OF CANOE

short distance Upstream! While we were happy to have the food, we were disappointed that it had not been packed nearer the head of the valley.

Our packs now weighed about 80 lbs. each. We back-packed that afternoon along the southeast bank of the stream, although for easier going, we took to the bars or to the river whenever it was not too deep. The going in the forest wasn't too bad, for we found quite well-defined moose trails at times. About four o'clock, we camped on the river bank at the point where a lofty waterfall drops from a high bench and valley on the southeast side. We had gone about one mile from the cache. In the evening we had the thrilling experience of seeing the setting sun on unclouded Mt. Robson through the notch formed by the mountains downstream.

The next afternoon, we saw Tête Glacier perhaps half a mile away. Here we camped on a beautiful spruce-covered terminal moraine sufficiently high to give us a good view of the head of the valley—a view that is limited, however, because the glacier circles to the left, and the peaks are away from the steep-sided valley. Mts. Sir Mackenzie Bowell (Welcome) 11,000, Bivouac, 10,200 and Sir Wilfred Laurier (Titan) 11,750, the highest in the Cariboos, are to the right in that order. Holway considered travel in Tête Valley more difficult than in the Selkirks. My own experience is that the bushwhacking in Tête Valley is easier than in the Canoe or North Thompson Valleys.

Our next project was to go up Tête Glacier to the highest camp where wood was available. Getting on Tête glacier was much more difficult than in the twenties, for its retreat had left smooth-worn rocks and a canyon to negotiate. We advanced on the right side of the glacier. The moraines on both sides indicate the recently, much higher level of the glacier. On our side, the nearest trees were perhaps 1,500 feet above us. We despaired of finding wood for a fire at noon, until we noticed that an avalanche had brought down trees to 300 feet above us. But after getting there, we still had no water, so we used ice from below the morainic debris. Apparently that old ice ran far up under the moraine, perhaps as high as the cliffs themselves. As we went up and gradually turned to our left, the view to the west of the glacier became more startling, for the higher we got, the more we could see of the upper portions of the mountains.

After lunch, we continued high on the moraine, hoping to find the goat trail to which our predecessors had referred, but conditions were changed. There was no goat trail, although there were many signs of goat. In fact, we saw a goat on the other side of the glacier. As climbing among the rocks, which were unstable in many places, was very tiring, we returned to the glacier, where the going improved. Ahead of us, six goats crossed the glacier and climbed the cliffs. The moraine at our left was lower and the trees nearer as we advanced up the glacier. We went up the moraine to tree level, passing over huge areas which had recently collapsed as a single mass so that the trees and vegetation continued to grow undisturbed. When we climbed over the top of the moraine, we found behind it the most beautiful and practical high campsite in my experience—a flat, grassy bench with both wood and water. We were high enough (6,700) to have an unusual view of the mountains across the glacier, particularly of the spectacular east face with many glaciers and high waterfalls. We could see the summits of Mt. Sir Mackenzie Bowell and Mt. Bivouac, but not that of Mt. Sir Wilfred Laurier. To the south, the glacier descends over 2,000 feet from the névé in an icefall which is divided one-third from the west by a large cleaver. West of the cleaver, the icefall is very steep and heavily crevassed, but east of it the drop is more gradual.

Our problem was to find a feasible route to the head of the Canoe Valley. The east side of the icefall presented an apparently practicable route to the top of the névé, and was, therefore, our tentative choice of route. Before committing ourselves to it, however, we decided to spend one day exploring the region east of the icefall, including the glacier which joins Tête Glacier just below

the icefall. This was the route which Carpé and Chamberlin had used to approach Mt. Stanley Baldwin. Accordingly, we climbed until we were above the east glacier whose north moraine gives mute testimony to its quite recent considerable size. It no longer reaches the main glacier; instead, the stream from it falls several hundred feet to the top of the glacier below. We examined the mountains at the head and south of the glacier, and were convinced that the main glacier presented the correct route to the Canoe Valley, but we were still undecided as to whether we should proceed up the icefall or up the rather steep slab rock of the mountain east of it.

The next morning we made an early start. The east side of the glacier provided easy going until we reached the waterfall from the east glacier. We here considered and rejected a route up the slab rock of the mountain east of the icefall, because to get to it, we had to climb several hundred feet in the rocks next to the waterfall.. This looked like a disagreeable route, for it was steep and we would be in the spray of the waterfall most of the time.

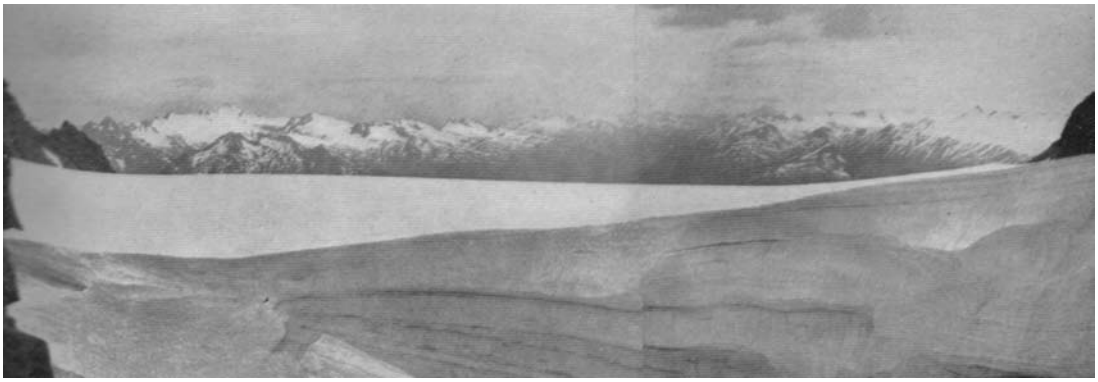
We vetoed continuing up the east side of the glacier because of the large crevasses on the glacier, and because of the steep icefall next to the mountain. Below the cleaver, a dark band of morainic debris presented a smoother route, and it extended down the glacier in our direction. We made our way across large crevasses to this band and found it easy to travel, for it was smooth compared with the rest of the glacier. Finally it was impossible to continue further on it because of large crevasses, and we were forced to the east of the band where the crevasses seemed less formidable. With much chopping of steps in the ice, we got half way to the level area immediately below the icefall, but then we were again blocked by an enormous crevasse. We partly retraced our steps, and by an interesting route through crevasses, we were again able to reach the dark band above the crevasses. The glacier then leveled off and was quite smooth below the icefall because of the compression of the surface ice. We crossed below the icefall to its east side, going through mush water over our knees.

The way up the east side of the icefall was very steep at first, but the consistency of the snow was good. The only risk lay in the patches of exposed ice that occasionally were in our path. The slope became more gradual as we ascended. We probed the entire way up the icefall, although the bridged crevasses were quite apparent. We lunched on the ice, perhaps 500 feet below the névé. From here, we obtained never-to-be-forgotten views, especially of the mountains and glaciers east of Tête Glacier.

After lunch, we soon reached the more or less level névé, although not its top. Here we had to make a selection of routes. To the southeast, the névé rose to a pass next to the ice-covered mountain to the right. I believe that Holway used this route when he got his fine pictures of the mountains south of the Canoe. To the southwest was a slight dip between the ice-covered mountain to the left and a long ridge from Mt. Sir Wilfred Laurier to the right. I judged that it would lead us to the head of the North Canoe Glacier, for I knew the relative position of Mt. Sir Wilfred Laurier from views of it from the Canoe Valley. The way to this col was farther than it looked, and the last portion of it was on soft snow in which we sank waist deep, so exhausting us that we could take only a few steps without resting. As we crossed the névé, a hummingbird flew a few feet from us, and later we saw another bird feeding in the snow. Just before we reached the col, we saw worms in the snow, and as John was eating the snow, I told him to go deeper to avoid the worms, but the worms were just as numerous deeper down. I had seen these worms only once before when on Mt. Lempriere. They were 1/32” long, and, just as had been my previous experience, they sought refuge farther in the ice when I breathed warm air on them. The Duke of the Abruzzi saw similar but larger worms (melanenchytraeus solifugus) on Mt. St. Elias. His book contains a good

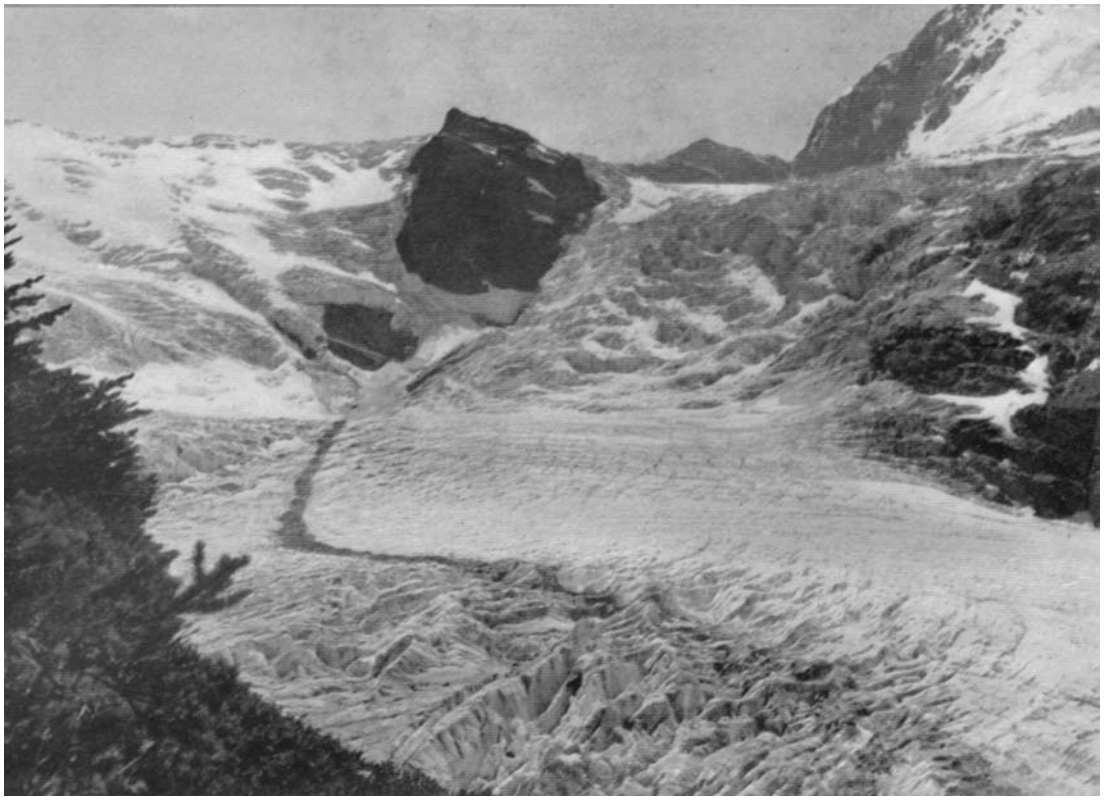
S4 Creek And Glacier From North Of Canoe River. *Photo R.T. Zillmer.*

Arrow Marks Col Used In Crossing To North Thompson.



Looking Southwest From S4 - Blackstone Col. *Photo R.T. Zillmer*

(Canoe To North Thompson) Pass At Summit Lake To Azure Creek In Center Distance.



Looking South Over Tete Glacier To Icefall E. Of Mt. Sir Wilfred Laurier.
Photo R.T. Zillmer.

Looking West To Mt. Sir Wilfred Laurier From Icefall.
Photo R.T. Zillmer.

description and a magnification of them. They have brains, intestines, reproductive, and other organs. Query: On what do they feed?

As we neared the col, we realized that our only problem would be crossing a bergschrund or crevasse with a higher, upper lip or cornice. It extended from one mountain to the other. We aimed for a portion that seemed solidly bridged, but when I attempted to cross, I broke through. I chopped out the bridge to see what was below. Fifteen feet down was a ridge of snow ice, of such consistency that it would probably collapse if one landed on it. One would then fall another fifteen feet to a lower level, and the material on both sides would probably collapse and bury one. I never saw a condition of snow ice like it. I tried another bridge, but it collapsed. I probed other areas, but found no bridge sufficiently strong. John suggested I try a place to the left which, while not bridged, had an opening only several feet wide. I chopped out the snow on our side until I had a hard spot which bore my weight well. Then I chopped out all the soft material on both sides, so that there was no projection of weak material. With John holding me, I reached across to cut a platform of solid material on which to land. The jump, while short, was upward. Without pack or axe, but roped, I jumped across and hurried on to solid ice. Then I pulled the axes and packboards across, the packboards getting lodged each time in the crevasses. John followed successfully.

When we reached the top (about 9,500) a little farther on, we had probably the most beautiful and spectacular view I have ever seen—a view first seen by Holway from east of where we stood. Ahead of us to the right was Mt. Sir John Thompson, and to the left of it a row of majestic, unclimbed peaks that continued along the south side of the Canoe Valley. From our viewpoint, most of the area was ice-covered. Holway was the first to mistake this for the McLennan Valley, and Carpé , Chamberlin, and Mr. and Mrs. Munday repeated this mistake. We saw across the Canoe to the mountain top where in 1943, Lorin Tiefenthaler and I had spent the night during a snow storm in an ice cave at about 10,000 feet.

Ahead of us was a steep, but easy, route down a glacier, and although we left the col at five o'clock, we reached the first timber at 6:30, seeing about a dozen goat on the way. Here we camped on heather at 6,900 and loafed the next morning, for we expected an easy afternoon jaunt to the bottom of the valley. In this, we were soon apprized of our error, for after going down steep, but easy, heather slopes, we came to the top of a vertical cliff overlooking the North Canoe Glacier 400 to 500 feet below. We continued down parallel to the glacier, but as we reached lower levels, the glacier was lower, too. We climbed down many small pitches, we belayed equipment and ourselves down cliffs, and it was late in the afternoon when we reached the Canoe Glacier. The crevasses, however, soon forced us on the moraine to the left. This moraine is heavily wooded on the east side, which slopes down to N9, and is in a state of collapse on the glacier side. It was steep and disagreeable going—whether we bushwhacked on the east side or walked along the narrow, disintegrating ridge. It was almost dark when we finally left the moraine to make camp on the west side of N9, above where it enters the Canoe Valley. We found ourselves in a jungle, where the annual growth was over ten feet and everything was damp. We cleared a swath next to a small, dry spot between large spruce trees. But as the spot was too small to erect the tent, the mosquitoes had a grand night.

The next morning we crossed the many branches at the head of the Canoe River just below the South and North Canoe Glacier. We then continued down the right bank of the Canoe, struggling through thick undergrowth much of the time, for the only trails were moose trails. We cut another jungle camp and continued down the Canoe. About noon as I was walking in the Canoe River in about one foot of water, not knowing, however, that I was on a narrow ledge, I slipped on

the slimy bottom farther out into the river, where the water was fast and over my head in depth. It was difficult to hold on the bank, for no trees were in reach—only weeds and mud—and John had poor footing, too. I went down to my armpits—pack and all— and the swift current was pulling my pack from the bank. With John's help, I finally got out and ran to a clearing where we dried everything. My watch, my camera for kodachromes, and my altimeter no longer functioned. About three o'clock, to our surprise, we found a large stream coming in at the right. We knew that S4 was a large stream, but we didn't expect to reach it until later, for we had had particularly difficult bushwhacking that day—some of it on steep slopes through willows and alders. Nevertheless, the stream proved to be S4.

Our next project was to cross from the Canoe to the North Thompson—a venture we had failed in on four attempts. Several years before, from the mountains on the north side of the Canoe, we had evolved a possible route to the North Thompson Valley by going up S4 to the glacier and by crossing a col on the west side near the head of the glacier. Accordingly, we went up S4, crossed to its right bank, and camped just below where it leaves a canyon. The next morning, we climbed the steep slope adjoining the canyon. We pulled ourselves up largely on devil's club. For protection against its spines, we wore heavy leather mittens. Above the canyon, we had hoped to reach S4 glacier, but instead, we reached only a level bench, and less than a mile ahead, the river seemed to come from a still higher bench. We crossed to the west side of the river and continued for perhaps a half mile to the place where the stream leaves another canyon. Here we climbed a series of cliffs which became harder to negotiate the higher we went. At last, after two hours of struggle and when only half way up, the climbing became so difficult and the risk so great, largely because of our packs, that we returned to the stream, quite discouraged over the wasted effort.

To circumvent the canyon, we had to climb over a mountain. While the mountain on the other side is lower, the stream was now too deep and powerful to cross. So we climbed the mountain on our side, fortunately finding a tiny stream which lead almost to the top, and by walking in it, we avoided dense willows and alders, and finally we discovered a moose trail which led us over the top, partly through windfalls seemingly impossible for moose. The trail continued down the other side, through heavy timber and devil's club, until we reached a meadow below. There over a mile ahead was the glacier at a higher level. We camped near the river in a cluster of trees. It had been a hard day with much wasted effort. Little did we realize that the next day was to be even worse!

We diagnosed the best route to be in the right side of the stream, for there a large moraine reaches from the valley to the bed rock above the glacier. Below and on the other side of the glacier are smooth, glacier-worn cliffs only recently uncovered. We crossed the stream and followed its bank as closely as possible. The willows and alders made it a hand-to-hand battle, and when we reached a brook cascading down rocks, it seemed to offer an easy route. We continued in the brook until it disappeared under the snow. Then we followed the snow and later the stream when it reappeared. We finally realized that we had been led into a steep canyon which would take us to the high mountain on our left. Accordingly, we climbed out to the top of the ridge west of us and continued along its west side until we realized it also went too far to our left. Therefore, we went down to our right until we reached the lateral moraine, losing much altitude. We were thoroughly disgusted, for in a hard half day we had accomplished perhaps less than an hour's advance.

We followed the top of the moraine wherever possible, but often we were forced either to the right or to the left. The moraine, however, ultimately took us to the bed rock high above and next to the glacier, where the easy going on heather and alpine covered slopes was a great relief. We camped in a spectacular location on an island of trees located high above the glacier

and next to cliffs that towered up the mountain on the east. Across the glacier are high peaks and large glaciers flowing down their sides, and across the Canoe Valley are Armchair Mountain and other mountains that bound on the south the névé which reaches to the McLennan. We excavated a tent site on morainic rock fragments a few feet from a cliff. In the morning, a large aggregation of blood-filled mosquitoes rested in our tent. For water, we had seepage collected in a hole that I had dug.

When we started the next morning, we made the mistake of staying high, just under the cliffs, instead of going down to the glacier, for we hated to lose elevation. At last further advance was impossible, and we were compelled to go down to the glacier. The descent had considerable hazard, for it involved steep, smooth slabs requiring the belaying of our packs and the negotiation of a vertical wall of cemented, morainic material that could only be accomplished by a steep couloir rock shoot where a delicate touch and speed were necessary. I eased John and the packs down with the rope, but when I was ready to descend, I couldn't find a belay that might not start an avalanche of huge stones. Using great care, I got down without starting anything. I regard this as the most hazardous of our experiences.

We made fine progress on the glacier and got above the icefall easily. About 2:30, when we were high above the last trees, we had to decide whether or not to camp in the rocks at our left and postpone for a day our attempt to cross the range. John was for continuing. Should we climb the col which we had tentatively selected as the route to cross the range, or go to the head of the glacier ? We decided on the col route. We crossed the heavily crevassed glacier, and at about 3:30 stood below the steep glacier leading to the col, which is the deepest cut in the range on the west side of S4. The slope was about as steep as we could go, and after ten minutes I was quite discouraged and suggested to John that we return to camp across the glacier, for the job seemed too big for the remaining daylight, but John, below me, said, "Dad, you're going fine. Let's keep going." That was just what I needed. At five o'clock we were in the col.

The view from the gap was very disheartening. I had expected to see the North Thompson Valley and an easy glacial route down from the col. Instead we saw mountains in the distance but no valley, for the top of the glacier at our level was several hundred feet away and blocked our view. The edge facing us dropped vertically to the bottom of a large hole into which we could easily descend, but from which it seemed impossible to reach the top of the glacier because the vertical face extended from the mountain on the left to the mountain on the right.

I scaled the ridge on our left and saw that the right face of the glacier could not be climbed, but that far to the left it might be possible. With John leading and chopping the way up the steep ice next to the mountain on our left, we reached the top of the glacier.

We had a better view of the country ahead, but on either side, our view was restricted by ridges, and we were still uncertain of our location, except that we had crossed the range. It was getting dark and looked like rain, and I was very tired. We went down the glacier quickly and then over the large lateral moraine to our right, hoping to find trees and a campsite on the other side, but we found only snow, down which we continued until we reached wet alpine ground. Here I found a slightly raised patch of dry heather large enough for both of us to lie on, and on it we put the tent, holding up the front end, a foot and a half from the ground, with our crossed axes. It commenced to rain, and it continued raining hard all night, and while the top of the tent lying on us was filled with buckets of water, we were dry and slept well, although I awoke several times worrying as to our location.

In the morning we deliberated on where to go. The choices open were few. Below us was

the end of the glacier, and on its left was the end of another glacier, the two forming a stream that flowed to the right and swung around a flat ridge ahead of us. We wanted to climb this ridge, but as its cliffs seemed forbidding, we decided to proceed up the glacier on our left. By twelve o'clock, we had a good view of a broad valley below us, and we thought that it must be the North Thompson. The glacier we had ascended was part of a very large glacier at our left which reaches to the head of the S4 glacier, so that a better route across would be available via the head of glacier S4. Far away to the west, I observed a tiny lake which resembled Summit Lake on the divide between the North Thompson and Azure rivers. However, I was still uncertain as to our location, so we climbed almost to the top of a mountain south of us, and only then did I feel it was safe for us to assume that the valley below us was that of the North Thompson. Not until then did we decide we had crossed Blackstone Glacier, having walked down one tongue and up another. The col we had crossed was north of the main body of Blackstone Glacier, and the photographs taken of our trip up the North Thompson in 1939 show exactly where we crossed. In fact, my map in the Canadian Alpine Journal [2] marked the spot "col." The next valley over the ridge on the north is the valley of the main Thompson Glacier. I could identify the entire mountain area which we had climbed north of Summit Lake along the divide between the North Thompson and Azure rivers.

The next four days were like a nightmare. I had assured John that we would soon be in the North Thompson Valley and would reach Gosnell, on the railroad, in three days of easy going on the trail. Instead, we had four and a half of the hardest days I have ever experienced in bush-whacking. I shall not describe this in detail at this time. We reached the North Thompson trail by going down first a north branch of, and then the main, Lebner Creek, which probably drains from the southeast side of Blackstone Glacier. This creek presented every possible obstacle to mountain travel, and it was over a day before we reached the North Thompson trail which I had negotiated twice in 1939. But it could hardly be called a trail any more, for devil's club and other vegetation had taken almost complete possession of it, and we had great trouble keeping to the trail. We lost it often, once wasting perhaps three-quarters of a day wallowing in swamps, beaver ponds, and willows, and at another time losing half a day in solving the crossing of Leo (Rudolph) Creek. The mosquitoes were never more avaricious or numerous. John's watch stopped, and to be sure that we would get out on the twenty-first day, we would get up very early and travel until we were both exhausted. The rain was so continuous that we were never dry, despite our waterproof garments, for the continuous pounding of wet bushes was too much for them. John accepted all this without fear, complaint, or impatience. I am proud of his performance.

On the twenty-first day, when all our food except a little rice and oatmeal was eaten, we arrived at Ella Frye's cabin near Gosnell. Did civilization ever seem good! In five minutes, we had coffee; in half an hour, a sumptuous breakfast; and in three hours, an unforgettable dinner, yes—with salad! But, above all, we received a welcome that was most refreshing. After a bath in water that was hot, and after clippers and a shave over mosquito-pimpled faces, we were new men!

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2 C.A.J., XXVII, 52. (1939

AN EXPEDITION TO THE LLOYD GEORGE MOUNTAINS OF NORTHEAST BRITISH COLUMBIA

BY F. S. SMYTHE

The northeast portion of British Columbia is one of the least known areas in Canada. Between the Peace River in the south and the Liard River in the north there is a mountainous area some 25,000 square miles in extent which is largely unmapped and unexplored. This area, which is bounded to the west by the Finlay and Kechika Rivers, and to the east by the Alaska Highway, forms a part of the Rocky Mountain system north to the Peace River. It is a wilderness of mountains, and its valleys are filled with dense conifer forests which, with the swift rivers and narrow canyons, make travel by canoe, or on horse or by foot extremely difficult.

The first man known to penetrate this country from the Finlay River was R. G. McConnell of the Geological Survey of Canada who in 1893 penetrated a short distance up the Kwadacha River from Fort Ware on the Finlay River and saw up its branch, the Warneford River, high snows in the north. These snows were again observed by Frank Swannell of the Dominion Survey in 1914 from a mountain near Fort Ware and their position was fixed by rays.

Fired by the accounts he had heard of high mountains and an extensive glacier system, an American, Paul Leland Haworth, set out in a canoe with a single companion in 1916. Following the Finlay River to the Hudson's Bay post at Fort Ware, he endeavored to ascend the Kwadacha River, but the going was so difficult, and took so long, that he was forced to retreat owing to lack of food, but not before he had climbed a hillside and had caught a glimpse of a high mountain massif supporting an extensive ice field whence rose three striking peaks. This range he named Lloyd George after the Prime Minister of Britain whom he greatly admired.[1] The Survey of Canada has since named other ranges in the area, Churchill, Roosevelt and Stalin.

Haworth returned in 1919 with a stronger party, but this time he made a topographical error and, instead of ascending the Warneford River, which would have led him to the Lloyd George Range, he followed the Kwadacha River, and was forced in the end to make a cross country journey through the bush. This so exhausted the party that when at length he and Dr. Chesterfield reached the lowermost end of the six-mile-long lake named after him, he was only able to continue a mile or so along the shore towards the Lloyd George Mountains which rise from the other end, before being forced to retreat.

The first exploration of the country between the Lloyd George Range and the Peace River was made in 1932 and 1934 by the Bedaux Sub-Arctic (Citroen) Expedition. In 1932 horses were taken to Trimble Lake about one hundred miles north of the Peace River, and in 1934 the expedition continued its explorations northward. Leaving Taylor on the Peace River on July 16, they proceeded via the Halfway River using tractors, but on August 7 abandoned these and continued with packhorses. On August 31 they reached the Muskwa River thirty-five miles east of the Lloyd George Range, turned west up that river, arid on September 7 crossed Bedaux Pass at the southern-most extremity of the range. Then, proceeding via Chesterfield Creek, and the Warneford and Kwadacha rivers, they reached Fort Ware on the Finlay River on September 13, thereby completing

1 *On the Headwaters of Peace River* **(**Scribners**)** by Howarth.
"On the Headwaters of Peace River." Scribners Magazine, June and July, 1917. "To the Quadracha Country and Mount Lloyd George." Scribners Magazine, May and June 1920.

a journey of 355 miles from Fort St. John and 907 miles from Edmonton. This memorable pioneer journey through some of the most difficult country in northwest Canada ended on September 22 on the Fox River another three miles north of Fort Ware, after which the expedition returned the 460 miles from Fort Ware to Taylor by canoe via the Finlay and Peace rivers.

The expedition travelled from Chesterfield Lake to Fort Ware, fifty-two miles, in four marches, a remarkable performance in view of the dense bush and steep and narrow valleys, rendered only possible by the strength of the expedition which included more than twenty packers axemen.

The geographer of the expedition was Frank Swannell, and an excellent map of the route and its environs was made by him to a scale of 1 inch to 7.89 miles. This map possesses the unusual feature of being signed by all the members of the expedition including the axemen and packers.

Such expeditions as the above are nowadays extremely expensive and would cost many thousands of dollars. It is better therefore to select a specific area for exploration, and to charter an aircraft and fly into it where a landing is possible on water. The summer season is of short duration in northern British Columbia, and by other means of transport the greater part of the summer will be occupied in travelling in and out.

In 1946 Major Rex Gibson of Edmonton and I talked over the possibility of an airborne expedition to Haworth Lake, and later from England I wrote to Gibson initiating an expedition for which he made the preliminary arrangements, in respect of air transport, air maps, equipment and provisions.

The expedition consisted of the following: Henry Hall of Boston of the American Alpine Club; John Ross, President of the Harvard University Mountaineering Club; David Wessel of Bozeman, Montana; Rex Gibson of Edmonton ; Noel Odell of Cambridge; my wife and myself.

The expedition had as its principal objects the exploration of the Lloyd George Range, the making of as accurate a sketch map as possible, a geological survey by Odell and a collection of herbarious specimens of the flora and silva for the Royal Botanic Gardens, Edinburgh, by myself. My wife came as the cook and general organizer of the expedition and in both capacities was invaluable.

The expedition came together at Jasper, Alberta, in June, 1947, and at the end of the month left in two parties, one of Gibson, Wessel and Ross to Fort Nelson and the other of Hall, Odell, my wife and I to Fort St. James. Those of us who travelled to Fort St. James had an inauspicious start from Jasper as an aircraft crashed on the station, the pilot being killed; then owing to a freight train being wrecked we arrived at Vanderhoof a day late. However we were met at Vanderhoof by a cheerful Welsh taxi driver named David Jones — a more auspicious omen — and were motored with an enormous weight of equipment and food the fifty miles to Fort St. James.

When we arrived at the office of British Columbia Central Airways on the banks of Stuart Lake, we found that the officials knew nothing about us although Gibson had corresponded for months previously and chartered an aircraft. It transpired that the Managing Director had left the firm and had parked our correspondence in a file marked “Miscellaneous” which no one had bothered to open.

However, they kindly promised us an aircraft for that day, July 2, and after lunch we packed ourselves into an all-metal Junkers float-plane with a single Pratt and Whitney engine, and a pay load of 1200 pounds.

Our pilot was Mr. Pat Carey, one of those skilful and intrepid bush pilots who have done, and are doing so much, to open up the Canadian Northwest. In this type of flying the pilot is

entirely dependent upon his own skill and judgment. There is no radio direction finding, no local weather reports, and the maps he must work from are often one in a million in scale with large areas completely blank.

I asked him what he would do in the event of the single engine failing and there being no lake or river to land on. His reply was: "I guess I should put her down on the bush, she's strongly made and would plough through the tree tops like a toboggan."

We took off at 1:45 p.m. and flew north past Pinchi Lake, where there is a mercury mine, and between Chuchi and Tchentlo lakes to Germansen Lake. The weather was good and the visibility excellent, the Coast Range 150 miles distant being clearly visible.

After Germansen Landing, which is now linked by a road with Fort St. James, we did not in the next 200 miles see a trace of any human habitation, nothing indeed but a wilderness of mountains broken in one place by the geological fault known as the Rocky Mountain Trench down which the Finlay River flows to Finlay Forks where it and the Parsnip River unite to form the Peace River.

We crossed the river a little above the Hudson's Bay Post, Fort Grahame. Up to this point the pilot knew the country, but he had not before been in the direction of the Lloyd George Range. I was seated beside him in the cockpit, and was now prepared to assist in the navigation, but there was no need for this as eighty miles ahead the range was already in view, its icefields shining out from between the clouds, the most prominent object in a tremendous landscape of peaks and ranges.

As we crossed the Kwadacha River and its valley clothed in dense forest it was easy to appreciate the difficulties Haworth experienced in his journeys. It seemed almost cruel that we were flying to his lake very easily and comfortably between lunch and tea, when his overland journey had cost him many weeks and months of arduous canoeing and bushwhacking.

Then, to the east, Chesterfield Lake appeared. A few more moments and we swung round the range west of it, and there was Haworth Lake, an intense turquoise blue in color, and set like a great gemstone amidst the peaks of the Lloyd George Range and the icefield they supported. We landed on the lake at 2.05 p.m. after a flight of two hours and twenty minutes for an estimated distance of 281 miles.

The moment we climbed out of the aircraft on to the shore of the lake we were met by the furious and voracious inhabitants of the surrounding forest and muskeg — mosquitoes. This is a problem every traveller in north and northwest Canada has to face, and it is essential to have tents fitted with mosquito nets. Most mosquito repellents are seldom effective for any length of time, far less than their optimistic makers state, but in this case we had one-called "Skeetofax." In the form of a cream it acts simply as a salad dressing for the mosquitoes but as an oil it kept even the Canadian insect off for an hour or two, sometimes as long as five hours after a single generous application.

Our base camp was pitched at a height of 3,800 feet at the northwest corner of the lake. The site was not an ideal one, and we could find no better ground for the tents than some low mossy ridges rising a foot or two above the surrounding swamp.

The aircraft left that afternoon for Fort Nelson returning next morning with Gibson, Wessel and Ross who enjoyed an interesting flight of some 120 miles across the mountains west of the Alaska Highway.

The weather changed for the worse the day after our arrival and continued unsettled during the month we spent in the Lloyd George area. As we learned afterwards the summer of 1947 was

exceptional for its heavy precipitation along the Canadian Rockies, the rainiest summer since 1907 according to official records. At the same time the Pacific coast experienced a drought and later, when my wife and I visited Vancouver Island, it was to find the country brown and parched, a most unusual circumstance for that part of Canada.

During the first days of bad weather we occupied ourselves in making small reconnaissances of the surrounding country, and in constructing, chairs, tables and other amenities of civilization, including a properly constituted kitchen for my wife. Her duties meant cooking at all hours of the day and night. We lived on varied and well cooked food which included thirty dozen fresh eggs, bacon and hams and some excellent dehydrated meats and vegetables. On July 4 the aircraft returned with the remainder of our provisions and equipment. It was then utilized for a three hours' reconnaissance fight over the surrounding country by Hall, Odell and myself while Gibson, Wessel and Ross set off earlier that morning to reconnoitre a route to the main icefield of the range.

The first leg of the flight was north northwest to the headwaters of the Gataga River, which have their origin in the mountains named the Churchill Range by the Survey of Canada. This is a totally unmapped and unexplored group of mountains, and the peaks, typical of the sedimentary limestone of the Rockies, are mostly of about the same height, between 8,000 feet and 10,000 feet. The outstanding peak of the range had been observed previously from the air and named Mt. Churchill but we saw no peak to correspond with this description nor did we see a group of lakes which are indicated in the map and it is doubtful if they exist. Apart from Haworth, Quentin and Chesterfield lakes we did not observe any lakes or rivers suitable for an aircraft landing and to penetrate to the heart of this country with its labyrinthine forest-clad valleys and canyons would be a long and difficult undertaking. The map also indicates a mountain named Mt. Roosevelt 9,500 feet north of the Churchill Range at the headwaters of Racing River. We did see in this area an isolated and distinctive peak which we circled and photographed.

Our next leg was southeast to Tuchodi Lake. This lake fifteen miles long, was the only other stretch of water we saw on which aircraft could be safely landed. One had already done so and the pilot reported it to be packed with fish. Some eight miles to the east of the lake there rises a 9,500-foot mountain which the survey authorities, in conscientious pursuit of the system of nomenclature invented for this country, have named Mt. Stalin. Actually, there is a line of three peaks here, all dark, grim looking mountains.

Our next leg was to be south southeast to the Redfern Range. The map marks a lake here, which should be accessible from the Alaska Highway, forty miles to the east, and there is a fine looking group of mountains: one has been named Redfern Mountain and the other Great Snow Mountain. The Bedaux expedition also passed a few miles east of the lake.

The weather, however, had deteriorated and dark clouds piling up in the south already concealed the range. We decided to abandon the flight and return to Haworth Lake; it was to prove a fortunate decision.

Flying south southeast from Tuchodi Lake we soon approached the Lloyd George Range. It was our first comprehensive view of the icefield which is some 30-35 miles in extent. If the glaciers flowing from it are taken into account the total area of ice in the range is about 50-60 square miles. We could also see the three highest peaks of the range, and it was evident that two of them were easy of access from the icefield. The third stood apart from the icefield and looked more difficult of approach. The most impressive feature of the range is the glacier which falls from the icefield towards Haworth Lake. It is so steep that it forms a continuous icefall of over 4,000 feet, one of the longest icefalls in the Rockies. Gibson's party was, we knew, attempting to force a route

up this to the icefield, but we could see no trace of them. Actually they were immediately beneath us on the icefield and of course could see us as we swooped around.

Satisfied with our inspection of the range, which gave us much of the information we required, we descended and landed on the lake. Half an hour later, as we were enjoying our tea, a heavy thunderstorm accompanied by a violent line squall arrived. As Pat Carey remarked we were lucky to have got down when we did. Later, despite continued bad weather and a cloud ceiling of only 2,000 feet above the lake, he took off for the Hudson's Bay Company post at Fort Ware where there is a petrol dump and it is possible to land on the Finlay River. It was a striking testimony to his experience and skill in mountain flying.

Meanwhile Gibson, Wessel and Ross had ascended to the icefield via the true right-hand side of the steep glacier at the head of the valley, later named the Llanberis Glacier, This had involved the ascent of a 4,000-foot icefall and the ascent of a steep rock face in order to turn a wall of séracs. The route is not free from danger and for an hour they were exposed to the risk of falling ice. Having reached the icefield they turned northwest and had proceeded about two miles when they were overtaken by the storm already mentioned. So bad was the weather that Gibson decided not to retreat by the line of ascent over the exposed icefield but to force a direct route down the cliffs falling from the edge of it. This was only achieved after a most difficult climb and the party returned to camp as darkness was falling. Their expedition was a *tour de force.*

After this the weather continued bad for several days. During this period we visited the northernmost branch of the valley in which is situated Haworth Lake, where we found a stagnant glacier about two miles in length, lying in a valley less than half a mile wide and bounded by rock cuffs of 4,000 feet. This glacier was covered with stones and earth, and in this small trees, shrubs and plants were growing. It was estimated that the ice had lain there for hundreds, perhaps thousands, of years melting but little owing to the small amount of sunlight received and the blanketing debris, fallen from the crumbling limestone cliffs, that had accumulated upon it.

I was able at this time to begin a herbarium collection of the flora in which work I was ably assisted by John Ross. The flora of the Rockies is not to be compared with that of the Alps or Himalayas in the number and variety of its species, but it is extremely profuse and beautiful.

According to Dr. J. M. Cowan, Assistant Keeper of the Royal Botanic Gardens, Edinburgh, nearly every plant found in the area is mentioned by Raup[2] and Rydberg [3]. Owing to the warm air currents from the Pacific the distribution of plants along the Canadian Rockies is substantially the same between latitudes 50° and 57° and possibly still further north, except that in the Lloyd George region there begin to creep in some sub-Arctic species. The general flora was, however, similar to that of Jasper and Banff National Parks except that in the Lloyd George area blue-flowered plants more than any other types predominated. There were, for example, on the lower slopes massed delphiniums, lupins, blue borage, polemoniums, astragalus, myosotis, mertensia and gentians. And between this mass of blue shone out brilliantly such plants as the red and yellow Indian paint-brush, a beautiful red and gold columbine, and yellow asters.

Above 5,000 feet many of the same species were present but in dwarf form. Higher still, over 6,000 feet there was a kind of mossy tundra in which the-typical cushion plants of the high mountains flourished, such as the silene acaulis, saxifraga, minute almost stemless daisies and other composites, golden potentillas, and a very dwarf forget-me-not as brilliant a blue as that king

2 *Phytogeographic Studies in the Peace and Upper Liard River Regions, Canada* by Hugh M. Raup. Published by the Arnold Arboretum of Harvard University, Jamaica Plain, Mass.

3 *Phytogeographical notes on the Rocky Mountain Region* by Rydberg

of Alpine plants, the eritrichium nanum.

The weather up to July 15 continued bad. During this period we rigged a wireless transmitting and receiving apparatus but found that although we could receive, it was impossible to transmit to Fort Nelson as had been arranged, due to the screening effect of the mountains.

Owing to the dense bush surrounding us we saw comparatively little of the animal life beyond moose and porcupine one of which raided the stores and had to be shot, but there were many tracks of elk, caribou and wolf, and above timberline Rocky Mountain goat and sheep were observed. On one occasion a large brown bear was seen in the valley below the Stagnant Glacier.

On July 7, during the course of a reconnaissance round the lake shore, axe cuts estimated to be at least twenty years old were found in some trees, probably made by the local Indians, or perhaps by some wandering trapper or prospector.

So difficult was the bush along the lake shore that we constructed a raft made of five dead but not rotten logs out of which the sap had dried, and this was launched with great ceremony by my wife and christened the Nona.

On July 10 two new routes, both safer and easier than the icefall were made to the icefield towards its southeast extremity, and some minor peaks climbed, one of which was found to contain a large number of marine fossils.

On July 14 routes were reconnoitered from the Stagnant Glacier up "Mt. Glendower" (9,800 feet), the name suggested for the second highest peak of the Lloyd George massif, and the following morning we rose at 3:00 A.M. and set off to climb the mountain. Hall, Gibson and Ross were to ascend by a steep gully 4,000 feet in height from the Stagnant Glacier, while Odell, Wessel and I made a route which struck the southwest ridge of the mountain at a lower point.

The ridge was reached without difficulty but, when we attempted to traverse it, we found ourselves cut off by a deep gap to descend into which would have involved risking an avalanche on a slope of soft, freshly fallen snow falling towards a glacier to the west. We returned, and late in the afternoon saw the other party completing the ascent of the summit snow slopes.

The weather improved somewhat, and on July 17 the whole party excepting my wife who volunteered to remain alone at the base camp, set out to climb Mt. Lloyd George, the highest peak of the range. In perfect weather we followed the route up the icefall discovered by Gibson's party. For an hour the climber is in danger from the unstable séracs of the glacier, then he must climb up a steep wall of rocks in order to circumvent a 100-foot wall of crumbling ice.

When after some five hours of climbing we reached the icefield, it was to find the snow so soft that advance became very slow and fatiguing. Snow at this latitude does not consolidate as it does in the Alps. This seems due to the small variations in temperature between night and day, and one altitude and another. The length of the day and the shortness of the night prevent temperature extremes, thus the snow is not compacted by alternate sun and frost as it is in the Alps. The warm air from the Pacific also influences these conditions.

The best technique when traversing soft and deep snow is for the leader to go ahead as hard as possible for a few minutes. His place is then taken by the next man who does likewise. Before us across the gently sloping expanses of the icefield we could see our objective, Mt. Lloyd George. It looked close at hand, but it took three hours of toil under a burning sun to bring us to the foot of its final peak.

We halted for lunch on a scree patch then set off to complete the ascent. The going was perfectly easy up the south ridge, and when at length we approached the summit, we climbed a steep little wall of snow immediately beneath it, more as a sporting gesture than anything else as it

could have been avoided to one side.

The ascent had taken ten hours. It was a happy occasion, for our three nationalities had pulled together as one man. The weather also was perfect, the finest day granted to us in a month. Beneath us to the southeast stretched the immaculate expanses of the icefield. Beyond were ridge upon ridge of mountains.

In the north were the limestone peaks of the Churchill Range, steep and wallsided. From them the eye swung northwest across the Kechika River to the granite formations of the Cassiar Range, then to the west and southwest along the Omineca Range where there were some fine granite peaks visible, sharper and steeper than those around us. Southwards lay the great Rocky Mountain Trench down which the Finlay poured its waters to Finlay Forks. Southeast the peaks of the Redfern Range were plain to see, a fine group of mountains and well worth the attention of the mountaineer. To the east and northeast a jumbled array of snowy peaks extended towards the Alaska Highway the nearest point of which was some seventy miles by airline.

It was interesting to reflect that in all this vast agglomeration of mountains, extending over one hundred miles in all directions, there was not a single peak that had been trodden by man.

The mean of several barometers denoted a height for Lloyd George of 9,850 feet and a bubble theodolite disclosed that it was some fifty feet higher than the west summit of the range, Mt. Glendower.

Owing to the soft snow the descent took almost as long as the ascent, and our previous tracks, deep though they were, collapsed beneath us, so that we wallowed thigh deep across the icefield. As a result we did not reach camp until 10:10 p.m. where we were welcomed by my wife and a magnificent four course meal.

During the latter two weeks of July a survey of the area was made from a base line in the valley, and three survey stations, two of them on eminences above the level of the icefield were established. The third peak of the range, Mt. Criccieth (9,400 feet), was climbed, and observations made on the glaciers which flow into the Tuchodi and Muskwa rivers.

The easternmost extremity of the icefield was also visited, and several peaks in its vicinity ascended, including Mt. Crosby (8,700 feet) which had been named by the Bedaux (Citroen) Expedition, as it is visible from their route over Bedaux Pass to Chesterfield Lake.

During this period Odell completed his geological survey and I, my collection of flora and silva. Two further expeditions were also made. One was the traverse of Mt. Lloyd George and Mt. Glendower. This was the best mountaineering expedition we had and was first class from an Alpine standpoint. It occupied twenty-one hours, and the narrow snow ridges between the two peaks might be compared with the ascent of Mont Blanc via the Aiguille de Bionassay. We were benighted below the Stagnant Glacier but eventually, with the help of electric torches, found our way through the forest to camp.

Another ascent was that of the twin-headed peak to the east of Haworth Lake. We named this the "Cloud-maker" (8,500 feet) on account of its tendency to manufacture local clouds and storms. It appeared an easy climb from the valley to the north of it, but to reach this valley involved some difficult bushwhacking around the shores of the lake. The alternative was to employ the raft, and on this somewhat doubtful contraption Wessel and I set out on the morning of July 22, carrying with us food for three days but no tent or sleeping bags as we intended to travel light and fast.

If our speed was no more than a mile an hour it was several times faster than forcing our way through the bush. Keeping as close as possible to the shore, we poled and paddled round the head of the lake and along the east side. We were about five yards from the shore when on turning

a small point we suddenly saw a bear. This bear was light brown in color with deep sunken eyes and was far larger than a grizzly. It was identical in color and type with the Alaskan bear shot by Belmore Brown which weighs 1,550 pounds, stands about ten feet high and is now in the New York Natural History Museum. Our bear was not so large but appeared a formidable creature.

For a moment it eyed us, then rushed into the lake and commenced to swim towards the raft. We had no weapon and were far too slow to escape, especially as we were in deep water and could use only the paddle.

The bear made straight for my end of the' raft, and as I was standing astride the raft with my back to him it was essential to turn round and face him; then I could wield my paddle, our sole defensive weapon.

Reversing position on a raft is a difficult manoeuvre at any time. As my weight came on one foot the raft canted steeply and I found myself overbalancing into the water. At the last moment I managed to turn round and transfer the weight to the other foot; the raft lurched back, and I was in the reverse position facing our assailant, paddle in hand.

It was the second occasion on which I had been attacked by a bear and I remembered the words of Jack Hargreaves of Jasper, an experienced hunter and packer: "Stand your ground and make yourself known." There was no question of not standing my ground, and in no small measure did I make myself known. I yelled at the bear and shouted imprecations which I will not repeat here. At the same time I beat with my paddle at the water in front of him, with the object of scaring rather than enraging him.

But this was without effect; he still swam on powerfully and quickly. In another moment he would seize the raft.

The time had come for more direct action. I uttered a yell, even louder and shriller than before and raised my paddle intending to hit him on the nose, the most sensitive portion of a bear's anatomy, but before I could bring it down, his head suddenly, turned, and in another moment he was making for the shore. He landed, then, in a series of great bounds, crashed off into the bush.

"Holy Mackerel!" remarked my companion, who throughout these proceedings had been standing immobile at the other end of the raft without realizing the importance of joining in the noise, "I sure would have liked to photograph him."

Half an hour later we tied up the raft and struck out through the bush. For a time we followed a stream, then came upon an excellent game trail, which led us through the bush without any difficulty for the next two miles, keeping high up above a gorge down which the stream we were following flowed towards Haworth Lake.

The game trail presently petered out, but we could see our way ahead, and presently emerged into the valley north of the Cloudmaker, the waters of which flow to both Haworth and Chesterfield lakes.

We found the valley to be an open one and carpeted with lush meadows ablaze with innumerable flowers. Along it we made our way, then turned up a shallow gully cut out by snow avalanches which led us without difficulty through the bush to the uppermost slopes of the lower peak of the Cloudmaker. We gained the summit without difficulty at 2:15 p.m. and an hour later set off for the higher summit.

As we climbed up easy slopes of snow and rocks the weather quickly deteriorated and thunder began to sound in the east. Leaving our rucksacks we hastened on, hoping to reach the summit and return before the storm broke on the mountain, but the ridge we were climbing abutted against a steep wall about 200 feet high just beneath the summit. As this would take time to climb

and the storm was fast approaching we decided to take shelter a few yards from the ridge on the lee side.

We had not long to wait for the storm. The lightning seemed to gush out of the dark clouds as they approached, and the detonations of thunder sounded as though some barrage was creeping upon us. Then, suddenly, there was a vivid glare and a tremendous BANG! as the lightning struck the top of the mountain, then another glare and a second BANG!

It is interesting to note that in a storm on a mountain two types of lightning discharge are possible. In the first the charged cloud builds up on the mountain or approaches slowly from elsewhere. This results in the setting up of a gradual tension, and an ionization of the air as a preliminary to the actual flash-over which may, however, not occur at all owing to the neutralization of the cloud. It is this type of discharge which produces such characteristic effects as the hair standing on end and hissing metal objects, and it provides an unmistakable warning to mountaineers to leave exposed crests and ridges.

In the second type a charged cloud is blown quickly against a mountain. This results in a sudden and enormous tension of far higher potential than that which builds up to a flash-over along an already prepared ionized column of air. Thus the flash-over which occurs in the latter type has to break down a greater atmospheric resistance, and is therefore far more powerful and destructive than in the former type. The thundercloud that approaches a mountain quickly from a distance is to be feared more than the one that forms gradually on the mountain.

In the case of the Cloudmaker the discharges were violent yet we experienced none of those preliminary phenomena already alluded to. Drifts of hail poured down upon us. They were succeeded by denser curtains, until everything was blotted out and the rocks hissed and seethed with the rushing pellets.

Then came a burst of violent light and a tremendous explosion. For a few moments I was blinded and could see nothing but darting streams of fire. At the same moment my legs felt as though they were being driven down into the rock by some irresistible force, while the soles of my feet were stabbed by innumerable needles.

The world re-appeared and I could see my companion through the pouring hail a few yards away. We grinned at one another and I made the somewhat unnecessary remark that the flash was a close one.

After this flash there was silence, one of those strained and ominous silences that sometimes occur in a thunderstorm before a particularly violent discharge.

Then the calm erupted in another explosion. This time I distinctly saw the stream of fire as it rushed down to hit the mountainside just below Wessel, before I was once again momentarily blinded by its brilliance. This time, however, I felt less shock and it was Wessel who had the narrower escape.

It was Jove's last effort. He withdrew over Haworth Lake, but he was well supported by his pluvial rearguard, which continued to drench us with hail, sleet and rain. We were now in a miserable plight, soaked to the skin and shuddering uncontrollably both from the cold and the effects of the lightning.

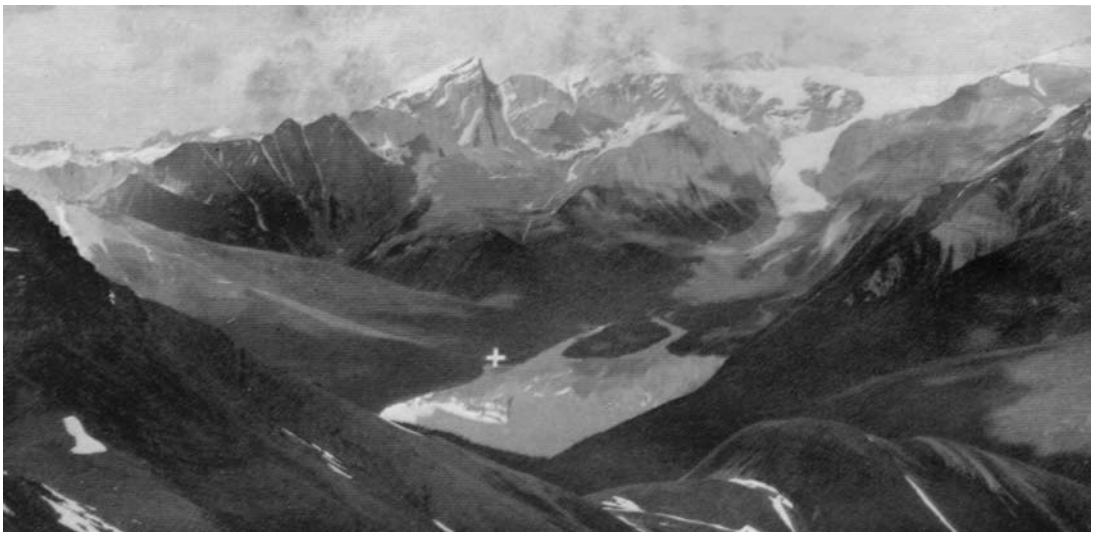
Down we went to our kit and huddled on everything we had, then, without pause, we glissaded down the snow slopes that descend to the north of the Cloudmaker. We had descended some 1,500 feet when we stopped and told each other that we had better go back and finish the job.

So back we toiled over the now interminable snow slopes. We regained our former halting place. It was now merely raining, sleeting and blowing. The rocks above were streaming wet, and

Mt. Lloyd George From Southwest.
Photo F.S. Smythe.

Lloyd George Group:
Mt. Criccieth, Mt. Lloyd George, Mt. Glendower.
Photo F.S. Smythe.

L. To R.:
Rex Gibson, H. Hall, J. Ross, D. Wessel, Mrs. Smythe, N. E. Odell.
Photo F.S. Smythe.



Lloyd George Group. *Photo F.S. Smythe.*

L. To R. Mt. Glendower, Mt. Lloyd George, Mt. Criccieth (Base Camp Marked With An X).

Junkers Seaplane On Haworth Lake. *Photo F.S. Smythe.*

Twin Peaks Of Cloudmaker In Background.

to avoid a difficult climb we traversed eastwards seeking for an easier line. We found one and were soon building cairns on the two summits of the mountain.

The rain and sleet had ceased. Around us rose dark and sullen mountains and beneath, Haworth and Chesterfield lakes gleamed green and cold. Somewhere in the west Jove's chariots were rumbling on their way, but in the southeast, faint and far beyond the edge of the rain clouds some shapely snow-peaks glowed in the setting sun.

Down we went, a race against darkness to timberline. We won it and spent the last of the daylight collecting dead timber for an all-night fire. It was a beautiful spot, a flowerful glade set betwixt the spruce and balsams.

The rain stopped as we heated our cocoa and the stars were spread between the tree tops.

Our meal over, we sat by the fire pleasantly steaming in our drying clothes. We were warm now, well fed and contented. It was Wessel who summed up the experiences of the past sixteen hours: "Well, Frank, I guess we can call it a day."

On July 30 the aircraft arrived and flew us back to a civilization that had become strangely and delightfully remote.

Air co-operation and supply have already aided the explorer and will continue to aid him in the remoter regions of this earth. In the present instance it proved that a small expedition can, given only a suitable lake or river as landing ground, avoid weeks and even months of travel by packtrain and canoe in northwestern Canada. Aircraft offer also the most efficient and economical means of approach to remote areas such as those to the east and west of the Finlay and Kechika rivers, and there is enough unmapped and unexplored country in these areas to keep geographers, mineralogists, geologists and mountaineers occupied for many generations to come.

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THE FIRST ASCENT OF MT. CONFEDERATION

BY JOHN D. MENDENHALL

In the southern portion of Jasper Park, east of the confluence of the Athabaska and Chaba rivers, rise the rose-brown towers that culminate in the pyramid of Mt. Confederation. An isolated vedette of the majestic Columbia group to the south, the peak would have commanded interest even had it not been one of the few virgin summits visible from a Park highway viewpoint.

The 9,740-foot mountain repulsed six attempts at conquest prior to 1947. The first known assault was made in 1927 by the guide Hans Fuhrer, with A. J. Ostheimer III, who decided that the southwest arête offered more promise than the northwest ridge. In 1936, Cromwell and North attacked the west portion of the south face above Gong Lake, traversing easterly for two miles and storming the east ridge. This determined pair was halted by difficult rock but 500 feet below the summit. In 1939 a gallant team from the Appalachian Mountain Club, the Misses Fuller and Reid, (now Mrs. Orcutt), attempted the northwest ridge. The fourth party, consisting of Mr. and Mrs. David Millar and Miss Knowlton, left their cairn upon this arête in 1940. That year also witnessed an attempt by Mrs. Mendenhall and myself, of the Sierra Club, climbing directly up the long couloir that slits the east cliffs of the west cirque, to gain the northwest rib just below the final steps. This climb was handicapped by rain and thick mists, while ricochetting rocks required careful timing when the gully was crossed. Above the notch, balance climbing on the slippery rock was unsafe, and outmoded pressure tactics were employed as we moved upward in the blinding mists. It was agreed to continue if the visibility improved or the rain ceased. The latter occurred—but thick snowflakes quickly limited our horizon" to sixty feet, and route-finding became very difficult. Furthermore, a bivouac in our soaked condition would have been unwise. In the inspiring words of Andreas Maurer, "Where the clouds can go men can go; they must be hardy men." Conceding that hardier men were required, we roped down in thickly swirling snow. The September weather remained bad, time ran short, and defeat was admitted for that year.

In 1941, Mr. and Mrs. Philip D. Orcutt reached 8,800 feet upon the east ridge, being turned back by new snow overlying bad rock. The United States prepared for war, and the day seemed remote when Ruth and I could once more battle the mountain and its allies—the rain, snow, clouds, and swamps that formed defense in depth. We spoke often of the peak, and it gained a definite personality in our thoughts. Other climbers must have had this experience, when they have struggled upon an unclimbed crag or a virgin face. This was the picture in 1947, when it was finally possible to return to the attack. Six parties had sought success amid the rose towers, and we could but hope to be the proverbially lucky seventh. By mere chance, our pack in from Sunwapta Falls began upon the 7th of July! But our car had been deluged with rain the preceding day, and it was probable that snow had been lacing the peaks above the sullen clouds.

A generous amount of planning preceded the trip; it was essential to be prepared for any reasonable contingencies of weather and technical climbing difficulty, yet hold the packs to weights that would permit us to cover the wild miles of windfalls, swamps, and huge talus. Despite a well-planned commissary that totaled but three pounds per day for both of us, ice and rock equipment joined with tent, extra clothing, and myriad other items to make formidable loads. I was dismayed to discover that my pack weighed ninety-four pounds, while Ruth's bulging burden almost burst the seams of her sack! After every dispensable object had been eliminated, my pack was hopefully re-weighed—ninety-three pounds! We resignedly shouldered our burdens and plodded southward toward combat with the distant crags.

As the snow-streaked cliffs of Mt. Confederation gradually rose higher above the wild valley of the Athabaska, the peak's defenses were anxiously studied. The recent storms had deposited a layer of snow atop last winter's ice, so the mountain would not be in the best condition. However, as is always the case in these ranges, one must move into position and strike upon the first half-favorable day.

A few miles had been covered by now, and the inspiring icefields of Mt. Quincy vied with the dark precipices of Fortress Mountain. But even the long July day was drawing to a close, and camp was made with hopes that the light patters of rain did not presage ill weather upon the morrow. While Ruth did wonders with wet kindling, I erected the tent, covered our equipment, and tried to read the minds of the clouds that swirled over from Ghost Mountain.

The next day dawned pleasantly, and we hurriedly packed and trudged on up the Athabaska Valley. The schedule called for establishing a high camp in the west cirque of Confederation the following day, so we pressed onward over the undulating terrain that gradually rose toward our goal. The trail signs became faint after the first few miles. Blazes were old and infrequent, and 1940 taught us to follow the marks of the elk and the great moose—tracks, worn logs, sometimes only hair snatched by the branches indicated the proper way through the maze of fallen timber and swampy ground. The beasts had located the best paths and their weight had broken or worn down some of the obstacles. Accordingly, whenever the way was lost in the windfalls, which was disgustingly often, we dropped our packs and ranged up and down hill until another promising game trail was located.

By late afternoon, Confederation was a reddish-brown, snow-streaked pyramid dominating the east. Mt. Columbia and the Twins soared above the groping fingers of the Columbia Icefield to the south, and Chisel Peak and Serenity Mountain invited us to visit the Fortress Lake country. Near at hand the raging, thundering Athabaska, gray from the glaciers that spawn it, rolled toward the Arctic. It was a majestic scene, and excited our outspoken admiration even as we proceeded with the commonplace duty of placing a cache above reach of marauders. Soon Confederation, mighty Alberta, and the ermine Twins were bathed with alpenglow, and the short Canadian night fell as we sought rest against the hard ground — at peace with even the few mosquitoes that hummed disinterestedly about.

Profiting by the experience of seven years before, it was decided to by-pass Gong Lake, climbing directly from the Athabaska to the west cirque. The 7,000-foot campsite was attained by 2:30, and the 2,000-foot cliffs that form the east wall of the cirque were surveyed. Confederation lost little time in unlimbering his armament, and rocks and snow cascaded down our route of 1940 to warn away two brash humans. It was decided to ascend the entire northwest arête rather than follow the steep couloir of the previous attempt. Although the ridge would entail a longer, more difficult climb, we would be spared falling rocks and the weight of crampons. After a hearty dinner, our bags were sought early in preparation for the morrow.

It was barely gray as we arose, July 10, but signs indicated at least a few hours of good weather. As it grew lighter we started up the cirque toward the lowest notch in the northwest ridge. This col was utilized by the Misses Reid and Fuller in 1939. Although they did not attain the summit, they deserve credit for finding the most practical route upon the mountain. Accordingly, we named this the "Appalachian Col."

Within an hour the pass was underfoot, and we roped up for the ascent. The cornice was quite unstable-looking; in common with all that were seen this day, it was cracked and apparently anxious to plunge down to the North Glacier eight hundred feet below. It was fortunate that none of

our activities called for frontal assaults upon the rotten masses that graced the ridge at intervals.

Mindful of the long ascent before us, we employed continuous movement whenever possible. Now climbing a wet chimney overhung by a mass of snow, now belaying carefully across a cracked cornice, we mounted steadily as the wild, gaunt peaks to the northeast dropped below. Our route was bathed in sunlight, although ominous clouds marshalled over Fortress Lake and dark reinforcements obscured the Columbia Icefield.

Suddenly the square-topped mass that ends the lower, easier half of the arête was surmounted, and the final towers of Confederation were in full view. Ruth correctly felt that the inspiring 800-foot battlements directly before us formed the highest point, while I feared that a peak beyond, topped by an enormous frowning cornice, might be our objective. Even if the closer tower were the higher, a difficult ascent was still in store. I guaranteed my companion that access could be gained to the airy platforms of snow half way up the cliff. What lay above would obviously require careful climbing. With a glance at the darkening horizon to the southwest, we passed our high point of 1940 and pressed onward.

Out to the left, far above the North Glacier, traversing on snow that once fulfilled its threat to collapse. Then, steep rock, evilly plastered with thick slabs of moss that perpetually oozed water, so that the rock was ever slimy. Exposed pitches, but the holds square and well-spaced. As we gained the platforms and stood face to face with the grim keep, Confederation summoned the ally that had bested us seven years before—the sun was blotted out, a chill wind with an edge sharpened upon the blue glaciers of Quincy struck us, and alternate flurries of snow and rain made the slippery rock still more treacherous.

Racing the weather, we lost little time in attacking the most favorable-appearing weakness in the peak's defenses, a steep crack plagued with frigid water from the block of ice that was wedged like a chockstone above. After a few minutes' struggle in the chilling drizzle, I was compelled to admit defeat for the moment and descended to find a more suitable route. The best chance appeared to lie up a face to the right, absolutely vertical but with good holds above the first ten feet. Before I started the pitch, Ruth called that the rocks appeared to offer a good chance farther to the right, just before they plunged downward 1,800 feet to the floor of the west cirque.

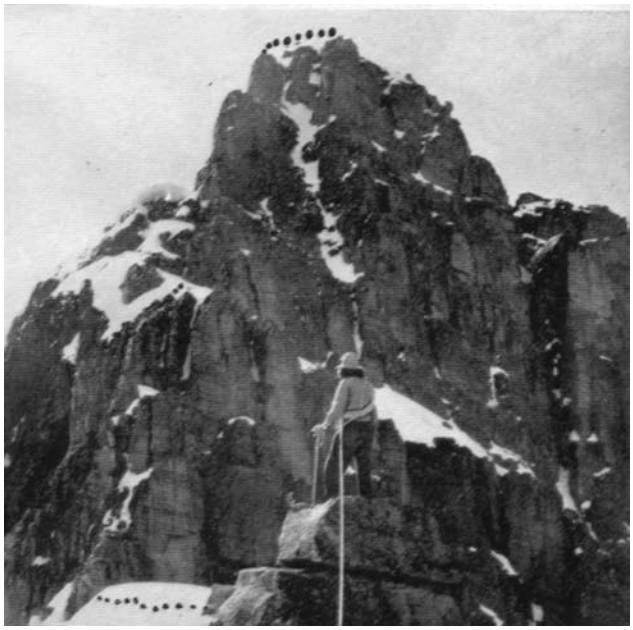
Excitedly, we descended a snow-covered ledge, and prepared for what was apparently the key to the mountain. Ruth took up her belay position upon a sound rock, then I made a long step to a scanty, out-sloping, slippery hold, two fingers found a shallow wrinkle, and a long reach upward yielded a comparatively good handhold that accommodated four fingers—with this discovery came the happy realization that the pitch was definitely conquerable! After running out fifty feet of nylon, I found a good belay spot where a rib split the gully. Hoping that Ruth would not pendulum into space from the slippery protuberances, I called to her to climb. My concern was dissipated when she speedily negotiated the knobs. The route now led inexorably to a steep couloir that split the final towers — a snow chute that had previously been considered as a last resort because it was obviously a favored track for rocks. Well, here were we, hopeful that the freezing wind would stabilize the debris above.

A long, airy step and a few feet of careful climbing were followed by continuous going—a boon, in view of the cold wind and the time element. A short stretch of snow preceded exposed rock, slimy in the rain but preferable to the scarred couloir. The windy arête was soon underfoot and gaps in the clouds afforded a splendid view extending over barren peaks to the glaciers of Brazeau. However, our attention was riveted upon the final cone of steep snow that capped the ridge before us. Ruth provided a firm belay while I cautiously ascended the slope. The snow was underlain by

West Face Of Mt. Confederation.
Photo J.D. Mendenhall.

Climbing On Wet Rocks.
Photo J.D. Mendenhall.

Steep Rocks Below Summit.
Photo J.D. Mendenhall.



Last 800 Feet.
Photo J.D. Mendenhall.

bluish ice, and could either plunge almost two thousand feet to the North Glacier or cascade down the couloir that we had recently quitted. The angle eased off above, and I belayed around my axe as Ruth climbed the steps. A few seconds later, about one o'clock, we stepped together upon the highest point of snow, ending our campaign that started seven years before.

North and west, the view was blotted out by clouds that towered high overhead. But the majestic, glacier-clad peaks seen through rifts in the clouds to the southwest, south, and east were most inspiring. Symmetrical Mt. Columbia, flanked by ice-sheathed King Edward and the Twins, dominated the southern end of the Athabaska Valley. From its birthplace in the glaciers of Columbia, the storied river, gray with glacier flour, rolled by our peak on the way to the Arctic. The impressive pinnacle of Warwick Mountain vied with the almost audible challenge of glaciered Quincy west of the valley, while mighty Alberta towered above a maze of ice and rock to the east. In the foreground, south of our summit but beyond Gong Lake, the fang that is so impressive from the river had become an insignificant minor summit.

Southeast, up the Gong Valley, the view was gaunt and forbidding. Glaciers riven with icefalls separated the slopes from the cliffs above. Next was an impressive turret about 10,300 feet in elevation, guarded by a long, crevassed tongue of ice. North of the broad glacier that closes the head of Gong Canyon and east of our vantage point, the wild peaks above the Sunwapta thrust gnarled knuckles skyward, while the clouds permitted occasional glimpses of Mt. Brazeau and his glaciered satellites to the northeast.

In the chilling wind that numbed bare fingers and made photography a burden, even the grandeur of the view did not erase thoughts regarding the problems of descent. Far below, the line of tiny steps dipped and climbed and dipped again as they followed the arête to the safe going far below. We were eager to start upon the long and slippery descent and the hour upon the summit dragged interminably. After erecting a cairn upon a windswept ledge of rock east of the snow cap and having a compact lunch, we welcomed the warmth of movement and the concentration demanded by the unstable going. Time was passing rapidly, and it was quicker to climb down than to set rappels. Lower and lower we went, moving consecutively through swirling flakes and mists. The critical traverse was readily passed and the exposed but simple rocks above the North Glacier were soon attained. At this point, Mt. Confederation sportingly replaced the clouds with welcome sunlight.

Racing the sun, we moved continuously down the ridge wherever possible, not neglecting to climb carefully over the cracked cornices and down the damp chimneys. The rocky gully was reached just before dark, and it was a relief to unrope after fourteen hours. The tent was attained almost eighteen hours after our departure.

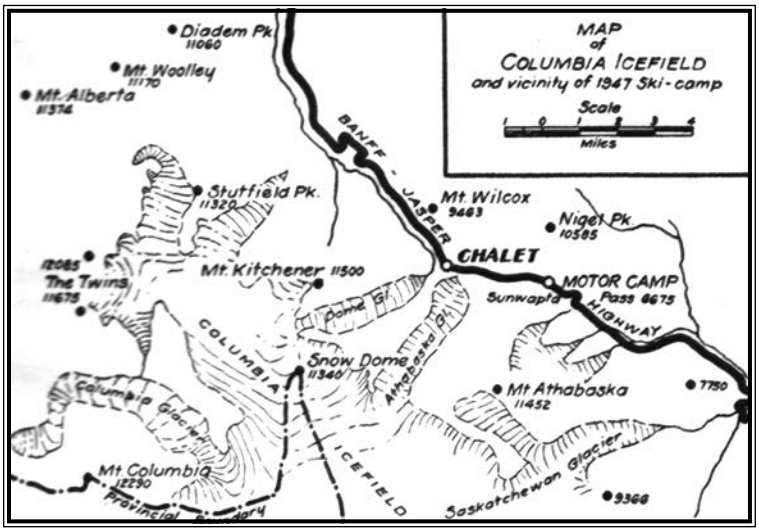
The following day I soloed the highest point of the northwest ridge. It was an enjoyable climb upon dry rock, and provided an excellent view of Confederation's great pyramid. Then two nights and a day of driving rain confined us to our tent, a water-repellent that gave good service. With food running low, it was decided to ascend the towers that terminate the northwest ridge, overlooking the Athabaska Valley. The climbing was upon steep, loose rock, challenging but an anticlimax after the struggle in rain and snow a few days previously. After topping all of the fingers, we returned to camp and packed down to the Athabaska that afternoon.

The next day we headed out, regretfully leaving the beautiful alpine scenery—the glittering glaciers, the soaring rock walls, yes, even the biting winds and swirling mists and flakes of the heights that had become almost a part of ourselves. These were pleasant and inspiring memories to carry homeward.

SKI CAMP 1947

BY ETHAN GALE

As so many Ski Camps had been held in the Little Yoho Valley, it was decided to go in 1947 to a new area. The place chosen was on the Jasper-Banff Highway, near the foot of Mt. Athabaska, with wonderful views of that mountain and of the Athabaska Glacier leading to the Columbia Icefields. The site was well remembered by those of us who had been at the Summer Camp in 1938, though the Columbia Icefield Chalet had not been built at that time. The main party went in by bus from Jasper on March 29 and was housed most comfortably in the garage building attached to the Chalet.

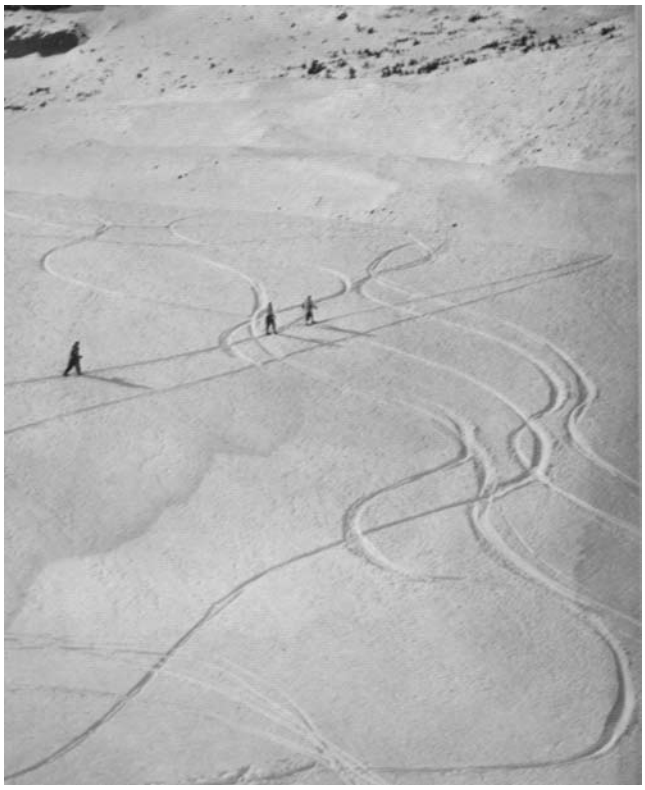


An avalanche had prevented the Park authorities from ploughing out the road right to the garage building, so all stores and kit had to be packed in about a mile. Opinion was divided as to whether personal kit was better taken in one staggering journey, or two moderately easy ones. Harry Rowed divided his kit into a light and a heavy pack, and carried them a short distance alternately, because when he took the heavy one off, he really enjoyed the light one!

The accommodation in the garage building was palatial. Beds, mattresses, pillows, cupboards, tables, mirrors, basins, and a constant supply of hot water (until Brigadier Reford left) in a colossal watering can with a perilously wobbly spout. Ken Jones fed us magnificently — the apple pies during the second week are particularly memorable. And the glassed-in front room, with armchairs purloined from here and there, allowed us to loll in comfort and warmth while gazing at Athabaska and the icefalls.

But the weather! Six times we tried to climb Athabaska, and we never got beyond 10,000 feet. We only tried to reach the icefields once — the clouds were down all the time — and we were driven back then by a head wind. Early every morning the same question was asked in the kitchen, "Well, Ken, what do you think of the weather?" and the same answer was received "I don't think Old Hughie is feeling too good this morning!" ("Old Hughie" is Ken Jones' Weather Man, and Ken had not got him under proper control this year) But in spite of "Old Hughie's" vagaries we had a lot of good expeditions, and were able to ski every day. Though one man was heard to say he'd rested

Mt. Athabasca From Summit Ridge Of Wilcox Peak. *Photo J. Whellans.*



Skiing On The Tongue Of The Dome Glacier. *Photo H. Rowed.*

Carace Building. *Photo H. Rowed.*

With The Athabasca Glacier And Mt. Andromeda In Background.

The Columbia Icefields Ski Camp Group. *Photo H. Rowed.*

so much today that he hoped he wouldn't feel so tired sitting around tomorrow!

Snow conditions varied. Sometimes we skied in flour up to the knees, sometimes on concrete, occasionally in glue, and quite often in good powder. Though frustrated so often from getting to the top of Athabaska, we can be said to have explored the slopes up to 10,000 feet with most conscientious thoroughness. Usually it was brilliantly fine and exceedingly hot as we panted up to 9,000 feet. From then on the weather rapidly deteriorated, until we stopped and ate our lunch in an exasperated huddle at about 9,500 feet, before skiing down through dense clouds — visibility nil. On Good Friday we took a new route, up to a col in the east ridge, and found a way down the other side, getting some good glacier running, with the incidental interest of not knowing if there would be a possible route through the icefall. There was, and we had some excellent timber-running below. This expedition was so much enjoyed that it was repeated in reverse during the second week. On the Easter Sunday summit attempt we got a bit higher, and the party had to rope up. The leader of one rope, Jack Whellams, watching the flounderings of his middleman who couldn't do uphill kick turns, remarked resignedly that at the top we'd know how many zigzags we'd made by the number of twists in the rope.

We had good timber-running at Hilda Creek on several occasions; and would have had more, had the Park authorities been able to plough the road as far as Sunwapta Pass. "Bugaboo Bill" (Rex Gibson's Chevrolet) could then have saved parties the long slog up the road.

There were two expeditions into the Stutfield basin. For the first, visibility was bad; but the second party enjoyed intermittent sunshine, got quite close to the icefalls at the head of the basin, and found a huge ice cave in the glacier, which was photographed from all angles.

When we got back from this trip, we found Lincoln Moore, one of the Camp boys just returning from Mt. Athabaska. He had set out that morning to ski alone on the slopes of the glacier — the same slopes up which we plodded on our various summit attempts — and the going was unexpectedly good, and the clouds lifted from the peak, and he suddenly decided to go on up to the summit. Luckily the weather stayed good. This unofficial effort was the only climb of Athabaska made during the Camp.

Jack Whellams, Rodney Adamson and others of the advance party climbed Wilcox Peak on March 28. And a party on April 10 went over Wilcox Pass from the south. We passed through an old campsite used by the packtrains from Field and Lake Louise to Jasper, and followed Tangle Creek down to the highway. Tangle Creek is well named. The first two down had vowed a vow not to remove their skis (this we discovered afterwards) and I fell through the remains of their so-called snow bridge into Tangle Creek, and had to remove my skis to get out. After that there was no snow bridge left, so everyone had to remove his skis. Further down, the leaders did a really tricky bit of rock climbing on skis. It didn't appeal to me at all, so I took mine off again, and performed a slightly painful sitting glissade, thereby removing what was left of the snow. I think the rest had to find a new route. When we finally reached the bottom, "Bugaboo Bill" was there to take us up the highway again.

On the same day a party came in off Athabaska and burst into the garage saying that they had just skied over a hibernating bear. This turned by easy stages and with mounting enthusiasm into a grizzly bear—a grizzly bear with a cub—or cubs—or two grizzly bears with innumerable cubs! The expert—Ken—went to investigate the next day. He found the tracks of cubs, but they had gone in again and would not come out to be photographed.

After a good deal of hard eating the last few days, to finish the perishable food, we left on April 12. "Frustration Camp" we called it, for in a magnificent ski-mountaineering area bad

weather frustrated us from making even one big climb. But we saw a lot of new country—and we certainly appreciated all the hard work that had been put in to get us to a new ski area, and to house and feed us so well.

"Old Hughie" did not manage to stop all our expeditions. Nor could he prevent us enjoying ourselves.

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RECOLLECTIONS OF AN INVITED MEMBER

Adapted with kind acknowledgement, from an article in the *Norsk Tinderklub Jubilee Book,*

BY N. E. ODELL

As an Invited Member of the Norsk Tinderklub, I feel it is a duty as well as a real pleasure to try and put down on paper for the Jubilee Book some of my reminiscences as a mountaineer. When I say "try" I mean it, for I am writing without any notes in mid-Atlantic on my way to the Canadian Rockies to take part with my old Everest friend, F. S. Smythe, and a few others, in the exploration of a mountain region in the extreme north of British Columbia. So I trust my fellow members will forgive all deficiencies in these random notes.

The scene of the earliest days of my climbing career is set at St. Lawrence, my birthplace on Christmas Day 1890, in a beautiful part of the Isle of Wight, where as an infant I commenced upon trees with my sister. However, I had the good fortune at the age of twelve years to be taken for my summer holidays to the Lake District in the northwest of England. There my eyes were literally and metaphorically opened. Never shall I forget the vision transcendent that burst in upon me as I gazed spell-bound upon the mountain forms grouped round lovely Derwentwater, a vision that was ever changeful on account of atmospheric effects, as well as the disposition of rock, crag and variable vegetation. I think it was the great appeal to my nature of this type of scenery which years later, on my first visit to Norway, brought a repetition of the same kind of rapturous joy. It was in those tender schoolboy years that, secretly in part, I used, often against orders, to wander off to the fells and scramble up their steeper faces, and particularly delight in the headlong plunge to the dale by leap and bound down scree or grassy slopes. Rock-climbing proper came a little later when, as the result of an introduction by the Abrahams, the well-known mountaineer-photographers of Keswick, I had the good fortune to be taken up some of the harder courses by that fine cragsman, George Woodhouse of Sedburgh School. Then, while still at school, I had the great good fortune of a holiday in the Alps, where needless to say a vision of even greater intensity burst upon me, which seemed to alter my whole outlook on life and project it against a background of snowy mountains, as vividly celestial in their appeal as indeed otherwise terrestrial. But I was no Ruskinian content to gaze from afar, and I accounted myself fortunate in being given my first Alpine climbing experience on the Aiguille du Tour, from Finhaut, by that eminent mountaineer and A. C. member, A. E. Field. Three further Alpine seasons followed, prior to the First World War, one in the Bernina group of eastern Switzerland and two in the Pennine range, mostly around Zermatt and Saas. Some bigger peaks were accomplished; but quite early I developed a strong tendency towards guideless climbing and a keenness to conduct my party and gain experience upon the more moderate peaks and courses, where it seemed that equally good experience and just as much fun could be found. In 1914, just before the international debacle, in accomplishing the famous High Level Route from Chamonix to Zermatt, guideless with a novice, I experienced a feeling of the consummation of this means of acquiring an independent technique the better to fit one for bigger things to come.

And then came the first Great War and the cessation, (or was it to be only suspension ?) of all that one held most dear, and all one's passion for higher alpine adventure. However, the war period was not entirely lost, for as a subaltern in the Royal Engineers, both before and after the best part of a year at the French Front, I was stationed in North Wales. There within striking distance of Snowdonia I was fortunate to be able to extend greatly my experience in rock-climbing, with many

able companions at times, and often accompanied by my wife, who took to the steep crags of her native hills, like the proverbial duck to water. The grand Cuillin Hills of Skye were also visited at that time, as well as mountains of the Scottish mainland.

The war over, and a return to student-status, very soon brought one, ere graduation, under the spell of the possibility of greater exploration in foreign parts. The first and principal spell was an invitation to participation in the reconnaissance of Mount Everest of 1921. Reluctantly, however, for various reasons this had to be declined, and instead that same year I had the very pleasant alternative (which could be fitted into the summer vacation) of leading the topographical and geological party of the first Oxford Expedition to Spitsbergen. Hauling sledges, with R. A. Frazer and T. G. Longstaff in my party, up the Nordenskjold Glacier into the eastern interior of that country, in mostly atrocious weather, gave one a taste of arctic travel, combined with mountaineering, which made an instant appeal, apart from that of pioneer geological mapping and research.

The years 1920 and 1922 provided Alpine seasons of some considerable satisfaction, with my companions, R. A. Frazer and R. F. Stobart, upon those superb satellites of Mont Blanc, such as the Grepon, Charmoz, and Dru, and an attempt by a new route up the terrific east face of the Aiguille Verte.

Sorrowfully again, I was obliged to decline accompanying the second Everest Expedition of 1922, but I returned with zest next year to Spitsbergen, where the second Oxford (Merton College) Expedition had ambitious plans for further exploration. We found it necessary on account of ice conditions in Hinlopen Strait to give up work in Northeast Land; but my party, consisting of Frazer and two novices Irvine and Milling (from the Oxford Boat!), was able to make a most interesting new crossing of the eastern section of the country, survey topographically and geologically a considerable area of its mountains and glaciers, make new ascents in the Stubendorff and other ranges and finally embark on our waiting sloop at the head of Billen Fjord. On our return to Tromso four of us sailed off to Sorfjord, and under the superb conditions of prolonged autumn alpine glow, which is such a fine feature of northern Norway, made the ascent of the Stortind in the Jaegerwand district. This, and a solo ascent of a smaller peak in the Lofoten Islands, was at that time my only experience of Norsk climbing.

That same autumn I found myself in the hills of southern Persia (Iran) examining geological structures for oil possibilities, and at times, on the borders of our concession in that wild land, running the gauntlet of native gunmen. Indeed on one occasion, threatened by a rifleman on a high rocky ridge, I evaded him only by a tactical use of ground and the fastest cross-country run (langren without skis!) that I have ever accomplished in my life.

From Persia to India, to take part in the third Expedition to Everest of 1924. The story of that adventure is well known, and has been admirably recorded by E. F. Norton, our incomparable leader, in *The Fight for Mount Everest,* and by Sir Francis Younghusband in his summary *The Epic of Mount Everest*. Episodes of such an experience must remain indelibly impressed upon one's memory, and not alone the struggles and the trials on the peak itself, but also the thrill of travel over the Himalaya into, and across, that romantic, secluded, and vividly beautiful, land of Tibet. Too, the fascination of research and scientific investigation of so inaccessible a region must ever make an appeal to him who has eyes to see, and the spirit of enquiry in his soul.

In 1925 my wife and I were in the Alps once again for a short holiday at Saas Fee, with an impression gained of the outstanding beauty of Alpine mountain form and scale which even the glory and immensity of the Himalaya could not exceed.

And so to Canada in 1926, to work in the mining districts of Ontario and Quebec. But pent up in the dense forests and bush of the East one soon longed for a wider view, and for the grand mountains on the other side of the continent. The opportunity came in 1927, and my wife and I attended the hospitable annual camp of the Alpine Club of Canada, and from the Little Yoho Valley, and later from Banff, made our first contact with the Canadian Rocky Mountains. Peaks of the President Group and Mt. Edith were our principal ascents during a short holiday only.

Through the generosity of Harvard University, where I was lecturing in geology from 1928-30, I received a research grant to go over and study the conditions of mountain structure and metamorphism in Scotland and Scandinavia, during the summer vacation of 1929. In the course of these studies from Turtegro, from Romsdal, and finally from Are, I made a good many ascents of mountains and hills, and formed such an impression of kinship both with the country as well as with its charming people, that I vowed to return again at the earliest opportunity.

But in 1930 I was destined for further geological work in British Columbia, and during part of the season some fine climbing in the Rockies: in the Jasper district, from the A.C.C. Camp at Maligne Lake; from Lake Louise; and in the Selkirk Range. The ascents of Mts. Robson, Brazeau, Henry MacLeod, Sir Donald, Fox, Tupper, Victoria, Louis — some of them by new routes, were amongst others duly accomplished. They were described in an article in the *Canadian Alpine Journal* for 1930.

An unexpected variant came next year, when Prof. Alex. Forbes, of Harvard Medical School, invited my wife and me to join his expedition to explore the practically unknown mountains of Northern Labrador. We had many adventures sailing along that long wild stretch of uncharted coast, although equipped with an aerial eye in having a couple of sea-planes attached to the expedition for the purposes of our air survey. The character of the Torngat Mountains of the far north of the peninsula, as well as the Kaumajet Range to their southward, has much in common with many groups in Norway, even to features of the geology. There is, however, far less vegetation, far more "felsen meer"; only scattered glacierettes in the higher corries; and a profusion of large pugnacious mosquitoes which exceeds anything I have ever seen in any other part of the world!

The autumn of 1931 saw me home again, and at Cambridge University, for research and further teaching. Rock-climbing in Wales, and the Lake District or Scotland, had to suffice till 1933. Then I was torn severely between two alternatives: an invitation from Ruttledge to join the fourth attempt on Everest and another from Miss Louise A. Boyd to my wife and me to accompany her expedition to northeast Greenland. Most reluctantly, and only on the grounds of domestic expediency I eventually had to turn the former down. As a preliminary to Greenland, we spent a very delightful week or so, in perfect weather, at Oye, and made several ascents, including Slogen and Smprokratind. Our first land-fall at Jan Mayen, enabled Walter Wood (now President of the American Alpine Club) and myself to ascend Beerenberg; and on arrival in Greenland, after sailing to the head of Franz Josef Fjord, in the course of our topographical and geological survey, many pioneer ascents of peaks along the border of the Inland Ice, and elsewhere, were made. Apart from others, mostly unnamed, the summits of Teufelsschloss, Nathorst, Gog, Gore, et al, were attained for the first time.

The Cuillin Hills of Skye were our objective in 1935 and some fine climbing in that Loften-like group was the result. In our party was Clare Mallory, daughter of George Mallory of Everest, who was endowed with a high measure of her father's skill and enthusiasm.

Then in 1936 came one of the principal experiences of my lifetime: the Anglo-American Expedition to Nanda Devi. The story of that wonderful adventure has been well, if at times cynically,

told by H. W. Tilman in his Ascent of Nanda Devi. We were a party of friends, all of whom had climbed together before in various combinations, and we had none of the frills and extravagancies of many of the larger Himalayan expeditions. The approach through some of the loveliest foot-hill country imaginable, and the passage of the terrific Rishi Ganga, were supreme experiences in themselves. The actual climbing above our base camp, at an approximate altitude of 5,200 metres, (17,000 feet) was in places of a high order of difficulty, and on rock, snow or ice set on the average at a high angle. The success of Tilman and myself in reaching the summit is entirely to be attributed to the excellent teamwork of the rest of the party who, on account of the eventual failure of all our Sherpas and other coolies, carried out a magnificent and prodigious task of heavy porterage under difficult conditions. That Charles Houston was robbed, by fortuitous illness, of reaching the summit on our first attempt, was a lasting regret to us all, apart from a severe disappointment to himself. It was indeed a privilege for the entire party to have been able to take part in this happy pilgrimage to the innermost precincts of the Goddess Nanda, irrespective of our attainment of the highest summit so far reached, or, for myself, the gleaning of further information on the structural and glacial geology of this most interesting and beautiful portion of the Central Himalaya.

Two years later I again set forth for the Himalaya, and once more to Everest. We were a smaller party than heretofore in this series of attempts, conforming strictly in that respect and in "austerity" and "lightness" to the now well-known doctrine of Tilman and Shipton. Comforts and amenities of any sort, even spare clothes, were looked upon with suspicion: tinned food was a luxury or undesirable "chemical." We must have the simplest of diet, native food preferably, irrespective of those fickle reactive features at high altitudes, namely the human palate and stomach. We must, if possible, live on the country, whether the slender economic resources of the districts of Tibet, through which we should pass, could stand it or not. These matters have been discussed and disputed elsewhere.[1] The full account of the expedition from the pen of "Bill" Tilman or Bhalu (the Bear), as named by the Sherpas, is now in the press and is likely to be published, early next year. In the result it was an abortive attempt stricken, as had been the previous one in 1936 by an inordinately early monsoon, which rendered our efforts useless to reach even within 300 metres (1000 feet) of the highest points attained in 1924 and 1933; and moreover subject to avalanche hazards which were quite beyond justifiability. It was a disastrous expedition, otherwise, for me in that there was stolen from one of our Tibetan camps on the return journey the whole of my special petrological collection, which I had waited fourteen years to complete. This blow, incidentally, was cruelly increased during the late war by the further loss of all my diaries, field-notes, scientific manuscripts and maps pertaining to three of my Himalayan expeditions.

The second World War found me again in the army, at first with my old Corps of Royal Engineers, but in 1941 giving a hand in the early training of the Commando units. For a time I was attached to No. 5 Commando, to instruct in cliff climbing and coastal assault operations on the grand sea-cliffs of Cornwall, where years before I had first climbed with A. W. Andrews, A.C. Later I assisted in training other Commando detachments in the mountains of Wales, the Lakes and Scotland, where subsequently, towards the end of the war, I played a similar role with the 52nd (Mountain) Division. A period of service in India— 1941-42 enabled me moreover, en route to make a good rock course to the summit of Table Mountain above Cape Town; and whilst in India, a first visit to the barren rock ranges of the Northwest Frontier in the vicinity of Quetta, where it was an unexpected pleasure to find my old Everest friend, General E. F. Norton, in command.

1 *Geographical Journal,* 1938 ; and *Himalayan Journal,* 1940.

Perhaps I may complete these rambling recollections by mentioning that last autumn whilst in India again, on a lecture tour, I had the great gratification of a first visit to the beautiful mountain state of Kashmir, which has been often described by pen, brush and song. Although there were not the beautiful conditions of spring or early summer, nevertheless the tints and colorings of autumn were past description, and with the Queen of Sheba I could veritably exclaim, "the half was not told me"! Rambles on the forested ridges and in the alpine glens of the Sind and Lidar valleys, gave a peculiar exultation after the hot dusty plains of India. But the supreme joy was perhaps the superb vision of the immense Nanga Parbat, 8,130 metres, as seen from the early sunlit snows of Killanmarg, above the well-known skiing centre of Gulmarg [2] although some 90 miles distant from its southeastern precipices.

As has been said elsewhere, "the mountains are truly good to all:" most certainly they have been, in the entire range of their varied aspects and interests to me. An insatiable wanderer in this beautiful world of Nature at her grandest, I am indeed constrained to exclaim with Tennyson's "Ulysses":

I cannot rest from travel
I will drink life to the lees.

2 The suffix "marg" is the equivalent of saeter or alp.

THE TRAVERSE OF MT. COLIN AND OTHER CLIMBS IN 1947

BY N. E. ODELL

On our return south from the Lloyd George Mountains, as described elsewhere in this Journal by F. S. Smythe, it was his and my intention to try some of the bigger peaks which are accessible to Jasper. We hoped, indeed we knew it to be essential to our purpose, that the weather would be kinder than it had been during our Lloyd George Expedition. There surely was reason to suppose that a bad July would be followed by a good August. This however, did not materialise, and it was disappointing that our local expeditions to both Mt. Robson and Mt. Alberta in particular were entirely frustrated by impossible snow.

So we were forced to turn to lesser "fry", fry by no means to be despised, in the rock peaks and ridges, a good many of which have remained unclimbed, though accessible now from the Banff-Jasper Highway, or other local roads.

We had no sooner returned to Jasper in early August than a visit was paid us by Margaret Finlay and Allen Bruce-Robertson, who were full of news, first news to us, of the Club's Annual Camp. They were hungry for more climbing, and if possible a new ascent.

Earlier in the season, with G. Morris Taylor, Frank Smythe had made the ascent of Mt. Hardisty, and had gathered that the prominent summit lying southeast of Mt. Kerkeslin was still virgin. To that we decided to go.

From a point on the highway beyond the 27th mile post from Jasper, a party of five of us (including John Ross of Harvard) set off up a convenient creek, which descends southwestward from between Kerkeslin and our summit. The creek was understood by Frank Smythe to have been used by some earlier fisherman en route to a lake lying northeast of Kerkeslin. There seemed to be some confirmation of this rumour when we found an actual piece of leather heel in the stony bed of the creek.[1] The forest below was easy, and the greater part of our approach lay up the rocky stream-bed and more open stretches of scree, until we struck a high terrace below the upper limestone cliffs of the mountain. Thence a steep but easy chimney, which we climbed on two ropes, gave out on further scree slopes beneath the final cliffs of the mountain. It was here that quite obviously the fun was to start, for no straightforward way presented itself. Moving, however, to the left, at the northwest corner of the summit, opposite Kerkeslin, we found a rotten 100-foot chimney, where in leading, my rope displaced a loose stone, most unfortunately, on to Smythe's head, momentarily stunning him. He soon recovered however, and insisted on leading the final wall with the remark that his "teeth were now into it"! Teeth or no teeth, the tough siliceous limestone of this 130 feet of final rampart gave us the best climbing on the mountain. The actual summit lay some 100 yards or so away, and on it we could find no trace of a previous ascent. The southeastern portion only of Kerkeslin's summit crest was visible, and this appeared to be very little (perhaps 100 feet) above our level. This latter is given by contours as ca. 9,200 feet on the new Jasper Park, South Sheet, 3 miles to 1 inch, 1947; whereas Kerkeslin's southeast summit is shown to exceed the 9,600 contour. Indeed there may be little in it with the northwest summit, triangulated at 9,790 feet.

A very cold wind had arisen, and Jasper was clearly already involved in another spell of bad weather, and we might also be in for it at any moment. It was a somewhat protracted operation for the ascent and the descent of the upper wall for the whole of our considerable party; and

1 If a name were wanted for this feature, "Fisherman's Creek" would consequently seem appropriate.

thoroughly chilled by the bitter wind, as last man down, I was glad of a doubled rope. However, a small stone managed to jam the rope in the ring of the piton and I had perforce to climb up again to release it, a proceeding calculated to try the temper of all but the most saintly of mountaineers. Our eventual descent to the lower scree slopes was made by a long easy groove, as an alternative to the first chimney of the ascent and lying northwestward of the latter (above the Kerkeslin-"Windy Mountain" col). In darkness we reached the highway at 9:15 p.m.

The windy conditions experienced on this mountain, together with its castle-like form, suggested to me the name of "Castell y Gwynt" ("Castle of the Winds"), a feature of the Welsh mountains, for this unnamed summit. Difficulties of pronunciation, however, apart from other possible objections, might make a "straight" English name preferable, and the suggestion of "Windy Castle" (or "Windy Mountain") seemed acceptable to the rest of the party participating in the first ascent.

Rather more ambitious, and estimated to provide a rock climb second to none in the district, was our next essay upon Mt. Colin, 8,815 feet, the culminating point of the Colin Range, whose jagged crest is such a marked feature of the northeastern skyline at Jasper. In June the attempts by Smythe and Wessel from the northwest, and by Gibson and Ross from the southeast had both failed, in each case from insurmountable pitches.

From a camp on the left bank of the Athabaska River near the old Henry House, on August 7, Smythe, John Ross and I set off in a boat at 5:45 a.m. Easy open forest on the far side led to the long spur descending on the north of Garonne Creek. Traversing the hillside above, and finding sundry stretches of game trail, we reached at 8:15 the upper reaches of the creek, in full sight of the imposing slabs of the southwest face of Mt. Colin. After breakfast at this point Smythe and I changed into "sneakers," whilst Ross decided to retain his boots, with the inevitable result that each had its advantage in the right place, Smythe and I "scoring" on the actual rock-climbing and Ross most decidedly on the long screes and boulder slopes on the descent. The headwaters of Garonne Creek, which we followed in a southeasterly direction, have their source in a delightful secluded alpland, with flowery meadows and a clear stream meandering through them, forming in all a most beautiful camping place. From here we struck up easy screes to reach the crest line of the range, and the lower portion of the southeast of Mt. Colin, at about 10:50 a.m. The altitude hereabouts was 8,000 feet, and it was a matter of considerable interest to me to find glacial erratics perched on this remarkably narrow ridge, and at such an elevation. These scattered erratics, formed of granite, were in marked contrast to the tough (probably dolomitic) limestone of the mountain mass. They must be interpreted as fortuitous survivals of the eastward moving Cordilleran ice-sheet, which in the Pleistocene Epoch appears by this evidence to have surmounted the ranges to an altitude greater than 8,000 feet, and to have dropped these crystalline rocks "from the interior of British Columbia at the time of the recession of that ice-sheet. The Continental (Keewatin) ice-sheet, moving westward and southwestward from the District of Mackenzie, on the basis of other evidence affecting its extent and available material, could never have been responsible for the emplacement of these remarkable erratics on the high ridge of Colin.

For a time the ridge gave us nothing more than scrambling, and it was deemed quite unnecessary to rope. Shortly, however, we reached the steep step which had turned back Gibson and Ross, and the rope, and perhaps other moral, if not direct aids seemed essential. Using a piton as a precaution in protecting his lead up an awkward angle of rock and round an overhanging comer, Smythe surmounted the place in excellent fashion, and the other two duly impressed members followed. The culminating point of Mt. Colin was not far, nor hard, to reach and we foregathered

at 2:25 on its restricted crest. The view thence was most impressive, notably the downward sweep of slabs on each side of the mountain, as well as the commanding panorama from so isolated a position. We had had reason for once this season, to feel confident in the "upkeep" of the weather for the day, but now as usual we could see a gathering of storm amongst the mountains flanking the Snaring River. It was time to be gone, and this upstanding crest was no place to be caught in a thunderstorm. We debated briefly whether to descend by the way we had come, or whether to continue the traverse downward over the northwest arête, which was obviously the more interesting alternative. A decision on the latter course was not long in being arrived at, especially as we had come armed with ample spare rope for any ordinary abseil, though we knew that there was one which might prove quite extraordinary.

At 3:10 we left the summit cairn built by us, our way leading over a remarkably narrow arête, and down numerous steps in it, which here and there were awkward rather than intrinsically difficult. The exposure was considerable, the eye often catching the downward plunge on the southwest side of unbroken slabs the best part of 1,000 feet in depth. At length we reached the crux of the northwest arête, which in June had turned back Smythe and Wessel during their attempt on the summit from this side. There the slabs rear up to form the actual crest of the arête, which is so steep and unbroken as to appear unclimbable. Descent, however, was another and more plausible matter, provided a rock-hitch or a piton, and a long enough rope could be used. The face of the unbroken slab on the left, clean-cut for some 800 feet or more, could be seen from above to have a little horizontal ledge in its surface about 60 feet down. Roping off from a well-secured piton, I found this ledge ample to land upon, and nicely within the compass of our doubled 120-foot line. Ross followed and Smythe descended last, all being suitably impressed by this, the bonne bouche of the whole climb, which occupied in all some 1 hour and 20 minutes. It was certainly a delightful pitch, which careful inspection during the descent showed might conceivably be climbed upward under good conditions by a first-rate leader. Later we learnt that our operations hereabouts had been watched through field glasses by Henry Hall and the rest of our party from the Athabaska Valley; whilst Wessel had witnessed our achievement of the summit through the surveyors' theodolite from the top of Pyramid Mountain! So witnesses of our claims were ample!

There was still a good deal of ridge to descend to the col between Mts. Colin and Hawk, which was not reached until 7:00 p.m. Thence followed a somewhat trying and, for Smythe and me in sneakers, painful descent of boulder slopes to Garonne Creek and our upward line of the morning. Camp was reached at 9:20, and the expected vehicle from Jasper not materialising, we settled down for the night on a very frugal meal. However, by ten o'clock a "rescue party" under Nona Smythe and Henry Hall found us, fed us, and peremptorily carried us off to Jasper.

The traverse of Mt. Colin constitutes a first-class rock climb, probably amongst the best in the district, and in a range where indeed there appear to be other fine unclimbed ridges away to the southwestward. From a climbing standpoint it is comparable to the better parts of Mt. Louis, and like it is structurally a series of hard limestone strata standing at a very high angle. In point of grand situations, experienced for hours together on a high isolated ridge, it provides far more than Louis. In short it is deserving of further attention.

Our next project was Mt. Alberta, for which a camp was established below Diadem Glacier at the head of Diadem Creek. As already cited Mt. Alberta itself proved quite out of the question, when Frank Smythe and I, aided and abetted by Henry Hall crossed the Habel Col for close inspection of its forbidding snow-draped eastern face. We waited in vain for conditions to improve, and meanwhile amused ourselves, when rain or snow allowed, on the rocky summits above our

Mt Colin: The Crux Of The Southeast Arete.
Photo N.E. Odell.

Summit Of Mt. Colin.
Photo N.E. Odell.

F. S. Smythe Descending Great Slab.
Photo N.E. Odell.

camp near Diadem Glacier, though Wessel and Ross succeeded in reaching the summit of Mt. Woolley. One of the rock peaks ascended by Smythe and me (and later by Graham Macphee) to the north northeast of our camp, proved an easy scramble to its summit of about 9,000 feet. The other, the culminating point of the same ridge farther northwest, I set off for alone one day after lunch. Via the northernmost tributary of the Diadem Glacier and a small icefall, I made for the boulder slopes on the western flank of the mountain lying opposite Diadem Peak. A long grind of some 1,500 feet up these steep slopes gave out on their northern edge, where a most impressive view was obtained below profound cliffs of the unnamed and extensive glacier northward of Diadem Peak. A further scree-struggle of some 500 feet brought one to the summit rocks, which were carved out of dark limestone into fantastic mushroom-like forms, suggesting "Mushroom Mountain" as a name for this apparently unvisited summit. A cairn was built, and it was noticed that the crest of Diadem Peak, triangulated at 11,060 feet, appeared not more than 100 feet or so higher.

"Mushroom Mountain" forms a prominent upstanding tower as seen across the Sunwapta River from the Jasper-Banff Highway. To its left (east) rise other curious summit forms, dubbed "The Fungi."

The col between Diadem Peak and "Mushroom Mountain", at the head of the little glacier tributary already cited, was later visited in stormy weather by Smythe, Macphee and myself. There appeared no way down the steep and rotten cliffs on its northern side to the extensive unnamed glacier already mentioned. Macphee, who had sped to the Rockies on a short visit from the East, could so far only claim "half a col"! He was quite unsatisfied. He was at least due one peak, a good icy one if possible, and the higher the better.

So on August 21, in more promising weather than usual, the same party, augmented by Rex Gibson, left Jasper for Mt. Athabaska. The usual way (Route 2 of Palmer and Thorington's Guide) was followed up the North Glacier as far as the névé basin at its head. Then, instead of turning right to the "small snow col on the N.W. arête", we worked to the left to the foot of the ice-spur which is such a prominent feature on this face. The ascent of this ice-spur, involving some steep step-cutting by Smythe, afforded a very pleasant new variant of what has become the standard route up the mountain. We took about 5 hours for this ascent and 21/2 hours to descend by the usual route. In reaching the top of Athabaska we were duly gratified (a) in having provided Macphee with one full Rocky Mountain peak, and (b) in attaining ourselves the highest summit accomplished in this season of unmitigated bad weather. For in hoping the following week for the traverse of Mt. Robson by Hainsworth, Carlson and Fuhrer's route from the Rearguard-Helmet saddle, we were unable to make more than a reconnaissance ascent of Rearguard itself (9,000 feet).

Finally, it may be added, when all others of our party had dispersed, Smythe and I set off from Banff on September 4 for Mt. Louis. A strong westerly gale was blowing, and by the time we had reached the platform below the final chimney, stones were being dislodged from the summit and blown down upon us in the chimney. Then, when briefly resting by the summit cairn we received an electric shock as a squall of hail set upon us, and our eventual descent in sleet and rain was only just accomplished in failing light at 8:45 p.m. Our trek in darkness through sopping bush and dripping forest back to the Bow Valley is better perhaps left undescribed. We at least had the satisfaction of having fought hard for our unyielding peak and in this instance of having won.

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UP RELIANCE CREEK

BY W. A. DON MUNDAY

We rejoiced when "Andy" Anderson, pilot of the Nimpkish Queen of the Queen Charlotte Airways, told us our flight from Vancouver airport to Tatlayoko Lake would be by way of Bute Inlet and Homathko valley — no finer route (below summit level) exists across the Coast Range.

"We" were the members of the party going to Reliance Creek to test the possibility of getting horses to the base of Mt. Reliance, which might make the region worth considering as a possible site of some future camp of the Alpine Club of Canada.

By a process of elimination the leadership had descended to me. Some medical person, to us unknown, had seemingly bullied Eric C. Brooks into withdrawing. Then at the University of British Columbia Dr. V. C. (Bert) Brink, who had done most of the organizing of the trip, attained a status (which few of us ever reach) of being temporarily indispensable. But he joined us for the flight. Other members of the party were Ian Kay, Jack Cade, Herman Genschorek and Bob McLellan.

A high slaty overcast deepened the normally deep tones of the slopes of the Coast Range below timberline as we rose above Georgia Strait, and such tones prompted comparison with the airy lightness which some modern painters persist in giving their Coast Range landscape. This is about on a par with painting a frivolous youth and calling it the likeness of meditative mature man.

Rain squalls darkened the Redonda Islands as we passed over their 5,000-foot crests. Then almost at once bright sky welcomed us about fifty miles to the north. Bute Inlet opened in front of us, and thirty miles from its head plainly showed a lovely tone of green derived from the glacial rivers pouring into it.

Here we had fairly entered the Coast Range. For me, of course, Bute Island brimmed with memories, it being the first gateway by which my wife and I had explored the greatest peaks of the Coast Range.

Early explorers called many of these inlets "canals" because of their trench-like forms. Ancient ice had chiselled the landscape to forms worthy of the granite in which it worked. The inlet's eastern wall rises about 8,000 feet from the water's edge. (Mt. Sir Francis Drake is 8,800 feet.) We exclaimed at a range, inland from Orford Bay, a nameless line of close-set towers unknown to climbers.

We flew at about 6,700 feet. This granted glimpses to stir anybody with the blood of an explorer, into side valleys where hidden lakes and other fascinating features lie wholly concealed from the sea-level traveller. On a lower ridge of Mt. Rodney I picked out the little coign of rock which broke through the forest and favored us with our first momentous view of the then unnamed apex of the Coast Range, now Mt. Waddington.

Very little of the Homathko River was visible through my window, but every tributary valley revealed one or more important glacier, some of them monstrous even for the Coast Range. Foremost of these was Heakamie Glacier, descending within a few hundred feet of sea level, and still untrodden by mountaineers. It shimmered back for miles to the immensity of the Homathko Snowfield. From the same sources the sinuous Jewakwa Glacier in the next valley slanted downward out of sight in the green depths of a curving gorge.

I found a sort of morose satisfaction about sighting some of the glacial origins of western tributaries which had proved such formidable barriers in the course of our 1926 effort to reach Mt.

Waddington — then popularly known as "Mystery Mountain." We had gone up Coula Creek to Waddington Glacier. Its woeful shrinkage saddened me. Its massive snout had wasted to a dirty finger thrust into the head of an unsuspected box canyon.

At about this stage of our flight the Mt. Waddington group began to claim foremost interest. It is probable that Andy suddenly decided he was flying a crate full of maniacs not certified wholly harmless. We had our safety belts off. We all had cameras. We thrust them into the hands of those occupying the best seats for a particular view, or pushed those persons aside.

Well might we be excited. We were looking at the finest aspect of the greatest peaks of the Coast Range. When the full sixteen miles of Tiedemann Glacier wheeled into sight, we saw in one sweep of the eye a zone of glaciation of 11,000 feet. My companions had never been in this part of the range, so I had the additional pleasure of noting how the splendor of the scene delighted them.

In the opposite direction across the Homathko River Doran Creek disclosed the glacier in the valley head as being distant at least eight miles from the river. (My sketch map in the 1942 Canadian Journal extended this glacier to the glacier tongue shown on the 1929 Powell Lake Sheet, which map similarly misplaces a glacier in the valley of Nude Creek.)

The plane swerved northeast. This brought the sprawling bulk of Mt. Success (so named on Alfred Waddington's 1863 map) on our left. Ahead and to the right the immense mass of Mt. Reliance rose over 9,000 feet above the main river, this being not greatly less than Mt. Robson's uplift above Lake Kinney. As we swept past the northern face of Mt. Reliance we gained our first view of the upper part of Reliance Creek.

In a few moments more we were flying over ground we would be travelling on before the day was out. The little wharf at the end of a disused mining road at the south end of Tatlayoko Lake suddenly came into sight. There I had no trouble recognizing my wife beside the darker figures of our packers, Lou and Ken Haynes, ranchers from the north end of the lake. For a number of reasons it had been thought wise to send a member of the party in by land, and Phyl's experience made her the natural choice.

Pilots prefer water less glassy calm, but Andy landed neatly, and we soon had packs ashore. We had an early lunch at the packer's camp near the lake, and started down the valley about noon. Most of the time our route led along hillsides open enough to yield outlooks towards the enticing peaks south of the river, and the younger members of our party probably would have been ready to substitute any of these for our objective.

We had four pack horses, and two saddle horses had been provided for alternate use by the six climbers and to facilitate creek crossings. We reached the previous year's "Island Camp" about 6:00 p.m., having been delayed in a few places by the need to clear trail.

Supper was interrupted by Ken and Lou grabbing rifles and rushing off in search of the bear they believed responsible for startling the horses momentarily.

Next morning (July 31) we crossed over "Haynes Pass" to reach our 1946 river ford below a canyon. Our progress was delayed by some trail work and enlivened by various encounters with vicious wasps.

When we reached the ford we had to decide where to start cutting trail to Reliance Creek. We had to cross "Homathko Toe," a broad spur of Homathko Peak, and strike Reliance Creek near its bend westward. So Lou, Ken, Ian and I forded the river with horses and scouted up the mountainside for about 800 feet, being glad to find it not unduly difficult for our purpose.

We came back, ate a late lunch, and crossed the outfit. If one watched the swift grey waters instead of the shore it produced the novel feeling that one's horse was backing upstream instead of

travelling on a long diagonal downward. In the swiftest and deepest part one pack horse was swung round facing upstream and had trouble getting going again without being swept off its feet.

Lack of horse feed down here forced Ken to take the horses back to Island Camp. The remaining six men left camp about 5:00 p.m. and roughed out the trail as far as already explored. We got back at dusk to enjoy the first of the wonderful suppers with which Phyl greeted us at about the same time every day during our work on the trail. Her contribution to the job was very real, although she missed the satisfaction of getting to work on the trail with her own axe which she could use effectively. As cook she enabled us to work longer hours.

We called this Wasp Camp. Phyl did heroic work in the midst of a constant cloud of the insistent pillagers. We ate circumspectly to avoid getting them in our mouths. We got into rougher going next day, and Lou and I as advance party had trouble forcing a route through to an upper plateau. We also discovered the biggest, most plentiful, best flavored blueberries I have ever seen. Believing our companions would fail to resist such potent temptations to stop work, Lou and I did our best with our limited capacity to remove temptation from the path of such frail mortals. Our only drink during these hot days was when we passed one tiny spring in a rock cleft. (Towards the last we found the "H20" spring at the foot of the 600-foot descent into Reliance Valley.)

Skill in the use of an axe is splendid preparation for effective use of an ice-axe. But apart from that, one who aspires to do mountaineering of the pioneering sort is not the "complete mountaineer" without being a good woodsman, and that implies some skill with an axe.

"How many years' practice does it take to be able to hit twice in the same place, Lou?" moaned one weary trailmaker as he nursed his blistered hands while watching Lou accomplishing about four times as much with probably a good deal less effort. Later, when a member of our party happened to recall with amusement how the book, *Round Mystery Mountain,* declared that logs looked as though cut with a saw though reputedly cut by beavers, Ken Haynes said, "There are trees along our trail cut with an axe that look as if they had been cut by a beaver." This is, of course, the woodsman's term for a low grade of axemanship. However, each worked loyally to the limit of his ability, and no more could be asked.

Lou and I found a bear den in rocks beside the trail. At evening we found recent tracks where a bear had jumped from a cottonwood log to a wet sand bar. At camp we learned that Ken, who had ridden down for news of our progress, had saved Phyl the need to decide what to do about this bear when it headed towards camp, drawn possibly by the smell of fresh meat.

Ken arrived in good time with the horses on August 4. Bob, Herman and I pushed on ahead in hope of completing the trail through to "Snowpatch Gully," an avalanche track with enough feed for an over-night stop with the horses. Lou demanded the help of the rest of the party with the horses, for we had neither time nor tools to produce a really finished trail. Jack led a horse named Jill — Ken said, "Sometimes it was Jack and Jill, and sometimes it was Jill and Jack." The horses overtook the trail gang about a hundred yards before we got into the clear.

A big outcropping boulder in the gully formed a platform for unloading the horses. The outlook was worthy of a climbers' camp, and the summits visible across the hidden Homathko River ranged to over 10,000 feet. They were mostly reddish stratified rocks above with grey granite below. At the foot of the gully the vegetation over a wide area showed grey with the muddy spray of the biggest waterfall on Reliance Creek. Above this the creek flings itself headlong through several box canyons.

The tired horses made no move to eat or drink until driven to the pool where Bob and Herman dammed the small flow from the snow. Then Lou and Ken used much patience to persuade

the horses to climb, with rocks flying behind them, to a steep patch of grass above the snow.

We picked quarters for the night at widely scattered levels. Ian trudged down to a basement suite where one understood the rental did not exceed what a poor (and honest) mountaineer could pay. Just off the kitchen the Haynes brothers occupied a sleeping porch (minus roof), while my wife and I embarrassed a whistler by locating on the other side of the fireplace. Jack found an upper storey, evidently disused for some time as he was noted using a fir branch to sweep away various angular fragments—a lapse from hardihood not serious in itself perhaps, unless one recalls that in the Coast Range the accepted test of toughness is a preference for sleeping on devil's club. Bob and Herman, doubtless displaying true mountaineering spirit, disappeared upward presumably to the roof garden.

Snow whitened mountains across the river during the night but we got only a brief spatter of rain. For a change, this day our trail-making led through unburned mature forest. For the sake of the horses we must get through to fresh pasture. We had seen promising slopes above the last timber in front of the glacier, but when the advance party got there the slopes lacked water as well as anything a horse devours. We finally found two little swampy benches beside the creek at about 5,000 feet, and camped late beside one.

Mt. Reliance looked down on us through storm-beaten firs. A great rock ridge thrust up at the left while a long-ice cliff crowned the right. A slender rock tower topped all. Not so many years ago three glaciers met less than half a mile from our camp. The eastern glacier of the three led to an 8,000-foot snow pass.

Bob and Herman climbed a 9,000-foot summit above this handsome glacier in curdled-looking weather. Snow squalls hampered the mapping Bob planned. The peak is the lowest in the Reliance group.

They came back fired with the desire to climb Mt. Queen Bess (10,700 feet), the highest and only named summit in the grand range east of Mantle Glacier. (See "Mt. Queen Bess," by W. A. Don Munday, *C.A.J.,* 1942.)

They coerced Ian into joining them in starting during the afternoon of the 7th for a bivouac beyond the pass. The grand evening turned to whirling snow squalls which drifted in under the fly they had taken in preference to a tent. They started in poor weather across Mantle Glacier and climbed the mountain in the midst of the snowfield.

Herman's quenchless enthusiasm deserved some support for an ascent of Mt. Reliance on Aug. 9, but weather glowered. Later in the day he headed up the rocky outer spur of Mt. Endeavor east of camp.

Phyl, Ian, Jack and I were joined by Lou in an exploratory tramp up the valley. For a time sunshine glorified our world and even the toppling clouds were domes of splendor. By way of a high goat trail beneath the eastern cliffs we reached the eastern glacier and crossed a moraine to Reliance Glacier. After about an hour's tramp we roped at snow-line, about 6,500 feet, in the midst of much "red snow."

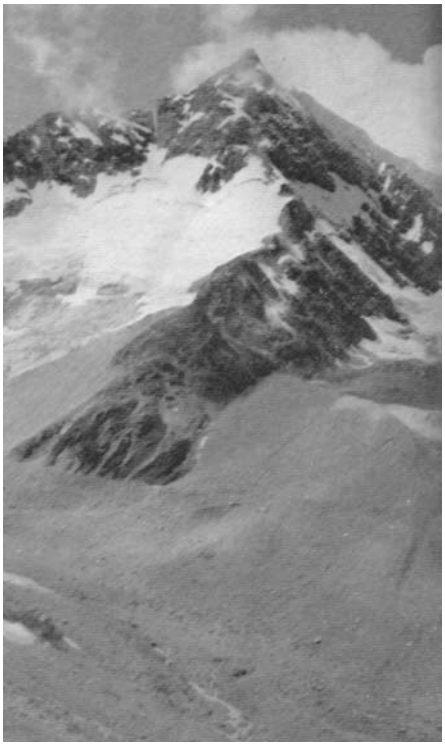
Here the trunk glacier began to divide into icefalls leading up between bold peaks. Weather looked resentful as we turned west into the wild alcove under the south face of Mt. Reliance. On the other side soared the challenging ridge, alternately steep rock and sickle-keen snow, of a peak further distinguished by a bulging little glacier dubiously hung halfway up its northwesterly wall.

Repellent clouds just cleared the 8,000-foot col between Mounts Reliance and Determination.

"What the heck is he going up there for? He knows as well as I do there's only more cloud

L. To R. "Mt. Essex" And Mt. Queen Bess. *Photo I. B. Kay.*

Homathko Peak From The Air.



Mt. Reliance From The East.
Photo Mrs. Munday.

on the other side?" One member of the party later confessed he growled this over and over under his breath. But the col would give a good view of the country around the forks of the Homathko. That would delight Lou who had never been downriver that far, and also Phyl who had not flown over it yet.

This branch of Reliance Glacier was longer than it looked. Over the crest of the pass I suddenly saw the unmistakable supreme tip of Mt. Waddington, grey-blue and ethereal against the western sky's subdued brightness. I shouted and freed myself of the rope. As I ran forward to open out the full prospect I heard Phyl behind me uttering ecstatic "Oh's!" of which only I could understand the full meaning.

From Mt. Whitemantle to the rim of Scimitar valley the snowy heart of the Coast Range spread partly in sunshine, partly thrust through sun-smitten expanses of billowing cloud, but Waddington stood wholly clear. It was as though the great mountain had put aside for a brief interval the hard reality of its ice and rock to become a transfigured symbol of all that mountains mean.

We returned down the left margin of the glacier. This short-cut took us below a splattering waterfall and a not very active ice wall though it evidently now and then spewed ugly boulders from its ground moraine. Lou displayed real aptitude as a climber during this trip.

Weather aggrieved us so much on August 10 that we planned to break camp on the morrow. But by the time breakfast was over on the llth a north wind seemed to assure a good day. We decided to try Homathko Peak which may be little short of 10,000 feet.

Starting late, we mounted 1,300 feet of rockslide and moraine to the lip of the hanging valley nearly above camp. It cradles a small glacier dying of starvation, but with its life prolonged by being about half blanketed with moraine. Walls of the wild recess displayed everywhere its ledges down-slanted for our emphatic dislike.

Accumulated recent snow dissuaded us from using a diagonal snow band, and it would have led to the pinnacled ridge far south of the twin main summits.

Nothing else offered but a gully down which a big rock came splintering in a meaningful manner. We found its bed to be ice overlain with too much new snow. Snow flakes began sifting down, and the wet rock walls insisted on shouldering us back on to the ice. It narrowed to a frozen waterfall where I had to cut out each step enough to give clearance for the knee. I got high enough to sight another waterfall above. No practicable traverse out of the gully offered.

Weather did not justify a night on the mountain, and one of the party had not recovered completely from a severe gastric upheaval (which callous persons blamed on his obligatory sampling of a bannock of his own making — one observer asserted it had taken two hours and twenty-five minutes to cook, if it was really cooked.) We had to start homeward next morning. So we turned back at 8,800 feet. More snow fell that night.

In leaving camp it was interesting to me to see a passable horse trail to Snowpatch Gully, for I had known it as little more than the blazed line I left behind me on the way up.

The river ford still demanded some respect. Jack started ahead of us but was not at Island Camp when we got there. He eased our anxiety by arriving soon with a story of photographing two deer at close range, and sighting a bull moose near camp.

This camp had developed a plague of wasps also. A climber, greatly unlearned in the ways of squirrels, chased one up a tall tree and seemed to believe it would wait there while he cut the tree down. Then, swaying gently from an upper branch we detected the biggest wasp nest some of us had ever seen.

On our way to Tatlayoko Lake on August 13 some of the foot-travellers seemed unconcerned about keeping contact with each other and with the horses. More than one trail often offered. After one halt to check noses it was decided to send back two riders and a spare horse for the missing man. He had wisely taken up a commanding position on an open hillside where he sat down and read a book until the search party arrived.

We hoped Andy would bring the plane ahead of schedule because the brilliance of the afternoon dimmed somewhat. During the wait the unmarried climbers paid with compound interest for having let their beards grow gleefully for a fortnight.

We welcomed the plane with a whoop, boarded it with elation, but looked glum when Andy failed to lift it off the lake at the first run. Somebody might have to be left behind. Andy taxied up the lake almost to the narrows where he found stronger wind. This time we made it.

We prized this last chance to see from the air, in truer perspective than when looking up from their bases, the splendid peaks we had not climbed, but at least had made accessible for climbing. In proof of this, a dark line through the slide-alders in Snowpatch Gully now marked our trail as we flew along the grandest corridor through the Coast Range.

When the great array of peaks had been left behind it was suggested to one climber that he had now mapped out his climbing career for the rest of his life. ‘’Me? I’ve got it planned for my grandchildren!” he exclaimed.

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THAT TERRIBLE SNOW-PEAKED RANGE

BY W. A. DON MUNDAY

Alfred C. Perry, who was generally referred to as "the mountaineer," is best remembered as being the assistant of Walter Moberly during his historic exploration up Illecillewaet River in 1865. Moberly in later life asserted more than once that Albert Perry, as he miscalled him, discovered Rogers Pass in 1866 while working under Moberly's direction. (Howard Palmer stressed this claim in *Climbing and Exploration in the Selkirks,* and so did Moberly's biographer, Noel Robinson, in *Blazing the Trail Through the Rockies*.)

An account of Perry's early travel in the West was given by Milton and Cheadle in *The North-West Passage by Land,* p. 188.

"Mr. Pambrun told us he had found gold in a small stream near Jasper House, having been confirmed in his discovery by Perry, the miner, a celebrated character in the western gold regions, the story of whose adventurous life he related to us.

"Perry was a 'down-east' Yankee, and at the time of the gold fever in California, crossed the plains and Rocky Mountains alone. His means being too limited to enable him to purchase horses, he put all his effects in a wheelbarrow, which he trundled before him over 2,000 miles to Sacramento.

"Tiring of California, he returned to the Eastern States, but on the discovery of gold on the Fraser River, resolved to try a miner's life once more. His sole property on reaching Breckenridge, on the Red River, consisted of a gun, a little ammunition, and the clothes he wore. He borrowed an axe, hewed a rough canoe out of a log, and paddled down the river to Fort Carry, 600 miles. From thence he proceeded on foot to Carlton, 500 miles further, supporting himself by his gun. At Edmonton he joined the party of miners about to cross the mountains, and succeeded in reaching British Columbia, having travelled about the same distance he had formerly done with his wheelbarrow."

No date is given for this trip but it probably was before 1860, as the Victoria Colonist June 6, 1861, recorded!

"Mr. Alfred Perry, better known in the northern mines as 'Mountaineer,' . . . left Alexandria last fall with a party of four miners, and crossed the Rocky Mountains to the Jasper House, where he wintered. His four companions went on to Fort Edmonton where they wintered . . . Mr. P. reports that the Hudson's Bay Company were building a steamer during the winter at Fort Edmonton to navigate the Saskatchewan as far down as the Rapids. Another steamer is to be put on by the Company to run from Fort Garry, in the Red River Settlement, down Red River to Lake Winnipeg, thence across Winnipeg and up the North Saskatchewan to below the Rapids . . . Mr. Perry left Jasper House for Fort Alexandria on April 2nd, with two Indians and without provisions, but subsisted by hunting."

Perry's journey through Yellowhead Pass is then given fairly fully until he reached a place called "Kester John's." This probably was Tête Jaune Cache, as from this point Perry canoed down the Fraser to Fort George (now Prince George).

He probably first reached British Columbia before 1860, as he was a well known figure in the country. This is indicated in an item in the British Colonist, Oct. 31,1861:

"Perry, the mountaineer, came down on the California. He was employed by the Commissioner (of Lands and Works) to explore the country between Quesnelle and Green Lakes for the purpose of finding a nearer route to Cariboo . . . Perry also explored the country around the head of Thompson River and Horsefly Creek . . . Perry also informs us that he discovered a large lake between the head of Horsefly and North River (a branch of Thompson) which is not marked on the map."

This may be the earliest record of exploration in what is now officially the McLennan Range, but as all early references are to the Cariboo Range that term will be used here.

Perry was plainly a seasoned mountain traveller and a fearless hunter. Moberly tells of meeting a grizzly when in company with Perry — Moberly usually carried only his pistol. Perry coolly let the bear approach within a few feet. He then whistled, relying on the bear rearing up to permit a shot in the heart. This was the recognized method before the repeating rifle was made, and makes the modern grizzly hunter sound not such a bold fellow after all.

Moberly said he warned Perry that he was likely to be killed by Indians, and, Perry was murdered in 1869, supposedly by an Indian.

In the absence of more details, Perry's connection with the Cariboo Range is shadowy. But a definite record of early exploration in the heart of the range occurs at the very end of most editions of *The North-West Passage by Land,* in the form of a letter from J. W. McKay, then in charge of the Hudson's Bay Company post at Kamloops.

The letter is quoted in full below for the reason that the only mountaineer who has previously quoted from this letter, quoted only the words I have italicized. Taken by themselves it will be seen that the italicized words have the curious effect of obscuring pretty thoroughly the fact of McKay's personal exploration.

McKay wrote to Milton and Cheadle:

"I have been most of this season exploring for a telegraph line between Tête Jaune Cache and William's Creek — a most difficult country to travel through. *You may congratulate yourselves on deciding to descend the North River [North Thompson] instead of forcing your way to Cariboo direct. You would not have been able to get your horses through.* There are three very high ranges to cross between the Cache and William's Creek — *intensely rugged — in fact indescribably rugged;* and the rocks are in many places so highly impregnated with iron that the compass becomes unreliable. *The weather is horrible — constant rain, snow, and mists*, *and very little sunshine;* so that even when approaching the diggings we felt at a loss where to look for them. I am indeed glad to have finished my work safely. I lost one man, who died from mountain fever, poor fellow! twenty-four hours before reaching Fort George."

That is still a somewhat vague description, but fortunately newspapers of the day permit us to identify much of McKay's course through the range. Quotations are from the British Colonist, July 18, 1865, and the Cariboo Sentinel, June 12, 1865:

"Mr. J. W. McKay, who has just returned from exploring the line of country lying between Williams Creek and Tête Jaune Cache for the best route for the Hudson's Bay Company's new telegraph line through the Rocky Mountains, has kindly favored us with the following interesting narrative of his proceedings." [It seems to have been customary in those days to "proceed" instead of "go" to places.]

"Mr. McKay left Kamloops on the 6th of April last, and proceeded up the north river of the Thompson to the head of its eastern tributary [Albreda] a distance of about 180 miles. The party, consisting of Mr. McKay, a Scotch-Canadian named John Nichol, a half-breed named Baptise Salahoney, and a Shuswap Indian . . . reached the Fraser River at Tête Jaune Cache . . . the party took a direction nearly due west, crossed one range of mountains through a good pass" — evidently by way of Kiwa Creek — " and reached a stream known as the River of the Shuswaps [now Raush River, a barbarism manufactured from Riviere au Shuswaps to avoid confusion with Shuswap River further south] which flows into the Fraser about eighty miles below Tête Jaune Cache." [Any proofreader will conclude the erroneous "eighty" resulted from misreading of the numerals "30" in longhand.]

"On the west side of this stream runs a very high range of mountains. After following up several streams the explorers finally succeeded in finding two passes. [The "four-way" pass which uniquely affords relatively easy connection between Raush, Hobson, Azure and North Thompson rivers. These are the only known routes below timberline in the whole length of the Cariboo Range."]

"The northern pass leads into Bear River valley and the southern one into Swamp River valley. The mountains consist mostly of micaceous slate formations traversed by powerful veins of quartz abounding in metallic sulphurets. Cariboo, bear and mountain marmot are here seen in abundance. Mountain goat are also plentiful in certain localities.

"This mountain range presents a series of high, triangular snow peaks. Between the peaks are immense glaciers. The mountainsides are steep, and avalanches, particularly on the eastern side, are frequent and dangerous. Instances were observed where forest trees over two feet in diameter had been carried away across the valley below, and one hundred feet up the mountainside opposite. It is this range of mountains that can be seen from Bald Mountain, and is probably mistaken by miners for the Rocky Mountains.

"The weather here was most unfavorable. Continual showers of rain and snow fell. The gunpowder became damp and nearly useless, and the Shuswap Indian took fright and deserted.

"John Nichol felt premonitory symptoms of mountain fever [typhoid]. Provisions were nearly expended and Mr. MacKay therefore decided upon returning to the Fraser and descending by canoe to Fort George for fresh supplies. They reached the Fraser a few miles below Tête Jaune Cache [their point of arrival being the mouth of Kiwa Creek].

"Finding no trees available for making a canoe, they made a raft, dropped down the Fraser about six miles, found a large poplar tree [cottonwood], felled it, and Mr. McKay and Baptise made a canoe with two small axes in two days, Nichol being too ill to work.

"From this point they reached Fort George in five days, a distance by water of about 350 miles. John Nichol died the night before the party reached the Fort. The body was taken to Fort George and decently buried the funeral service being read over the corpse. Nichol was a good, steady, respectable backwoodsman supposed to come from the neighbourhood of Windsor, Upper Canada."

McKay's story was "To be continued," but the Victoria Colonist not uncommonly failed to print another installment. But another news item mentions that he had left Williams Creek after completing his exploration for the proposed telegraph line.

Walter Moberly, chief figure in organizing the Canadian Pacific Railway survey parties in 1871, naturally knew of this exploration by McKay, whom he described as his "good friend."

The importance of a route through the Cariboo Range was stressed for several years, Sandford Fleming, engineer-in-chief, doubtless being greatly influenced by the plans Alfred Waddington had sold to the Canadian Government just before his own death.

Waddington's earliest plan was to connect the Pacific and the Great Lakes by a wagon road linking river and lake routes of travel. Bute Inlet and Yellowhead Pass were key points in his plan. Later he urged a railway. J. Murray Gibbon, in Steel of Empire, states Waddington at one time had American capitalists interested in his plan.

Late in July, 1871, a large survey party left Victoria under James A. Mahood to look for a route through the Cariboo Range. They meant to make Tête Jaune Cache their base.

"The difficulty of getting boats, and the loss of time that must in consequence have occurred at Quesnel Mouth, together with the favourable report of Messrs. Black and Fenton, and other information gathered at Cariboo, caused the abandonment of the route by the Fraser River and the adoption of the exploration via Richfield and Tête Jaune Cache.

"The party — twenty-two men, staff included, left Barkerville on the 23rd August, taking along to carry supplies, a pack train of thirty-two animals; in addition to which Messrs. Burns and Black were engaged for the same purpose, these parties possessing the only pack train in that section of the country."

They started from Richfield by way of Isaac Lake at the headwaters of Swamp River, went down this stream for a short distance and then up the eastern fork into the mountains. Mahood worked under Roderick McLennan, and the published report appeared under McLennan's name:

"From Bear Lake to Dominion Pass the difficulties of trail making were very great. The greater part of the distance was through a dense forest. In most places the trail had to be corduroyed. In other places the passage for the animals had to be made by pick and shovel on the rocky hillsides. Mountain torrents and ravines had to be spanned by bridges."

"Pushing along despite the innumerable difficulties that beset the way, the party reached the hoped-for pass, which, high and glacier-capped, towered up in front of them as if to crush out hope and defy further progress. For the animals a passage over it had to be cut with picks and axes, and on the 29th of September the party emerged from Dominion Pass.

"At this point the packers became afraid of being cut off by the snow, and threatened to desert the stores and return to the Cariboo. Fortunately they were persuaded to remain, otherwise the effort to reach the valley of the Fraser River must have been abandoned.

"The progress of the party was now much impeded by snow storms which were almost continuous from the 5th to the 10th of October. The Fraser River was eventually reached on the 20th of November, and the party encamped for the winter." [Near Eddy on the Prince Rupert line of the Canadian National Railways.]

Possibly this was the first record of the crossing of a glacial pass in the Canadian mountains.

"In going from the forks of the Swamp River over the Pass into the head waters of Castle River, a rise and fall of two thousand three hundred feet has to be overcome in a distance of twelve miles."

It is well worth adding to the history of Canadian mountains that after making the best possible disposition of the supplies, Mahood started on December 4 for Barkerville which was a distant one hundred miles and recrossed Dominion Pass, taking twelve days for the journey. The Canadian Pacific Railway Reports do not tell when Mahood rejoined his party for the 1872 surveys along the eastern flank of the Cariboo Range.

Mahood varied McKay's route by following up the Raush River from the Fraser, and he went part-way down the Azure. F. W. Green, with headquarters at Cranberry Lake was responsible for examining the southern section of the range. Moberly went up Canoe River far enough to conclude — rightly — that it ended in high glacial passes. Moberly also went up the North Thompson twenty-three miles, being turned back by an October snowstorm. Even Moberly would not knowingly face the certainty of being caught in such heavy bush in such impossible travelling conditions. In 1874, E. W. Jarvis crossed from the Clearwater to the North Thompson by way of "an immense glacier seven thousand feet above sea level. This was southward of the "four-way pass."

The railway surveyors found the "four-way pass" useless to them for four reasons: It was over 6,000 feet high; gradients down Azure and Hobson rivers greatly exceeded the maximum set by Fleming; they could get into the Clearwater drainage to the west of the Cariboo Range by a 3,800-foot pass by way of Albreda Pass, North Thompson and Blue River; and lastly because no suitable line was found westward out of the Clearwater.

Sandford Fleming clung to the Yellowhead Pass-Bute Inlet route as long as possible. It was the only route if it seemed essential to carry the railway terminus to Vancouver Island as had been urged. But construction along Bute Inlet meant costs far beyond anything railway engineers had ever faced, and Bute Inlet was condemned by naval experts as a harbour. Fleming finally had to recommend the route now used by the Canadian National Railways to Vancouver. It is a matter of history of course that the Canadian Pacific Railway finally chose Kicking Horse and Rogers passes.

But the Canadian Pacific Railway surveyors explored the Cariboo Range so thoroughly that Sir Sandford Fleming in 1882 was able to declare to a Royal Commission that his engineers had examined every possible pass in "that terrible snow-peaked range seen stretching away from Tête Jaune Cache, so graphically described in Milton and Cheadle's *North-West Passage by Land.*"

More than forty years behind the railway surveyors came the mountaineers to re-explore valleys known of a certainty to their predecessors. In the interval prospectors and trappers came and went as they saw fit — quite unaware that a famous British climber had "heard how the most adventurous prospectors have been turned back." One hopes he did not fully believe this statement, for the Cariboo Range has its woman trapper and prospector, and has had its woman mountaineer, too.

And now, seventy odd years since the railway surveyors forsook the Cariboo Range, a mere handful of its peaks have been climbed, and the whole northern half of the range is not known to have been penetrated by the climber.

THE FIRST ASCENT OF MT. OPPY

BY DON M. WOODS

Previous to July, 1947, Mt. Oppy, 10,940 feet in elevation, situated between Lyell Peak No. 3 and Mt. Alexandra, was the highest unclimbed peak in the Canadian Rockies. In 1937 Sterling Hendricks and Rex Gibson had hoped to climb it but they got no farther than the first ascent of Farbus, the first peak on the ridge between Lyell and Alexandra. Oppy is the next peak to the north. In 1946 John Oberlin and Fred Ayres made a second attempt but stormy weather on the Alexandra Glacier below Farbus defeated them.

After two weeks in the Selkirks with our own camp near the A.C.C. camp, four of us picked up John Oberlin from the westbound train at Lake Louise station and drove northward to Graveyard, at the junction of the Alexandra and North Saskatchewan Rivers. Permission was obtained from Park Warden Bill Black to camp at Graveyard, which is not an established camp. For two nights and a day it rained, so we moved to the shelter camp two miles north of the Saskatchewan Bungalow Camp. Two more days of rain kept us from our proposed trip. Dave Pearson had been feeling ill for several days. Fred Ayres was eating pitted dates, but bit into one that was not pitted, breaking a tooth and exposing a jagged edge of filling. He had to drive 88 miles to Banff for a temporary filling and took Dave along with him to see a doctor.

And so three of us, on July 31, left my Dodge at Graveyard and crossed the seventeen channels of the North Saskatchewan River with fifty-five-pound packs, planning to be gone seven days. My companions were John Oberlin and Ron Davis. The icy water all but froze tender feet, but a stop on the opposite bank soon restored circulation. From here we sometimes followed the up and down horse trail through the forest, and sometimes the gravel flats of the Alexandra River. Many times we were forced to cross a channel of the river. We found we could make it provided the water was no higher than our upper thighs when the ice-axe was essential to keeping one's balance.

We traveled around to the north of Mt. Amery, past unclimbed Mts. Willerval, Monchy, and Hooge. The steep falls of Ridges Creek were fascinating. Lunch was eaten on a gravel bar from which point we had fine views up the valley toward the peaks of Oppy and Alexandra. The river was crossed many times during the afternoon, and after eleven hours of arduous labor we reached Castleguard River at 7 p.m. As the river was too high to even attempt crossing, we made our camp on the east bank. A rather sporadic attempt to find the bridge erected by Hendricks and Gibson over the Castleguard canyon ten years previously ended in failure.

Next morning the waters of the Castleguard had gone down about a foot. Immediately after breakfast Ron, stripped below the waist, started across with his pack and ice-axe. He crossed a narrow but deep channel to a partially submerged gravel bar, followed this bar downstream for about a hundred feet, and crossed a second narrow but deep channel. He built a fire for warmth, while John and I finished packing and followed him. We then shouldered our packs and soon passed the camp of the party last year. Here we made a food cache high above any marauding bears or other denizens of the forest. We now made our way through the dense forest to the foot-bridge built across the Alexandra box canyon by Hendricks and Gibson in 1937. The logs of this bridge slope downward at an exaggerated angle, with one handrail log at a different angle. With fifty-pound packs and a churning, milky stream in the canyon below, the crossing was spectacular to say the least. John went over first to take movies of the two of us crossing. I went second to take kodachromes of Ron.

Once across the river it was an easy walk to the moraine below the East Alexandra Glacier. A lunch stop was made beside a clear stream. At the snout of the glacier we donned our crampons and ascended the steep lower icefall. John chose an excellent route and we were soon sloshing through the very wet snow of the basin above the icefall. We continued to a prominent ridge of snow below the exceedingly steep upper icefall, and set up our nylon U.S. Army infantry tent. The tiny primus was soon going and supper was consumed. We slept well on our two and one-fourth air mattresses, but an early morning rain ruined climbing chances. (To save weight, John had brought an air mattress that was about three feet by one and one half feet. It weighed only a pound or so, but with tall John it was of little use, particularly since it did not hold air anyway.)

With clearing skies after lunch, we ascended the upper icefall for an hour and a half and scouted a good route through the deep crevasses. The second night on the glacier was clear and an early start was made next morning for our objective peak. We followed the route of the day before and in a little over two hours were in the Farbus-Lyell No. 3 col. A marvelous view of the peaks to the west greeted us, especially that of Bush Mtn, We joked with each other about this day being our golden "Oppy"-tunity, and the hope that we would meet with little "Oppy"-sition. We pushed on to the summit of Farbus, a second ascent of the 10,550-foot peak, and continued around and down the north ridge toward the Farbus-Oppy col. Descending extremely steep snow slopes above the col we crossed to the quartzite cliffs of Oppy. After ascending two easy benches, John led up the rocks of a steep snowy couloir. A little over half way up this couloir he was balked by a holdless pitch, and after dropping down a short distance we discovered an outward sloping edge wet from melting snow water.

We worked our way around an exposed corner above this wet ledge, and then found to our relief several rope-lengths of easy rock climbing. Our route then led us back to the couloir near its head and immediately under the tremendous overhanging ice cornice of the summit ridge. With a good belay from above, John led downward into the ice of the couloir, cut two steps in the glare ice, and quickly stepped across. It was necessary for him to continue some distance beyond the ice to find a suitable anchoring place. Then as I came across, I found it necessary to cut another step as I couldn't quite reach the two that had been used by six-foot-three John. Then with another belay Ron was across. This was the most difficult pitch of our climb. John now continued up the snow and ice-coated rocks to the cornice. After chopping a huge notch in the ice, he anchored his axe deeply at the top of the notch and pulled himself upward to surmount the five-foot ice wall of the cornice. We followed and had an unobstructed view along the ice-coated ridge to the summit. For a half hour we walked through soft snow a short distance below the cornice edge, and as we reached the highest point on the long corniced ridge, one of us at a time, while anchored from below, went as near the cornice edge as was deemed safe. There was a tremendous drop over the eastern cliff from the ridge to the Alexandra Glacier below and to our tiny tent. It was 3:10 and we had been 9 hours and 20 minutes away from this tent.

Because of a threatened storm we immediately began the descent. We retraced our upward steps, exercising much care at the icy couloir crossing. Before long we were crossing the Oppy-Farbus col, and soon began the ascent of the very steep snow slopes of the north ridge of Farbus. During the entire time we were on this ridge the weather was stormy, with alternating rain, hail, snow, and sleet. When we reached the summit of Farbus for the second time this day, the storm had stopped and we hurried down to the Farbus-Lyell No. 3 col. Here we found little shelter from the chilly wind and ate a bite of food. We had been going almost without rest for many hours, but we were now near our camp. By 9:30 we arrived in camp wet and cold. Some hot food and warm

Mt. Oppy From Mt. Farbus, Mt. Alexandra On Left.
Photo J. C. Oberlin.

Mt. Oppy And Alexandra Glacier.
Photo J. C. Oberlin.

Roncisco Davis On The Oppy Cliff.
Photo J. C. Oberlin.

sleeping bags dispelled gloom and we were happy with our day, hoping for a climb of Lyell No. 3 next day.

Rain during the night, with much thunder and lightning, ruined our chances of any climbing next morning. We decided to pack up at noon and descend to the Castleguard River. Here we had a fine campsite on the west bank of the river. We found our food cache intact and had a good supper.

The night was very cold and next morning the tent and nylon fly were covered with a thick layer of frost. After breakfast we decided that we would cross the Alexandra rather than the Castleguard, as it is much narrower and, no deeper. We then followed the south bank of the Alexandra for several miles using game trails through the forest. We made our first crossing and again followed the gravel bars. We ate lunch opposite Ridges Creek and once again began the interminable Alexandra River crossings. The last several miles were along the edge of the river following a slippery and muddy horse trail that on our trip in had been covered with water from recent rains. We came to the Saskatchewan and picked up our can of life-raft rations which we had cached on the west bank of the river. Then came the crossing of the seventeen channels of the Saskatchewan, and after a short distance on the road we were again at the car at Graveyard.

We had completed a first ascent of Oppy, a second and third ascent of Farbus, a first and second traverse of Farbus, as well as a first ascent of Farbus from the north, from the Farbus-Oppy col.

We were well pleased with our accomplishment but regretted sincerely the fact that Fred Ayres had been forced out of our successful party. He had done a lot of scouting the year before with John and certainly deserved to be in on the first ascent. Through an unfortunate accident he had lost his “Oppy”-tunity.

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FIRST ASCENT OF THE SOUTH PEAK OF MT. HOZOMEEN

BY ROBERT L. MUJLHALL

Mt. Hozomeen at last has fallen from the ever-thinning ranks of the unclimbed. Its south peak, although not the highest unclimbed peak in the Cascades, was with little question the most outstanding challenge. The procession of aspirants attempting to scale this peak without success was seemingly endless. Weather, inaccessibility, time, and the battlements of the mountain itself combined to disappoint many. It was only fitting that the veteran climber, Fred Beckey, was destined to lead the way to the summit. No one makes more thorough preparations for the assault of an unclimbed peak. Nearly seven years ago, after the successful ascents of Glacier Peak, Twin Spires, and Bear Mountain, Fred resolved to scale the south peak of Hozomeen. However, the plan had to be postponed several times.

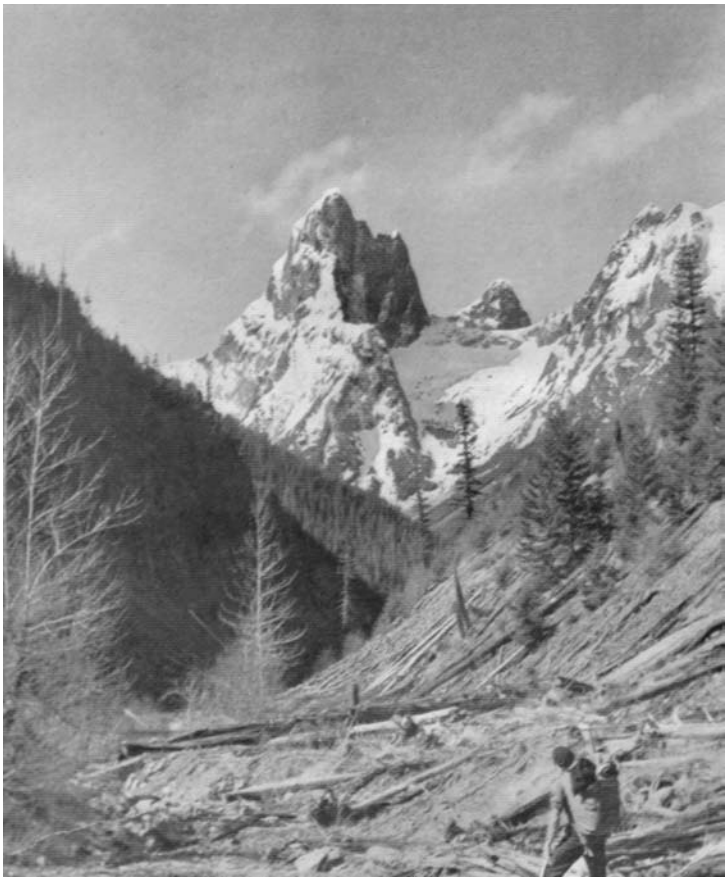
Mt. Hozomeen towers 6,000 sheer feet from the Skagit valley floor. The approach to this peak, which lies one mile south of the British Columbia border, is long and arduous. Mt. Hozomeen is actually two very distinct peaks, the 8,080-foot north peak and 8,020-foot south peak being one mile apart. To avoid confusion they should be known by different names. The north peak is easily climbed via the north ridge, a route used by a survey party. The geological report of *Memoir No. 38, Geology of the N.A. Cordillera at the 491 h Parallel, Ottawa,* describes the south peak as "inaccessible." There is a record of a Canadian climbing party travelling to its base from upper Lightning Creek. [1]

October of 1945 found Wayne Swift and Fred Beckey investigating approaches from the Hope-Princeton, B.C. road. The natives of the area advised the party that the wagon road to the interior was all but impassable. Needless to say, they spent many uncomfortable hours being jostled around on the rough road in a vain search for a trail to the boundary line. Eventually a trail beginning near an abandoned construction camp was selected as possible. Many miles of valley pounding and ridge running ensued. Finally the two climbers were rewarded with a breathtaking view of both Hozomeen peaks. At this point they discovered the trail had taken them too far north and as the weather threatened rain, the disappointed two reluctantly trudged back to their car.

Early summer of 1946 found Beckey, with Mel Marcus and Herb Staley approaching the peak from Diablo Dam. While riding the shuttle train from Newhalem, Wash. to the dam, a trainman prophesied the failure of the attempt. Ironically enough, he was right. The trio walked 22 miles from Ross Dam via the Skagit River and Lightning Creek to Willow Lake. Despite threatening weather they worked their way to 6,500 feet through dense undergrowth and over rough terrain. They had managed to struggle up a steep rock buttress to an elevation of 7,500 feet when a fierce rainstorm drove them back. As if in taunting defiance, the south peak revealed herself for an instant, adding insult to injury. A very unhappy and discouraged group came out after this attempt on haughty Hozomeen. Later in 1946 the Silver-Skagit logging road from Hope, B.C. to the north shore of Ross Lake was completed.

On Memorial day, 1947, Fred Beckey, Herb Staley, Duke Watson, "K" Molenaar, Jack Schwabland, and Chuck Welsh made another attempt on Hozomeen. They drove up the new logging road and hiked three miles to Hozomeen Lake (2,800 feet). Again rain prevented the party from climbing above timberline. It was just another of the many disheartening and unsuccessful attempts on Hozomeen.

1 *Canadian Alpine Journal.* 1944-5 Vol. XXIX-1, p. 160.



Mt. Hozomeen. *Photo W. H. Mathews.*

After Hozomeen Ascent. *Photo W. H. Mathews.*

L. To R.: Prestrud, O'Neil, Staley, Marcus, Beckey.

Finally, on June 14, 1947, Beckey organized the successful party. This strong sextet was composed of Chuck Welsh, Herb Staley, Mel Marcus, Jerry O'Neil, Ken Prestrud, and Beckey. The approach was via Hozomeen Lake again, but this time at night. The climbers camped at the lake, leaving at 6:00 a.m. on the 15th. Clear skies smiled on them as they ascended the long rocky gully on the west side of the mountain. At 5,000 feet the gully was choked with snow and it was necessary to kick steps to an elevation of 6,200 feet. Much care was exercised in ascending this snowfield on account of its steepness. A short rock climb completed the ascent to the 6,500-foot saddle.

After a rest and a light snack the climbers changed to tennis shoes for the final ascent. The sun was now pouring down on the party, as if to atone for previous negligence. The magnificent Skagit peaks were plainly visible. The plan was to continue up the high buttress reached on the aforementioned attempt. An extremely exposed rock face of about 200 feet proved difficult. Then the party moved without incident to the 7,500-foot tip. North of them loomed the incredibly steep face of the final peak. Their spirits dropped as they scanned the vertical, decayed face for a route. The connecting ridge of pinnacles seemed impossible. There was an east promontory leading gradually to the summit, but to approach it looked too difficult. With the hope that a closer inspection might reveal a possible route up this barricade, they began an attack on the ridge of pinnacles. Three on a rope, they descended 200 feet on the northeast side of the buttress tip to discover the overhanging wall of the first pinnacle impossible. In compensation a traverse around the pinnacle's east face was discovered. From a snow patch the route led up a steep pitch, from which a series of ledges appeared possible to the notch between the last pinnacle and the final summit face. With a great deal more enthusiasm the climbers quickly worked along the very exposed ledges. The notch was reached and the climbers gazed over the west edge. Above a west branch of Lightning Creek they dropped a rock and estimated it had a 2,000-foot "free fall." Looking ahead they could see that the steep, rotten face was composed of a series of short overhangs and high angle slabs which appeared climbable. The promontory face to the right looked too hostile. Beckey, Prestrud, and Marcus slowly worked up a series of ledges and inched up tiny cracks on the east side of the face. The second rope, with Welsh, Staley, and O'Neil, followed in that order. The climbing became increasingly difficult and the exposure greater. Constant belaying slowed progress. A white overhang blocked the route, but Beckey found a vertical pitch on the right side of it which he could negotiate. Then a treacherous slab was ascended to the arête again. Soon an overhang extended across their path. Prestrud anchored himself for a secure belay; then Beckey and Marcus alternately attempted the pitch with the use of pitons. The few handholds were rotten, and the upper part of the overhang was devoid of holds. As pitons could not be placed, they returned to the ledge. Valuable time was lost with the unsuccessful manoeuvering. Finally Beckey anchored himself to a sound piton ten feet above the ledge, holding on to meager holds with his left hand and given a tension belay by Prestrud. Marcus threaded his rope by a carabiner through a "moral support" piton two feet above the first. Marcus, aided by a few holds, stood on Beckey's shoulder and then his head. Since there were no good holds or piton cracks in reach of his searching fingers, Beckey managed to let Marcus stand in his hand and from there he wriggled over the remaining feet to a ledge. He then affixed a rappel rope to speed the others up. The next stretch was a slanting crack climb. Constantly belaying, the party managed this and the remaining arête difficulties. At 3:30 p.m. they scrambled joyfully to the summit.

After building a large cairn they admired the Cascade Pass peaks, the spectacular Picket Range, Mt. Baker, the Chilliwack peaks and others. The echo of lumbering operations in the Skagit

Valley could be heard on the summit. They tried to visualize how the valley would appear after the dam backed water across the border. Glances down other faces of the peak showed they had chosen the correct route. Thickening clouds showered a light snow as the party began the long descent. The first trio set up the rappels while the second retrieved the ropes. Spurred by threatening weather and shortening daylight they followed the difficult route back to the buttress tip. By this time a biting wind made the long rappel down the southeast face extremely miserable. In the gathering dusk they climbed and glissaded to timberline. They welcomed a chance to rest at a timber patch, but had little sleep that night. Rain kept them busy finding dry wood for their fire. Early in the morning they descended wet, brushy cliffs, and then forest to their camp. Here they slept a few hours before resuming the descent to the car, happy that this time they had reached the summit before rains stopped them. There is still however, a definite challenge to any mountaineers that feel equal to the task, for the south peak of Hozomeen is not to be taken lightly.

A FIRST VISIT TO THE ALPS

BY DOROTHY E. PILLEY RICHARDS

Unless the ban on British travel in Switzerland is lifted, there will be vacant places in the Alps, rooms unoccupied, tables unfilled and club huts uncrowded. The Swiss in the Alpine resorts feel sad about the possible forced absence of their most regular clients. When the blow fell last August, *hoteliers* of all ranks explained their reasons to me at length. These did everyone the greatest credit, but were hard enough to hear with due modesty and impossible to report. But in any case after these weary years of waiting, the time has come for those Canadian mountaineers of all degrees of ambition who have long been intending to take their first look at the Alps. Here are a few suggestions based on my last two summers in Switzerland and many summers between the wars.

There will be those who have kept up with modern Alpinism and are interested in the latest and greatest things in routes. I do not presume to advise these beyond remarking that it is truer of the Alps than even of the Selkirks that the season settles everything. Last year was utterly out of the ordinary run. Climbs were feasible which are often unattackable for years together. On the other hand stonefall was a serious hazard where usually it is negligible. Ridges commonly of snow were ice; but in many instances the ice shrank to leave a rockpath where ordinarily there would be a wall overhung by a fearsome snow cornice. Thus some routes were safe and easy which in normal seasons may take more than a little experience and toil and skill.

We all learn when we revisit a peak in different years and at different seasons how extraordinarily unreliable estimates of its "difficulty" may be. True of every mountain, this is truer still of the Alps. For one thing the glacier problems are commonly more intricate. There is a vast difference, as you can imagine, between finding a good way for oneself through a broken-up glacier slope and following in some party's steps. Last year the chief glacier routes from the main centers early became well-beaten roads. And they stayed so, thanks to the unparalleled weather. On steep snow and ice slopes the steps developed into the buckets and baby baths the early Alpinists wrote about. But in an ordinary, poor season the mountain will have to be "reopened" several times, and a guideless party without tracks to follow may well be surprised with the time its evolutions take.

The newcomer to the Alps will quickly find that programs should be flexible, particularly if you are guide-less. Don't set your heart on any particular expedition until you know what the year is like. Many on their first visit to Switzerland will wish, for example, to climb the Matterhorn. Two years ago Zermatt was full of disconsolate types standing about in its street waiting for the mountain — grizzly white from peak to base — to clear up enough for an attempt. A few very tough guides, with unusually pliable or robust clients, were forcing it between storms — doing that is a very unpleasant, freezingly cold job, possible for them thanks to their knowledge of the mountain, but having no elements of reasonable attractiveness for their tourists, as these ruefully admitted on their return. They had done it, and they had paid for it. The compensation was the guides'. Others, who were wiser, were not wise enough to change their plans, cut their weather losses and go off on their own to smaller mountains. Instead, they hung about, throwing one day after another as I did through a fortnight for the traverse of the Rothorn in 1921. It would show up between cloudy spells looking almost ethereal with the white sprinkle that, alas, powdered its rocks and when the end of climbing for that year at Zermatt came, far from being able to do the coquettish Rothorn, I could not even get over the col d'Herens to Ferpecle! So down to the Rhone valley it had to be.

Now shifting centers in the Alps has its dangers! Chief of them concerns acclimation which lags as one grows older. It is hard to remember what a few unnecessary extra hours down at the altitude of the floor of the Rhone valley can do to one's condition — hard earned by a week or two around the 6,000 to 9,000 foot Cabane levels. A quick dip down and up again does no noticeable harm. Nowadays it is usually easy to get a bus or a train which will whisk you up again to climbing levels, from Martigny, Sion or Brigue for example. But if you have been living in huts for some time without coming down lower than 6,000 feet, eating Maggi soup, cheese and crusts and such true mountain food, the temptation when you see the nice little hotel with the nice little restaurant and the bathroom and the springy beds, is strong. A good rest, a little relaxation, surely that can do a climber no sort of harm ? You think you owe yourself a reward for Spartanism. And so, before you know, there you are staying the night in the valley. It does not work. Instead of a jolly time you develop a dim sort of headache, a sense of intolerable burden and an insufferable irritability. Everything conspires against you and if there is any unpacking or packing to be done or keys to be found, you are lost. Woefully you stand amid your possessions, wondering what has come over everything and why you were such a fool as to come all this way — for what ? At these times how bright — with more than earthly brightness — will gleam your authentic memories of Lake O'Hara. Oh, to be snuggly in camp high in Eremite Valley! You are acclimating to the lowland. Next morning things will seem better — but at a price: in breathlessness and that surprising feeling in the legs when you get back again to levels at which mountaineering efforts are required.

This is worth remarking, I think, because the modem facilities through which the visitor can flit about Switzerland, the opportunities to see something of so many types of mountain scenery are one of the great attractions. What contrasts between the French, German, and Italian regions of one little country! To take a leisurely look at the villages say round Grindelwald, in the Val d'Herens, the Lotschenthal, the Engadine and the Val Bedretto and to note, for example, that the very fashions in which they handle and stack their hay are different, is to sense the essential diversity of Europe right down into its roots. And yet, with all their differences, with all the oppositions in social attitudes and customs, in what is preferred to what — tidiness say before leisure, or conversation before economy, convenience before cleanliness — these diverse peoples are all tightly knit in political unity one with another. The strains of war only unite them the more firmly. To see this in the flesh is very different from hearing of it, and to sample this diversity may be your main reason for visiting Switzerland. If so, a stay in one cosmopolitan internationalized centre will not give you what you came for. But to combine a varied tour with real climbing takes both planning and luck.

Perhaps these general remarks will be more useful if I briefly run over some of the good and bad points, the mistakes and the opportunities, of our last summer's wander in the Alps. We were two and we were guideless — except on one expedition where we anticipated much glacier trouble. What follows will be more intelligible if it is checked with a Baedeker. Success in touring freely about parts of the Alps one does not know depends largely on power to interpret Baedeker and a little practice with it beforehand is not wasted.

We slipped up right at the start by choosing (in a moment of distraction) Disentis (3,717 feet) as a first headquarters at which to dump our baggage. We did not actively realise how low in its verdant trench of a valley that little town is. It is a very interesting ancient place, the heart core of the Graubunden (the Grey League, the Grisons) whose early history exemplifies the uniting principles which later made Switzerland. Though Disentis, is a junction point of several regions, it is too low for Alpinists. After a spell of climbing up above you cannot fully enjoy your return to these levels. Your hands are clumsy, your feet are lead and your spirits are *basso profundo!*

We were happy in our choice of a set of training climbs. We went in the bus up to Santa Maria at the Lukmanier Pass, 7,000 feet. This in an old style wayside inn standing all alone amid spreading cow pastures. The herdsmen come in to eat and the food is good. We coincided with a dramatic moment of the *alpage* year: the measuring of the milk. Every cow is milked by its owner and the yield settles the proportion of the total return for the summer each owner receives. They were all up there, men and women, rising at dawn for the milking.

One's first Alpine Hut, of a life time or of a season, is an important matter. We were lucky again. The Cadlimo Hut (2,573 metres) is four hours up from Santa Maria (1,842 metres) perched above a covey of lakelets of all colours. Good bathing, though cold of course. Behind it is a string of rock peaklets which offer perfect mild training scrambles. They are easy and quickly reached and I will spare you their names. If you want more exercise you can just take in another mile or so of the ridge. If you go over as far as Rondadura (3,015 metres), a peak as pretty as its name, you'll probably have had as much as you need. You see the giants of the Valais from an unusual angle. The Weisshorn, as so often, steals that show. Under your feet the bays of the crags are carpeted with gentians, alpine forget-me-nots and cushioned with moss campion. Really suitable training-climb grounds!

If you are more ambitious you will find, from Santa Maria, several beautifully solid unclimbed ridges on the Vallatscha — Piz Miez massif behind the inn. The great winding north ridge was first climbed by Marcel Kurtz alone, and five minutes later by a party of two, says the entry in the S.A.C. Climbing Guide. One wonders what was happening. We climbed Piz Miez by a new line up varied and dramatic and superbly solid rock; and came down over Mt. Scopi, which, as its name might suggest, was a soldier's look-out during the war and so has downhill paths all over it. Hereabouts you now have the entire mountain to yourself.

The next range to the east looked attractive, so we went via Curaglia, a pretty little village, to the Medelserhutte, (2,540 metres) a model cabane and thence made the Fil Liung, Medel, Camadra and Uffiern circuit — miles of lovely, lofty, varied ridge wandering. Then we dipped down to Disentis, lingered a day and learned our lesson.

We took free breaths again on the way up to the Punteglias Hutte (2,340 metres) hoping for the Todi. At 6:00 a.m. the goats in Truns were being led, in twos and threes, by their owners to join the herd which was to accompany us up half the way. The valley was still in the deep, cool shadow foretelling a perfect day. As the goats began to crowd round us we noticed their herdsman — a bright-eyed, intellectual boy of twenty. In a while, up a tributary path, came four spry, sardonic animals and a beautiful peasant lass. The goats joined the herd and their mistress began a most beguiling conversation with their herdsman. We tactfully continued uphill with the goats. As a reward perhaps, the herdsman, when he overtook us, insisted upon carrying my sack. We said goodbye to him with regret half-way—after learning more than a little about goats and goat herding — and began to teach our disloyal lungs and legs how to go uphill again.

The Punteglias Hut is famous (but not unique) for receding uphill as you advance upon it. Opening its door, at last, we beheld tables laid with sandwiches of every description, enough for thirty folk at least. But no magician's palace or shy witches' hovel could have been more still and deserted. Our worst fears were well-founded. It *was* a young people's *verein* — all insatiable addicts of group singing. Long past midnight they were still drowning the mandolin and concertina. Our plans for an early start on the Todi had to be changed.

The fact is we fled from them over a little pass into the Gliempsthal. Loafing down it, too content with its beauty to wonder even where we were going, we came to an old lake basin

pungently named from the screes beyond it, the Stgeina de Glievers. We were just wondering whether we oughtn't to bivouac somehow and go up the Todi in the morning when we walked into a small abandoned camp with a pile of dry straw and planks enough to roof a shelter. The finger of Fate, no mistake about it. So we made up our lost sleep and found ourselves quite early next morning, after chopping a lot of steps, being cramponless on the snowless glacier, at the foot of the Gliemps Forte, which is a steep couloir leading to the upper glacier on the Todi. We found two lively torrents coming down and danger from continuous stonefall. At the Punteglias Hut we had already heard a sad story of skulls cracked at this point among the party of songsters. What had been incomprehensible then was only too understandable here, so — after giving it a good look — we decided to turn back and use the rest of the day walking over to the Cavardiras Hut, the starting point for the Oberalpstock (10,926 feet).

This is a longish way and the path in these deserted wastes has been allowed to lapse. We were not too much surprised when evening found us some two hours short of our goal with a tangled maze of moraines ahead and a heavy thunderstorm breaking over us. Should we push on or sleep out again? The prospect looked miserable enough as we crawled under a gigantic boulder to shelter. Groping about in the recesses beneath it, what should we find but a little stack of ancient firewood. This miracle changed the complexion of affairs. We had a thoroughly cosy night, as much at home as marmots. The stones of our fire place, wrapped in newspaper, made ideal hot bricks to cuddle. They were still too hot to touch when unwrapped in the morning! From the Cavardiras Hut we went up the Oberalpstock, a graceful and comfortable mountain, and so down again to renewed lassitudes in Disentis.

On the way down, loath to plunge back into torpor, we lingered to make tea. A spring bubbled out from under a boulder into a pool just deep enough to bathe in, hummocks of green rhododendron sheltered us on all sides and before us across the deep haze-filled trench of the main valley, were all our peaks of the week before, basking in the afternoon sunshine. Thinking of Disentis we resolved to find a center high enough to give us a continuous spell of such upland delight.

The Göschenen Alp (5,626 feet) was an obvious choice. When we arrived, via Andermatt and Göschenen, we found Riona Barclay there. She was on her own — well seasoned on her native Scottish hills and eager to begin her Alpine noviciate. We proposed that she should join us on a trip and took her up to the Kehlenalp Hut (7,678 feet) for the Sustenhorn (11,523 feet). How her uncertainties as to what a Swiss Alpine Club Hut would be like swept one back to one's own early days! What to take? Would pajamas be useful ? (No! you mostly sleep in a fresh change of underclothes). Would there be beds? (No! Only a place on one of the mattresses—nowadays spring-supported, rather than hay or straw-padded, in the up-to-date huts)—Any blankets? (Plenty as a rule, marked to show you which end to wrap round your feet). The hut turned out to be all it should be. We woke to the excitement of the creeping, stumbling lantern-lit early start, and the Sustenhorn in the fiery dawn, though great white clouds crowded around it, made an excellent alpine initiation.

We went up the Winterstock (10,607 feet) fine granite climbing, but uncertain looking weather soon set us moving again. How restless an alpine wanderer becomes!

The Gotthard Tunnel tempted us through into the Val Bedretto. Its fourteen minutes in the dark lead one into another world. The first sight of the tall, pale, petal-hued walls in Airolo tells you that you have crossed a cultural frontier. They are as characteristic as the Italian tones one hears. The Val Bedretto is a chief fortification zone, being near the St. Gotthard and the Italian

frontier. This means to the visiting climber an ample provision of excellent, high-level paths very convenient for those with hut sacks on their backs. We went up the Basodino (10,750 feet) and Cristallina, fine viewpoints on which we passed hours gossiping with passing climbers of many nationalities and comparing the merits of divers meta cookers. The route between them is one of the grandest walks in the Alps.

Sometimes in such wandering, some one summit — often a distant peak still nameless to you — seems to pick you out as if it had something to say. You keep seeing it — in a nick between near summits or through a cleft between ranges. So it had been all the season with the Galenstock (11,802 feet) which stands like a great white watch tower over the Rhone Glacier. Now, on the Cristallino's simple, sun-backed summit rocks, it called us back. You can go up the Galenstock from the most accessible hut in the Alps: the Albert Heim Hütte (2,546 metres) which is only an hour and a half above the motor road. It is apt, accordingly, to be crowded at weekends, but, in between, this roomy, granite hut, poised, like a castle, on a bold cliff promontory, offers a very wide range of climbing as hard or as easy as you please.

The Galenstock is usually a middle order climb. This year it had lost its snow and the well-known final ridge was pure ice. It was narrow and aerial enough when we reached it to make me glad to have I.A.R. cut me comfortable steps up its crest. At the summit we saw a sight rare last season: a vast black thunderstorm was rolling up the Rhone Valley towards us burying all the Valais giants in reverberant night. There was time enough to return at leisure to the glacier. There we did the commonsense thing and followed downward tracks which took us across snow bridges as spectacular as they seemed speculative, just about the time that the thunderstorm passed by. We were exactly on the edge of its track, between the sunlight and its vast indigo recesses aquiver with fangs of silver flame. It was the best behaved thunderstorm I have ever been so near to, and we reached the hut before its floods began to drum the roof.

Next day we turned homewards to visit more familiar ground, the Saasthal above Visp. This is a region which a Canadian visitor may put high up on his list of priorities. He will be among the giants of the Alps, yet there is a variety of lesser peaks to tempt him. Saas Fee itself has become a wilderness of gravelled terraces dotted with striped sun awnings; but down in Saas Grund is a small hotel, the Monte Rosa, at which one might spend a year of old world quiet. And well placed huts, the Weissmies, the Mischabel and the Britannia are within reach to open up every sort and degree of expedition. The early mountaineers somehow used to do everything direct from Saas Grund. There were giants in those days. We did, the Laquinhorn (13,140 feet) in a snow flurry and the east ridge of the Allalin (13,236 feet). This is an unduly neglected way up the mountain: a very pretty snow arête which lifts one high above the troughs and slopes of the usual route.

We wound up our summer and said our goodbye to the Alps by walking across from the Britannia Hut to Mattmark to visit the Monte Moro Pass. The two glaciers you cross are just complex enough to be interesting without becoming a nuisance. They take you to a great green shoulder of the *alpage* world belted with cliffs to which a tall landmark of a *steinman* is the clue. Below, we found a seventeen-year-old girl, blue-eyed and red-cheeked and her younger brother. She is the *fruitier* or cheesemaker, and they were most hospitable, offering us all they had: dried meat, tea, well consolidated bread, bilberry jam, cheese and whey. Unfortunately the Commune neglects its duty, which is to keep the roofs of *alpages* leakproof. So rain had got into some of her cheeses and spoilt them. While we were commiserating, one of the cows, who had acquired a taste for clothing, was seen running off with the girl's red sweater — perhaps as an offering to her favoured bull? A chase and a fusillade of stones saved this, but the day before

that cow had swallowed a towel. They said it was the only cow ever known to do so.

Looking round their scantily furnished, neatly kept, but *cowy* little hovel, with its leaking roof, I found myself wondering — as before at St. Maria, Lukmanier — how long this *alpage* life of ceaseless labour, real hardship and grim loneliness can continue. Then it had been an eight-year-old imp of a goatherd, running, hour after hour, up and down his cliffy slopes, keeping his wayward charges from straying by stone throwing and by outpacing them with nimbler leaps than theirs, daylong alone with them, sometimes in sunlight, more often in thick mist or rain, out of sight, out of mind, it seemed, of humanity, hearing nothing but the goats' eh-eh or echoes, sometimes, of his own shrill cries.

And now, here were these two young people. They were going to escape, I sensed. Another world had arisen for them to claim them in time. I said goodbye — night shadow had filled the valley — thinking very hard about the price men have paid for cheese.

The Monte Moro Pass brought vanished ages to mind again. Before Napoleon built the Simplon path this was the main route over to Italy. It crossed a little glacier, now stone-buried, and climbed boldly across the cliffs to the summit. For hundreds of feet the great, wedged stone slabs, cyclopean at times, are still in place. Local people say the Romans built this causeway — but the Devil and the Romans often compete for wonders in these parts. It is true at least that in living memory tourists were carried in litters over the pass. If you are early enough in reaching it (we just were, thanks to a pre-dawn start from Mattmark) you will see the stupendous south face of Monte Rosa from the col before those clouds come which, in Ruskin's words, "roll up against them out of the vast Italian plain, forced together by the narrowing crescent, and breaking up at last against the Alpine wall in towers of spectral spray." As they closed over us, I picked up from beside the path a queer-shaped piece of ancient iron. The Zermatt museum later identified it as an oxshoe from the old days when oxen carried merchandise over the pass.

It is these flavors of vanished and vanishing ages which will tempt Canadian climbers to Switzerland as much, I think, as the peaks themselves. Canada can offer most types of high mountaineering, though the conveniences, the paths and huts and guides, are not present. And their absence, while it may sometimes make the weak flesh sigh, is as often compensated to the spirit. To recapture the Switzerland of the classic narratives, you have to go to the smaller centers, Whymper's Matterhorn and Tyndall's Monte Rosa no longer exist. In its place there are the tennis courts, the jewellery shops, the rayon souvenirs, the *thé dansants* and the gigolo, and in the fine weather the queue waiting at the first rocks of the Matterhorn. There is much which would have surprised Leslie Stephen and strained even Ruskin's powers with the pen. The scene they enriched for us has gone. None the less, the great circle of giants still stands around Zermatt. Happy those who find themselves in early morning high above the cosmopolitan center and alone with them.

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EARLY EXPLORERS OF THE WEST

BY ELIZABETH PARKER

Father De Smet

From De Smet's "Ode to the Rocky Mountains."

All hail Majestic Rock—the home
Where many a wanderer yet shall come,
Where God himself from his own heart,
Shall health and peace and joy impart.

Father de Smet, S. J., the first "Black Robe" to penetrate the Rockies north of the boundary, crossed the Divide from the west by a pass south of the Bow in the fall of 1845, spent about a year in ministering to the Indians east and returned west by Athabaska Pass. He was a shrewd, faithful priest and a keen observer. He entered British territory by the Kootenay River (Flatbow, he named it) and made a portage to the Upper Lake, source of the Columbia River. He descended the Columbia to a place where he crossed the dividing ridge to the Kootenay's higher reaches near the mouth of Vermilion River and ascended this tributary to its source on the Divide. He crossed to the South Saskatchewan and worked his way to Rocky Mountain House, the fur post built by Simon Fraser in 1805 at the eastern end of the Rocky Mountain Portage, reaching there, October 4, having travelled 3,480 miles.

De Smet's route in detail across the main range cannot be followed with certainty, as his journals give no clue. Dr. G. M. Dawson, reporting on a mountain survey, has a reasonable theory outlined by Mr. A. O. Wheeler in his book on the Selkirks. There is a stream named Cross River flowing into the Kootenay. Its name was given by the Stoney Indians in honor of a cross once set up on the pass above, which is called Whiteman's Pass. Father de Smet wrote about a "Cross of Peace," which he had erected on a pass crossed by him. As long ago as 1885, an Indian pointed out to Dr. Dawson the spot where the cross had stood on Whiteman's Pass. The pass itself may have been named by the Indians in honour of the Black Robe, or it may have been associated with a party of emigrants in 1841, mentioned by Sir George Simpson. Dr. Dawson's theory was that De Smet, ascended Cross River and crossed Whiteman's Pass, now well known to travellers towards Mt. Assiniboine. ,

The missionary was bound for service to the Indians east of the summit range. In the Upper Columbia Valley, he visited the Hot Springs at Fairmont, praised the pleasant climate of the country, predicted an agrarian settlement, and was enthusiastic over the mountains on either side of the valley. "The magic hand of civilized man would transform it into a celestial paradise." He describes the "monarch who rules" on the Upper Columbia, as "an honest immigrant from the district of Montreal" .who had dwelt there for twenty-six years. His tent was a "portable palace." With his wife and seven children, he "embarked" on horseback and landed where he pleased. His furry subjects were beaver, otter, marten, fox, bear, wolf, sheep, goat and all the large and beautiful game of the hills. "He exacts and receives tribute of flesh and skin. He is a monarch of mountains and valleys"—a Christian too, reciting prayers with his family, morning and evening. There were but three other families in the whole region. The missionary baptized the monarch's wife and all the children, offered mass, kept a feast and erected a large cross. The monarch's name was Mirageau.

De Smet quitted the valley, September 9, by a trail which led to a narrow defile between great rock, grey in color with one immense rock of porphyry. A week later he is writing by the foot of his "Cross of Peace." In another letter, he speaks of this defile and its valley which then bore the name of "The Place Where the Old Man Died" or "Liar's Valley." When the Indians passed through canyon and valley they were wont to go in silence. He describes the various trees of the forest, the mountain landscape, and wonders of the aurora, as he travels. Like many an early traveller, he is shocked at the dismal waste of forest by fire.

On the evening of the 18th, De Smet reached the Bow River and there found marks of a recent encampment. Thinking it a sign of Blackfeet, he followed for two days, sending his two guides ahead. They returned with news that the Indians were Assiniboines and that they wanted to meet the Black Robe. He journeyed several days in their company, separating from them on the 27th of September. Writing at Rocky Mountain House, October 5, he mentions the mountain that we call Cascade, saying: "A beautiful crystalline fountain issues from the centre of the perpendicular rock and falls about 500 feet."

De Smet reached Rocky Mountain House on October 4, without meeting any Blackfeet, the tribe of his goal. But a band of Crees, in which there was a feud, were encamped near the fort. They came and shook hands. De Smet assembled them all, the Factor, Mr. Harriote, acting as interpreter, and urging the Crees to be reconciled. A discussion followed in which moderation and good sense prevailed, to the surprise of the missionary, who watched them smoking the calumet (the pipe of peace) ere evening closed. The Cree nation was then powerful in that country. He describes their military discipline, their rapacity, superstitions and social customs. The year before they had captured 600 horses from their mortal enemies, the Blackfeet. Thirteen of that tribe arrived at the fort on October 25, saluting *à la savage,* "rough and cordial." Writing on the last of the month, ere leaving the fort and its hospitable Protestant host, he notes the difference between these cruel Blackfeet and the Indians of the Upper Columbia Valley who were mild and affable. Nevertheless, he made friends with the crafty and barbarous tribe of the north and baptized their children, "whom I tenderly love."

De Smet travelled over 300 miles of that country watered by the north and south branches of the Saskatchewan, keeping observing eyes on natural resources while labouring to convert the Blackfeet. He saw our day of settlements. His headquarters during the winter were at Fort Augustus (Edmonton), most of the eighty servants of the Hudson's Bay Company there being Catholics. Early in March, in a cariole drawn by four dogs, he turned again west, and the third day reached Fort Assiniboine on the Athabaska. Nine days more, and he was at Jasper House, where he remained a fortnight giving daily instruction. A letter written at the foot of "Great Glacier" (Scott Glacier) tells how he had baptized "Colin Fraser's lady," four of his children and two servants; also he renewed and blessed seven marriages.. When leaving Jasper, the people of the fort gave him God-speed with some ceremony: "Each one discharged his musket in the direction of the highest mountain, a large rock in the shape of a sugar loaf, and with three loud hurrahs gave it my name." He estimates its altitude as 14,000 feet, which is as wild arithmetic as those mythical heights of David Douglas. His notion of the glacier's origin is as wide of the mark as that of some other early fur-trading travellers: "One would say that in some sudden swell of the river, immense icebergs had been forced between the rocks and there piled themselves." His name for the Whirlpool River is "Du Trou." As they neared the Athabaska Pass, De Smet's party met a company of Hudson's Bay Company men, with two British officers, Captain Warre and Captain Vavasour, travelling east. The two officers had been on a secret mission for their government. In case of trouble on account

of the Oregon Affair, was a way feasible for troops across the mountains? De Smet had met and entertained them the previous year. "The time of our re-union was short and joyful."

As they approached the pass, the Priest took to snowshoes, having tried to prepare his corpulent figure by fasting "cheerfully" for thirty days. Though much lighter, he found snowshoes very difficult, often falling and becoming-entangled in the branches. Of course, he mentions the Committee's Punch Bowl. Who would not travel over the Whirlpool trail to see that romantic tarn? Who would not search earnestly for the origin of the name? If ever found, it will be in some muniment (sic) of the North West Fur Company.

The travel down the western slope was the usual story. They crossed the rising river forty times, marching with swelling limbs in wet clothes. "All the nails of my feet came off, and the blood stained my moccasins," He describes a lobstick made in his honour, naming it a "Maypole." Each traveller passing that way for the first time selected his own. "A young Canadian dedicated one to me which is at least 20 feet high .... He stripped it of all its branches, only leaving at the top a little crown. At the bottom, my name and the date of the transit were written."

De Smet and his small party reached Boat Encampment at the Big Bend of the Columbia River on the 10th day of May. "Three beautiful rivers," he writes, "unite at this place, the Columbia coming from the southeast, the Portage River (Wood) from the northeast, and the Canoe River from the northwest." After his strenuous missionary tour, this faithful priest, first-foot of Black Robes in the Rocky Mountains, made the long inland voyage on the Columbia to old Fort Vancouver in Oregon.

Paul Kane

Paul Kane, the Canadian Catlin, crossed the Rockies by the Athabaska Pass from the east in 1846, and returned by the same route a year later. Like the American artist, he travelled for the purpose of sketching the aborigines in their habitat, adding to his collection sketches of such Hudson's Bay Company Forts as he visited and of buffalo hunting on the prairies. He travelled from Toronto to Fort Garry, thence to the Saskatchewan as far as Fort Edmonton; and into the mountains by the Athabaska up the Whirlpool Valley, across Athabaska Pass, down to Boat Encampment at the Big Bend, and by the Columbia to Fort Vancouver near its mouth, then an important post of the Hudson's Bay Company. Concerning art, the work of Paul Kane does not rank with that of Catlin, but its historical value is as great. Nor has he been accorded a like recognition by his nation. The record of his journeys east and west across the mountains is a somewhat thrilling one, full of the hardships of winter in high altitudes, He did not reach the Rockies until late in October, travelling by boat up the Athabaska which was very low and choppy with ice, winter having set in early.

Kane climbed up the high bank of the river to see for the first time "the sublime and apparently endless chain of the Rockies." He travelled with a party of Hudson's Bay Company men, among them an Iroquois and a Scot, both of whom won his admiration. The Indian fell into the water and was fished out nearly frozen. Asked if he were cold, he answered with true Indian Stoicism, "My clothes are cold; but I am not." The Scot was Colin Fraser, whose name we know. He was brought out by Sir George Simpson in the capacity of a piper. Accompanying the little Governor, Colin, clad in Highland costume, carried his bagpipes and when at the forts astonished the natives who took him to be a relative of the Great Spirit. Indeed, an Indian once besought Colin to intercede for him with the Great Spirit. "The petitioner little knew how limited was his influence" in that high sphere. And now Colin was a clerk of the Great Company and in charge of

Jasper House. The party encountered a storm which lasted nearly three days, but horses had been sent down from Jasper House to meet them, and finally they arrived at the post, cold and wet and famished. A blazing fire welcomed them and ample mountain mutton. Kane describes the post as consisting of three log buildings: a dwelling of two rooms, each some fifteen feet square, one used by Indians, voyageurs, traders—men, women and children huddled together promiscuously—and one used exclusively by Colin Fraser, his Cree wife and nine "interesting children." The second building was a storehouse for grub when they could get any, and the third seemed to be a dog kennel. Kane made a sketch of the place while an Indian made him a pair of snowshoes.

Leaving Jasper House, the party took horses as far as possible, but by November 10, the animals stuck fast in the snow and were sent back to the Post, with everything save the absolute necessities which were transferred to the backs of the men. The new hands from Montreal were soon worn out, and the veterans had to beat a track for the tenderfeet. There seems to have been women also, as Kane mentions Mrs. Lane who had brought her own snow-shoes and was one of the "best pedestrians." Mrs. Lane was the wife of one of the Company's Factors. One night the party was compelled to bivouac on snow some nine feet deep. The men tramped it hard with snowshoes, then laid on green logs close together, making a platform twenty feet square. Upon this floor they made a fire and beds with pine branches. In the night the fire burned through the logs and made a well beneath, into which a sleeping Indian rolled.

On November 12 the travellers camped on Athabaska Pass, and the next day descended its steep western slope, meeting at the bottom eight men who had come up from Boat Encampment, where they had been waiting for more than a month. It was November 15 ere they reached the Big Bend, a cold and hungry company. How weary the women were after the hard going through those mountain fastnesses, we may only guess. It is comforting to think of the good cheer which awaited them at the bend of the Great River, and of the change in travel when snowshoes gave place to comfortable boats on open water. A great fire was blazing and pots of soup boiling, not mountain mutton nor any game from the forests, but pork and corn all the way from Fort Vancouver. It was a brave company, none braver in the annals of the mountains, that sat about the campfire that November evening. I like to think that there were bright stars shooting above them, that the air grew soft and warm, and that sound, sweet sleep weighed every eyelid down all through the night.

A voyage of 1200 miles to Fort Vancouver was before them with many dangerous rapids to be run or avoided by portage; but they were rowing with the stream; and the fatigues and hardships of wading icy torrents and of tramping deep snows were past. Fifteen days brought them down to the fort where James Douglas and Peter Ogden, two of the Company's famous officers, gave them welcome.

Returning upstream next year, Kane spent four months covering the same distance. He left Fort Vancouver on July 2, 1847. Pulling hard against the stream, hauling the boats up rapids, or travelling along the margin of the great river, his party arrived at Boat Encampment on October 10, shortly after noon. Seeing the friendly smoke rising above the trees they were filled with hope that the brigade whose horses were to carry them across the mountains had arrived from the east. But it was only a chief and two Indians come over to hunt; and so they made a camp, hauled their worn-out boats up high and dry in the sand, exchanged ammunition and sundries with the chief for dried moose-meat and beavers' tails, and possessed their souls impatiently until the brigade would arrive. The crew gambled, and exercised charms to hasten its coming — erecting crosses with one arm pointing towards Athabaska Pass, making a lobstick on which Kane was asked to carve

his name. The only game taken consisted of a few trapped martens. Rain, and rain mingled with large snowflakes, prevented the artist from sketching; and there were few clear hours during the eighteen days of waiting for the brigade which at last arrived— fifty horses laden with provisions, and furs for Russia. They had been nine days coming from Jasper House.

The next day the brigade embarked in the boats which had carried Kane and the rest up the river, and he was left with four Indians who were to take the re-laden horses back across the mountains. They started for Athabaska Pass on the last day of October. What with muskegs, recent rains and heavy traffic on the trail the going was very bad, and the horses were continually sinking and sticking in the mud or wandering helter-skelter in the woods, their packs falling off. The Indians shouted at them in Cree, but swore at them in French, there being no oaths in their native tongue! Any who have ever followed a packtrain in the Rockies, even in our day of the incomparable diamond-hitch, will sympathize with this weary artist back there in the forties of last century when he writes in his diary: "I never spent such a noisy, disagreeable day in my life." As they mounted towards the pass, the snow got deeper and deeper. The day they crossed the pass was one of brilliant sunshine and so cold that Kane's beard became a "solid mass of ice". But they pushed on, and by nightfall of November 4 they met three men who had been sent from Jasper House to assist in driving the packtrain. The next day the cavalcade travelled through a heavy snowstorm and forded the river with the snow driving so furiously in their faces that they could not see the opposite bank. For greater security, the packs of sketches were carried on the riders' shoulders. Across the river they camped on the spot where Kane had slept one year ago.

Down the Athabaska Valley the icy winds drove the riders off their horses and they tramped behind them to an Indian lodge where they warmed themselves, ate mountain mutton, and mounted once more, riding on to Jasper House.

The severe weather had brought the bighorn down from the high places; and, as they rode, Kane counted five large flocks of sheep at once in different directions from Jasper House. Here the men were set to making snow-shoes for the journey ahead, beyond the mountains and, as the birch required did not grow near, they were sent twenty miles off to get it! By the middle of November, a sledge and snowshoes were completed; two dogs were secured from Indians and one from Colin Fraser; and, with an Indian and a half-breed, Kane started for Edmonton on what proved to be the most heroic of all his journeying, east or west. His snowshoes are described as five feet eleven inches long which is nearly the length of skis. Sixteen miles down the Athabaska, the small company came to an Indian lodge whose Indian hostess with five children gave them a Highland welcome. Her hunter-husband returned late with four sheep whereupon hosts and guests set to work to prepare the feast. One of the four was cooked and entirely eaten, and Kane slept that night on bighorn skins. "The most comfortable bed I had slept in for many months," he says.

Nevertheless, before daylight they were off again and shortly entered the lower lake (which he names "Jasper"), a hurricane blowing them onwards. On the ice they met two Indians with whom they fraternised, smoking the pipe of peace. Kane tells how the Indians, on coming to frozen snow or ice where snowshoes had to be taken off, took off their moccasins also, to save them, and travelled barefoot! "Thus, when they sat down they put them on dry and wrapped their feet in furs. This walking barefoot on ice would seem to the inexperienced, dangerous in such intense cold, but in fact the feet accustomed to it suffer less than they do from the ice which forms inside the moccasin (in such long and speedy travelling), when the ice cracks into small pieces and cuts the feet."

The hardest part of the journey began when they were on the river again, the ice of rapid water jamming and freezing into séracs while frequently in bends of the river there would be thin

ice. The dogs were useless here, yet they could not abandon the river as long as the forests on either side were dense and tangled. In places the séracs were, we are told, "from ten to fourteen feet high". "Over this mass of icy pinnacles they scrambled with incredible labour, their limbs bruised by repeated falls and their feet cut by sharp ice". Yet they made ten miles that day. On November 18, they awoke to find water overflowing the ice, and took to the woods, making but one mile in three hours. The frozen strings of the snowshoes cut the feet and a track of blood was left by every step. Two days of such going and Kane had what the voyageurs called mal de raquette, a disease peculiar to the tenderfoot on snow-shoes — intense pain in the instep as if the bones were broken and grinding each other at every step.

So, by perils of ice and water, storms and hunger, after nine days more The little company arrived at Fort Assiniboine on the Athabaska well out of the mountains, having travelled 350 miles in fifteen days.

Though much damaged by famine and the elements, Kane recovered rapidly. He wrapped his feet in clean pieces of blanket — the stockings of that country and time, and put on dry moccasins. "Seated on a pile of buffalo skins before the fire, I commenced the most luxurious repast of my life. Nothing but whitefish". And what safer nourishment for starved stomachs? The good woman at the fort, who provided what variety she could by boiling some and broiling some, confided to the men that she was afraid Mr. Kane was sick since he only ate four out of the seven whitefish she had cooked for him. He stayed at the fort until his feet were healed, lying on the buffalo robes before the fire, alternately eating fish and sleeping. Fish, warmth, and sleep, restored his wonted healthy condition.

Kane ate his Christmas dinner at Fort Edmonton in its capacious dining hall, fifty by twenty-five feet: the menu including beaver tongues, and the guests including a Methodist missionary and a Catholic priest. Fort Edmonton was the hospitable headquarters, in that north country, of the Great Company.

Captain Palliser

In 1857 the British Government appointed Captain Palliser leader of an expedition to explore west of Lake Superior toward the Pacific, emphasis being upon a possible wagon route across the mountains. It is interesting to read in Palliser's Journal, of which only three perfect copies are said to exist, that instructions from Downing Street were signed "H. Labouchere". The party was to be outfitted at Fort Garry and work towards the Rockies north. In 1858, they were to trace both the North Saskatchewan and the South to their headwaters; and it was hoped to cross the Divide by a pass south of Athabaska Pass. In the expedition were Dr. Hector, geologist (Sir James Hector), Lieutenant Blakiston, meteorologist and M. Bourgeau, botanist. These names are perpetuated in mountain nomenclature. Owing to disagreement with the chief, Blakiston withdrew from the expedition but continued his progress independently.

It was early in August when they reached the foothills. Pemmican, made from sixteen buffaloes, was the staple article of diet for the considerable company soon to be divided into sections. Palliser, with his secretary only, first made a little excursion to the boundary, riding along the eastern edge of the foothills, the trip taking six days. Hector was sent to Old Bow Fort down the river to cache the carts. From that point he was to send off one section under Blakiston, another under Bourgeau, and was, himself, to start on a geological journey. Palliser's men were from the Red River and from Lake St. Anne north. He mentions Father Lacombe, that great and

well-known missionary to the Crees. The route through the mountains lay up the Bow as far as the Kananaskis, turning towards Kananaskis Pass. That name was in memory of a brave whose miraculous recovery from a blow on the head was a legend in his tribe. Palliser had been told of the pass by James Sinclair who had probably taken a party from Red River across the mountains by that way. He deplores the stretches of burnt timber in Kananaskis Valley, finding proof that often fires were caused by lightning. He saw masses of black, fallen timber on cliffs no hunter would climb, and describes the terrible going amid prostrate timber, many tiers deep; also the grizzlies, black bears, elk and, on the heights, goat. The river ran through two lakes full of fish. A lake of wooded isles is described where elk roamed. On the pass, Palliser and his small company camped by the lake about half an acre in extent. He measured the height of land as 5,985 feet above sea and 1,885 feet above Old Bow Fort. He was given to comparing altitudes with that of the abandoned fur post. For even then it was but a group of chimneys built of mud and stone, having long before been destroyed by the Indians. Its site is still marked on a map as well out of the range. Palliser describes the descent from Kananaskis Pass as fully 960 feet, the horses led by the men. Today the horses need no leading, so knowing and surefooted are they. For three days the explorer pushed on through fallen timber and finally reached Upper Columbia Lake, climbing several hills en route to get his bearings. And when he found himself on the margin of Upper Columbia Lake, he climbed a hill and a tree on the hill that he might overlook the forest. It was high enough to show him Lake Windermere. That tree is probably still standing. He ought to have left a mark. He gave the name, Otter, to the upper, and Salmon to the lower lake. Half a century earlier, David Thompson had named them "Kootenai Lakes;" and his fort, near the lower lake, "Kootenai House."

Palliser recrossed the mountains by a pass south of Crow's Nest Pass and below the boundary, naming it South Kootenay Pass.

Hector

Hector first reached the Bow River (South Saskatchewan) at the mouth of Dead Man's River (which rises near Devil's Head, the well-known mountain) on August 7, 1858, following to Old Bow Fort the same day. He writes in his report: "A small stream joins the river from the west at this place, the main stream making a bend from a north to an easterly course. Our camp was pitched within three miles of the mountains which rose behind us, ranges of bald, inaccessible cliffs to the height of from three to four thousand feet above the eye." This forever settles the site of Old Bow Fort, which some have said was in Banff Park. Hector measured the altitude as 4,100 feet above sea. He and Bourgeau left the camp together on August 11, with a small company of Red River men, a Stony Indian hunter called Nimrod, and eight horses. They had no grub but a "little tea and a few pounds of grease," trusting for game to feed them. They followed the Bow and entered the eastern range through the Gap as the Canadian Pacific Railway enters to-day. They climbed a mountain and named it Grotto from a large cave whose floor was "battered hard by the feet of sheep and goat." They named Windy Mt. and camped opposite the Three Sisters, though not naming them.

On August 15, they reached the "beautiful little prairie at the base of the Mountain where the water falls," that term being the meaning of Mt. Cascade's Indian name. Hector measured the mountain as 4,521 feet above the valley. Here an Indian told him about a lake, stocked with fish, whose length was "half a day's march" — Devil's Lake, now the beautiful blue Minnewanka. Hector reports climbing for the white goat and the grey sheep on Mt. Cascade. The ascent was

through dense forest for 300 feet, then to an escarpment of limestone beds, buff stone without and blue stone with fossils. A thousand feet up, he was clear of the timber. A precipice obstructing, he turned towards the north side, ascending swiftly. The gale blew a humming bird against his face, and away it flew. Shortly he came to a place involving descent into a corrie, where he startled a large band of sheep. Except their hind parts, they are the color of the rock. "It is startling to be gazing, as you think, at grey rock when suddenly a flock of white objects appear flying from you. They vanish but curiosity often makes them wheel round to have another look at you." The marmot with its human whistle and the little pica with its squeak attracted the climber. And a wee tarn fed by snows, and the alpine meadows with their flowers reminded him of his Scottish hills. From this altitude he descended 2,000 feet into a valley north of the mountain.

On August 17, the explorers visited, Bow Falls and saw another band of bighorn. Tunnel Mountain is mentioned as a hill in the centre of the valley. Going westward past Vermilion Lakes, Hector named the Sawback Range from its serrated ridges, and Mt. Bourgeau which he saw "looking up a valley to W.S.W.," for the botanist. He adds, "The pass, by which Sir George Simpson crossed the Rockies, lies south of this mountain." Hector was half-minded to cross the river there and follow that way, but found so much "white water" in the contributing streams from the south showing them to be in flood, that he kept on the same side of the Bow until opposite a "neglected pass once used by Cree War parties," known as Vermilion Pass. The company made seventeen miles in seven hours that day. The next day he observed "through a deep valley to the S.W. a very massive mountain completely snow-capped; and to the S.E. down the valley, another snow-capped mountain. Castle Mountain I now saw to be connected with the east side of the valley."

The fallen timber was breast high to their horses and the going very slow. They camped for two days, Hector, climbing on Castle Mt. which he examined geologically. On the 20th they crossed the Bow at sixty yards and "very rapid," ascending little Vermilion Creek valley towards the height of land, which they reached in twelve hours by keeping well up on the mountainside to avoid cutting timber. They camped on the pass and Hector climbed on Mt. Ball, which he named for the Under-Secretary of State for the Colonies. They descended Vermilion Valley on the other side of the pass, crossing and recrossing so as to travel "on the shingle." Below Tokum Creek, its largest tributary, the Vermilion turns southeast making the corner called Vermilion Plains, its surface covered with yellow ochre washed down from ferriginous shales in a mountain. Hector notices in another valley as they turned south, "a glacier of fair size, which comes lower than any I have seen in this district." On August 22, three hours' march brought them to a large tributary from Mt. Ball. While following the Vermilion to the Kootenay, Nimrod, hunting a deer, suddenly came upon a panther (mountain lion) and returned to the party "as white as it is possible for a red Indian to be with fear."

Hector camped on August 24 in the Kootenay Valley, sending Nimrod and another man to spy out the way. As the woods were soaking wet, they stripped to their shirts and "in this garb were absent all day." They found a faint trail leading up the valley, and two days later the party camped at the source of the Kootenay. On the 27th they arrived at the height of land dividing it from the Beaverfoot River; on the 29th they reached and discovered Kicking Horse River. "Here I received a severe kick in my chest from my horse, rendering me senseless and disabling me for some time. After two days, lack of food made it necessary to push on. One of the men climbed high enough to view snow-clad peaks west as far as the eye could reach. There seemed no game but panthers which they heard in the night. Hector had intended trying the Beaverfoot Valley, but there was no trail and the valley bottom was a morass covered with fallen timber. Therefore, on August 31, they

turned eastward up the Kicking Horse, going as fast as "jaded horses could go and I could bear the motion," On September 2, they reached the pass, the last mile of ascent a grade of over 1,000 feet. If they had but followed the Bow westward from Castle Mountain, they would have discovered that pass by August 22 and saved the roundabout travel and the accident also which gave the river its its name.

On the pass they found tracks of game, Hector killed a grouse which they stewed in ends of candles and fat of odd sorts, making supper for five who had been living on berries. Next day, Nimrod shot a moose. As they followed the stream eastward coming to the river flowing south-east, the hunter recognized it as the Bow from which they "had been absent about two weeks." Here they fell in with a band of Stonies and secured game for further exploring. That night a pine tree caught fire from the camp, the roaring blaze awakening Hector who caught up the powder and bolted into a swamp. Though there was a brilliant illumination for half an hour, no other trees caught fire. "The glare on dark forest and swarthy faces was very striking." On Sunday morning, the explorers were wakened at an early hour by the Stonies singing hymns.

Tarrying on the pass until September 8, to rest the horses and dry the venison, they turned north and in two days were on Bow Pass (6,347 feet) which Hector thought was not the "direct pass" by which the Indians had come down and had described as very easy. On the way to Bow Pass they would pass the high mountain on the upper reaches of the valley and the lake both named afterwards for Hector. Balfour Glacier is described as a "magnificent mer de glace." The grade of descent north was very steep. The little stream from the pass joined the Mistaya or South Fork of the North Saskatchewan, flowing to northwest through the valley between Mts. Murchison and Balfour. Hector's measurements of the two peaks of Murchison are three and four thousand feet over their real altitude. He hoped to reach Mts. Brown and Hooker north, to try comparisons in mountain arithmetic. Mythical figures all! He named those great mountains and also Mt. Lyell for noted scientists.

On the journey, Hector discovered Glacier Lake between Mts. Forbes and Lyell and traversed Lyell Glacier, taking two days to ascend to "the Ice." In this fascinating alpine region, he climbed a good deal for discovery's sake, which is not to say that he conquered virgin summits. But he climbed high enough for his purpose. Descending the valley of the great North Fork of the Saskatchewan he was on Kootenay Plains by the 16th, and there shot bighorn, and saw many bones of wood buffalo, showing that once they had pastured on these plains of the North Saskatchewan. Two days later Hector and his company passed out of the mountains after thirty-eight day's travel. On the way from Kootenay Plains another band of Stonies joined them in a great hunt for sheep.

In the winter of 1859, Hector entered the Rockies north by the Athabaska, travelling with three men, one a voyageur. Each had a dog-train, Hector included; and altogether they carried pemmican for twenty-eight days. Counting grub, bedding and instruments, the freight on each sled weighed 350 pounds. On January 31, they arrived at the base of Roche Miette, on the "south side" of Athabaska Valley. Part of the going had been on snowshoes. The account of crossing the river, here open water, above Lac a Brule (Burnt Lake) which is below Jasper House, has a ring of the heroic. They first unharnessed the dogs, pitched them in the water and pelted them with ice to make them swim across. "We then got off the edge of the ice ourselves and found the water to take us above the waist; getting sleds, loads and all, on our shoulders, waded through the rapid, 100 yards wide, and reached the left bank. Plunged into water rather warm at first, but on re-emerging we stiffened into a mass of ice (therm 15°). In this state we tackled the dogs that were frozen into a lump with their harness. After a run of two miles through the woods, we reached Jasper House at

10 p.m." At that time the fur post was in charge of a Mr. Moberly who gave them welcome. Hector set his instruments for observation at once. He is delighted with the situation, an open plain within the mountains, the fort built after the "Swiss style, with over-hanging roofs and trellised porticoes. Dwelling house and two stores form three sides of a square; and these, with a detached hut make the whole of this remote establishment." He mentions, besides Roche Miette and Roche Jacques, Roche de Smet and Roche Rond, names given long ago when many travelled this way across the mountains to the Columbia. The Fur Company's traders from the east, on their way to meet the brigade from the west at Boat Encampment, always halted at Jasper House, the journey of both brigades involving toil and hardship. Hector makes some informing notes on the commerce carried on by the great fur traders.

Two or three Iroquois hunters were attached to Jasper House, and all winter they climbed and hunted bighorn. They were sent off before daybreak to catch the sheep coming down from the heights to the salt lakes. They trained dogs to turn the sheep towards precipices as they rushed up the mountains. Hector watched a hunt on Roche de Smet. Moose were scarce that year and the sheep were lean. Moberly had been feeding his people on lynx also, their flesh good eating when fat. "As the mountain mutton was lean and the wild cat fat, we used to combine them by stuffing the cat with minced mutton and roasting it whole. A savoury dish." Hector went with Moberly to hunt lynx up the Snake River. They seemed to have hunted sheep and cariboo on the Athabaska and neighbouring valleys. On February 11, they were opposite the site of old Henry House, once a trading post. Near that place the trail branched off' towards "Caledonia Valley" and Fraser River. They camped on the right bank above the mouth of a river leading to a pass that, in turn, led to the North Saskatchewan and Kootenay Plains. Modern mountaineers know that wide country well.

Hector notes many signs of travel, in one place the name, Hardisty, written the previous summer. On February 13, they were at the mouth of the Whirlpool. Hector climbed a mountain opposite and thought that he saw Mts. Brown and Hooker, about thirty miles away. But he did not travel as far as Athabaska Pass, although going a considerable distance up the valley on snowshoes. On February 16, the two were back at Jasper House, and three days later, Hector left Moberly to his solitary life. He returned to Fort Edmonton by Lake St. Anne, where the good Father Lacombe entertained him hospitably. On May 5, Palliser, Hector, and Fraser forgathered at Edmonton.

According to instructions from Palliser, Hector in 1860 entered the mountains from Old Bow Fort. Two days' travel brought him to Grotto Mt. which he climbed on August 19, seeing a band of sheep and also goat, being from 6:00 a.m. to 7:00 p.m. alone on the climb and getting to the summit. This year he reached Cascade Mt. by way of Lake Minnewanka. On August 22, he crossed a hill, 400 feet high, from which he could see Mt. Ball and Vermilion Pass. By the advise of an Indian, he crossed to the North Saskatchewan by Pipestone Pass. The Indian had seen a herd of seven wood buffalo in the Pipestone Valley, in 1858. Hector named Mount Molar, as he passed, and noted one solitary larch. They saw a big band of sheep on the pass, and descending by the Siffleur River on its north side they saw several large bands feeding on Kootenay Plains. Here they made pemmican. When five miles up the river, Nimrod abandoned them and on Bow River ten days later met the Earl of Southesk, who engaged him to hunt. These two travellers thus missed each other by ten days. Southesk had entered the Rockies by McLeod's River, hunted on Kootenay Plains north, crossed the Saskatchewan and returned via the Pipestone and the Bow. He saw the date and latitude marked by Hector on a tree.

On September 5, Hector ascended the Middle Fork, travelling nine miles on shingle flats and reaching the place where three branches unite. He explored the west branch and walked four

miles over the "clear surface" of the glacier which is its source — the Freshfield Glacier — but he did not name it. That was on September 6. He got back to camp at 3:00 p.m. and started up the south branch which rose suddenly in the glacier in a high valley to the right. But Hector and his men kept on past that valley and came, after a gentle ascent of three miles, to Howse Pass where the water was flowing westward. There they camped amidst open timber by a little lake. The next day they looked for the trail, but seem to have blazed their way through forest on the western slope till they came to an open place about 700 feet above the valley bottom on the brink of the Blaeberry torrent, issuing from a glacier above. They followed through the forest downstream in pouring rain and camped, on narrow ground. It stormed all night long.

On the 13th we find Hector starting alone with his gun and, after twenty-two miles, reaching the Columbia. He saw only tracks of game and went back to meet his men. The pemmican had spoiled, and they were on half-rations with a few grouse for meat. The party reached the Columbia in rain, rain, and more rain. Hector turned south up the river, reluctantly abandoning the journey down the river to the Big Bend. His plan had been to explore a route for horses between the Columbia and Fraser rivers. On September 21, his little company was at the junction of the Columbia and the Kicking Horse (Golden). "I struck it last year, fifteen miles farther up, at the mouth of Beaverfoot," he says. He speaks of "rub-a-dub," a trail on which horses can trot. The party did not hurry as it was eleven days ere they passed Lake Windermere and arrived at the long lake from which the mighty river issues. Thence they followed Palliser's trail. An Indian named Aleck told Hector that there were no snowy mountains west of the upper Columbia. And that ice-clad Purcell Range rising beyond the western ridge! Hector was impressed with the religious Indians of that country. When a bell would ring, all "pop down to pray." Once the bell rang when one Indian held a frisky cow while another milked. Both Indians dropped down on their knees letting go the cow, which promptly kicked over the pail of milk.

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THE SELKIRKS NEAR THE BEAVER-DUNCAN PASS

BY A. C. FABERGE AND JOHN F. SPECK

Since the expeditions of Holway, Palmer, and their companions in the early years of the century, the southern part of the Selkirks has been almost entirely neglected by climbers. Palmer's very attractive descriptions induced us to visit the region of the Beaver-Duncan pass in the summer of 1947.

On July 11, with a first load of provisions, we set out from Glacier over the Illecillewaet snowfield for Glacier Circle. The cabin there is not easy to find, being hidden in thick forest about a hundred yards north of the main stream and two hundred yards west of the lake. Its position and the course of the streams are inaccurately represented on the Topographical Survey of Canada Sheet 82N/SW and also wrongly described in the 1937 edition of Thorington's Climber's Guide to the Interior Ranges of British Columbia; the latter error has been corrected in the 1947 edition. The cabin and its contents are in reasonably good condition. We returned to Glacier, climbing Mt. Fox by the north ridge on the way, and, after some days at the Alpine Club of Canada camp, transported our final load of food to the Glacier Circle cabin.

With combined loads we started on the next day for the Beaver Valley. As there seems to be no trace of the old trail which led from Glacier Circle to the Beaver, a few words on the best route may be useful. The stream from Glacier Circle flows in a rocky gorge not visible from above or below, and in attempting to follow the stream one is forced into exceptionally bad alder slides, as we discovered to our discomfiture. It would seem best to follow the crest of the old north moraine of the Deville Glacier, which dams up the lake, until it joins the slopes of Mt. Macoun, to continue on these slopes horizontally well onto the east face of the mountain, and to descend only when it is clear that nothing but forest intervenes. Then one may take a straight line for the ranger's cabin on the east bank of the Beaver River, plainly visible in its clearing.

About two hundred yards up stream from the cabin is a cable with a trolley, on which we crossed the stream. The cabin, maintained by the ranger at Stoney Creek, is locked and in good condition, and its position is accurately represented on the map. Here we joined the Beaver Valley trail, which formerly ran right up to the Beaver-Duncan pass. About six miles (all are estimated trail distances) above the ranger's cabin is an old trapper's cabin, now half demolished. The trail between these two cabins is well marked, and we recall crossing about thirty-five windfalls. Two miles or so above the trapper's cabin the trail finally disappears in growths of devil's club, and our efforts to trace it further failed. We then went through the forest in a southwesterly direction, reaching the Beaver River about opposite the base of Beaver Overlook, in about two hours from the end of the trail. The trail here seems to be farther from the river than indicated on the map.

From this point the stream was followed closely, making use of gravel terraces when possible, but at least half the time it was necessary to push through thick undergrowth. Some two miles above the junction of the stream from the Grand Glaciers, the east bank of the Beaver becomes steep. Here we were pleased to discover the trail again, apparently maintained through use by animals. About three miles from the pass the bank becomes flat again and the trail disappears. Carrying heavy packs and searching for the trail, we took a day and a half from the ranger's cabin to the pass.

At the pass we were surprised to find a well-stocked camp, which proved to belong to Hendricks, Wexler, Hubbard, and Peterson. They had arrived by way of McMurdo Creek and we greatly enjoyed their hospitality on rest days.

Lower Summit Of Sugarloaf. *Photo A. Wexler.*

Summit Of Sugarloaf. *Photo A. Wexler.*

Sugarloaf And The Slopes Of Duncan. *Photo A. Wexler.*

We established our camp on the north moraine of the Beaver Glacier, about an hour above the floor of the valley. It is from this side that the upper part of the glacier can most easily be reached. On July 25 we ascended Mt. Duncan, going across the glacier to the saddle between Mt. Duncan and Mt. Beaver and then up the ridge and the southwest face, on unpleasant, sloping, gravelly ledges. The upper part of Duncan has the form of an L, with the short arm pointing southeast, the angle toward the saddle between Duncan and Beaver, and the long arm northeast. The cairn left by Holway was visible at the end of the northeast ridge, but our summit at the end of the other arm seemed at least as high. Immediately to the south, at our feet, was the valley through which Holway first visited the Battle Range, and beyond it, rising in complicated tiers and ridges, was the Battle Range itself. Masses of black cloud poured over these ridges toward us, and soon after leaving the summit we were in the midst of a heavy blizzard, which prevented us from climbing Mt. Beaver as we had intended.

After a few days of rest enforced by almost continuous rain, cloudless weather permitted us to make the ascent of Sugarloaf. The route led over the upper Beaver Glacier to the ridge east of the "loaf" and then south over the "loaf" to the summit. This was the same route taken a few days before by Hendricks and his party in descending the peak. The extensive upper basin of the Beaver Glacier, snowy and heavily crevassed, is very impressive and well worth a visit on its own account. As elsewhere in the Selkirks, the glaciers have receded considerably in the last thirty years. In particular we noted that the Grand Glacier no longer joins the southern tongue of the Deville snowfield and that the Battle Glacier below Mt. Purity is now completely cut across by a rocky bar.

On the return trip we had no difficulty in getting to the ranger's cabin in one day and from there to Stoney Creek station in one day more. The trail below the cabin is in fairly good condition and is practicable for horses. It is much easier to reach the Beaver Valley from Stoney Creek than from Glacier Circle.

We hope that these notes may make it easier for others to visit this interesting region, the climbing possibilities of which we only inadequately sampled.

BY STERLING B. HENDRICKS

A party of four, Arnold Wexler (A.C.C.), Donald Hubbard, Alvin Peterson and myself traversed the country from the junction of McMurdo Creek and the Spillamacheen River over the McMurdo-Duncan divide, and via the Beaver River valley and Glacier Circle to Glacier. We made a first ascent of the second highest summit (ca 9,300 feet) in the Spillamacheen Group which was climbed again later in the summer by David Hope Simpson who ascended by the glacier on the north slopes and then continued up the eastern ridge. The higher eastern summit of the group (ca 9,400) was climbed by David Hope Simpson in 1946. A jeep road now goes within two miles of the McMurdo-Duncan divide which is only about four hours from the Beaver-Duncan divide (with packs).

The second ascent was made of Sugarloaf and the third of Duncan — alternating in this with A. C. Faberge and John F. Speck who had come into the region via Glacier Circle. A short trip was started up the creek to the south used by Holway and fellow travelers as an approach to the outliers of the Battle Range. This trip was not completed.

The trip down the Beaver is very easy, involving about one day in the bush with trail for the remainder of the distance. The Beaver River was crossed by cable car at the Warden's cabin. The bush-going into Glacier Circle is terrible unless one travels high, which we failed to do even

though advised. The upper Beaver Valley is filled with some very large timber and several excellent rhododendron swamps. The Beaver-Duncan pass is broad and flat. It is very swampy and the lake indicated on the map is not suitable for camping. The Beaver Glacier has retreated very rapidly for about one mile since the photograph published in Palmer's book was taken.

THE SIERRA CLUB IN THE COAST RANGE

BY RICHARD C. HOUSTON

The Sierra Club expedition assembled in late July, 1947, at Vancouver, British Columbia, and divided into two groups, six to drive the 500 miles to Tatla Lake and thence backpack into the Coast Range, and the remaining two members to fly into our base camp, drop supplies and then be landed on Twist Lake. From there they would join the advance party near the Scimitar Glacier.

After considerable help in Vancouver from friends and especially from Mr. Stanley T. V. Jeffrey of the Canadian Pacific Railway, Mr. Don. Munday of the Alpine Club of Canada, and Mr. Bob Howard of Vancouver, the advance party drove to Bluff Lake some 18 miles south of Tatla Lake, the jumping-off point for the backpackers. On August 2 six of us, Oscar Cook, Richard Houston, Fletcher Hoyt, Fritz Lippmann, Howard Parker, and Ulf Ramm-Ericson, shouldered our 70-pound packs and started the 50 miles of trail, swamp, deadfall, stream crossings, and mosquitoes down the west branch of the Homathko River, that eventually led five days later to the snout of the Scimitar Glacier and base camp. Here we met four members of the Harvard Mountaineering Club already in the area on their own expedition.

At base camp the advance party, with dwindling food supplies, awaited the much-looked-for air drop by Queen Charlotte Airlines of Vancouver. After two days of nail chewing, watching the weather, and general nervousness, we heard the steady drone of the little QCA Norseman as the plane winged its way up the Scimitar Valley from Bute Inlet and the Homathko Valley. Accompanying the plane were Robin Hansen and Rupert Gates, the remainder of the party who had packed the 1200 pounds of supplies into 31 bundles, and now were acting as special delivery drop artists. The free fall air drop was placed, possibly I should say strewn, upon the boulder field at base camp in about a square mile of area. QCA landed Hansen and Gates upon Twist Lake and they joined us two days later, carrying the ever precious stove fuel, which it had been impossible to drop onto the boulders. We spent about two days in rearranging our food and supplies and sorting many items that had become horribly mixed in the drop.

Eager to be under way, Hoyt and Ramm-Ericson made a first ascent of Mt. Projectile (9,800 feet), on August 11 from base camp, taking 16 hours for the complete circuit. The route follows the large right-hand gully and thence proceeds along the ridge involving moderately difficult rock climbing.

The entire group then explored the Scimitar Glacier to Fury Gap, Pocket Valley and the Parallel Glacier, and the lower portions of Cataract Glacier leading to Cataract Col and our intended high camps.

The real work began as we moved 700 pounds of supplies to our first high camp on the Tellot Glacier, just over Cataract Col at about 9,800 feet. Ascents were continued for three days of perfect climbing weather. On August 16 Lippmann and Gates made a second ascent of Mt. Dentiform (10,600 feet) via the right hand rock arête. The following day Hansen, Houston, and Hoyt journeyed to the Claw peaks after a 4:30 a.m. start to investigate climbing on these sharp and prominent pinnacles, and decided to try the Third Claw (9,100 feet). The party ascended to the prominent notch and then went directly up the face to the summit for the first ascent. Two pitons were placed for direct aid on the summit pitch, the only aid used on the climb. On the same day Ramm-Ericson and Gates made a second ascent of Heartstone (10,000 feet) directly east of camp, which turned out to be a longer climb than expected.

Looking Down The Tellot Glacier. Mt. Dragonback In The Foreground.
Photo F. Hoyt.

Mt. Tiedemann From Mt. Argiewicz.
Photo F. Hoyt.

Scimitar Glacier From Mt. Projectile, Mt. Hickson To Left Of Glacier.
Photo F. Hoyt.

Owing to the distance to the Stiletto-Dentiform ridge we voted to move camp westward and 500 feet higher on the Tellot Glacier. We passed the Harvard camp on the way and set our small mountain tents at 10,200 feet, about 400 yards north of the main ridge. Here we experienced our only poor weather—a night and day of snowfall which brought the temperature down some ten degrees.

On August 19 two small peaks to the north of the camp were climbed in the new snow, both for the first time. We named these peaks "Dragonback" (10,700 feet) and "Eaglehead" (10,800 feet) for their unusual forms.

Next day a first ascent of Stiletto Needle (11,400 feet) was made by Lippmann and Gates and by Bud King and Francis P. Magoun III of the Harvard party. New snow complicated the climb, which started from the notch between the Needle and Mt. Serra. The summit was reached in six hours, taking 12 pitons, two for direct aid on the summit pitch. From the notch the route traversed upward to the ridge to the east of the Needle and thence circled upward on the Needle to the north and the summit. The descent was started at 4:00 p.m. and took five hours of rappelling and traversing to again reach the upper Tellot Glacier and high camp. On the same day Hoyt, Ramm-Ericson, Hansen, and Houston made the first ascent of Mt. Wilson (first peak of Mt. Serra, 11,800 feet). The route runs from the Serra-Stiletto notch, traversing to the main southern ridge and continuing on the ridge involving moderately difficult rock-climbing to the summit. The descent was accomplished during a short but fierce snow storm, which made the footing poor and visibility even poorer.

In the course of the following days several other climbs were completed, including first ascents of Mills Tower(10,000 feet), east peak of Mt. Dentiform (10,600 feet), east peak of Mt. McCormick (10,300 feet), fourth Claw Peak (9,100 feet), Mt. Argiewicz (10,900 feet), and second ascents of Tellot Peak (11,000 feet), and Mt. Shand (10,500 feet).

On August 23 the party returned to base camp, leaving about 75 pounds of food and fuel cached on the ridge of Dragonback near a large rock cairn just north of our highest camp. After four days at base camp the party started the return journey to Bluff Lake, again carrying the usual 70 to 80 pounds. We arrived at the cars in five days and again traversed the dirt roads, reaching Vancouver three days later.

In Vancouver we again realized the glories of civilization and unlimited food, although all of us were surely disappointed in leaving these fabulous mountains on the coast of Western Canada. Our equipment included the usual mountaineering items, but of special interest was our footgear. All members of the party wore rubber Goodyear Lug soles on their regular climbing boots. These soles proved superior to nails on ice, snow, and rock and were excellent insulators against the cold.

We had gained much knowledge and experience and found many friends in Canada, who were more than helpful in making our expedition a success. Indeed we all look forward to returning to British Columbia, and once again traveling the coastal glaciers to the summits.

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TWO MONTHS IN THE COAST RANGE

BY FRED BECKEY

The magnificence of the high peaks to the east of Mt. Waddington destines them to a great mountaineering future. Canadian Alpine Journal readers need no introduction to the untiring efforts of Hall, Munday, and others in 1932, 1933, and 1939 in the exploration and climbing of this alpine wonderland, truly the climax of the British Columbia Coast Range. But most of the unclimbed giants of the Tiedemann and Cataract peaks, as well as peaks north of the Scimitar Glacier were still left as a challenge to the hardy.

The 1947 Harvard Mountaineering Club expedition was undertaken to make as complete a climbing exploration of these mighty peaks as possible. William L. Putnam organized the venture in spring. Men finally picked were Harry C. King, Francis P. Magoun, Lawrence Miner, and Graham Matthews of Cambridge; Charles Shiverick of Cleveland, Ohio; Leonard Winchester of New Haven, Conn.; David Michael of Athens, Ga. At the last minute I decided to take the opportunity to join. From Mt. Waddington in 1942 my interests in climbing' these high peaks had never been daunted. My brother Helmy and I had skied down the Splendor Glacier to the foot of the Tiedemann Peaks that summer, only to be thwarted by an impracticable approach to set up a good base camp. A better approach to these peaks is from the interior and the West Fork of the Homathko River, used by the 1933 and 1939 expeditions to the Scimitar Glacier and by Sir Norman Watson when crossing the range on skis in 1934. Our objectives all day lay north and east of the Waddington uplift and we had no desire to cross the range in setting up a base camp. Plans had been made to take packhorses from Tatla Lake to Scimitar (Goat) Creek, a distance of some 58 miles. At my suggestion this would be augmented by an aerial drop on the Tellot Glacier at the site of a central high camp, which could be reached from Goat Creek. The Tellot Glacier lies between the Cataract and Tiedemann-Claw chains, making an ideal alpine base.

The advance party (Putnam, Miner, and I) arrived at Williams Lake on June 20. Our plan was to cut trail and establish camps, so that when the main body followed in ten days we could begin climbing. We spent a busy day and a half packing 700 pounds of food and several hundred pounds of equipment into boxes and duffle bags in the rear of Mackenzie's store. Ronald and Casey Wells of Chilliwack's Cascade Air Service landed on the evening of June 21, saying there was a favorable weather forecast. We all hoped so, for if the weather did not improve drastically, we would be harmfully delayed. In the morning we loaded 1200 pounds into the Anson and began a three and a half hour flight. In a few moments we saw the great white skyline to the west glistening in the sun, and were thankful the skies had cleared. The rolling, lake-dotted, pine forests of the Chilcotin plateau stretched below in all directions; at times we saw the crooked 150-mile road to Tatla Lake. We busied ourselves orienting peaks and admiring the grand scenery. The emerald-tinted Chilko Lake, fringed by icy summits, was a true mountain gem. Soon we passed Tatlayoko Lake and saw the Waddington-Tiedemann uplift with all its satellites looming close ahead. We could easily pick out other prominent peaks, such as Mt. Monarch, the Bella Coola Peaks, and Razorback to our north; Queen Bess, Good Hope, Monmouth, and Gilbert to the south. We gave up shouting to each other because of the plane roar and studied routes carefully. A series of long, sedimentary, knife-edged peaks with tremendous north walls drew exclamations of appreciation. After crossing the West Fork of the Homathko, I pointed out to Ronald a flat spot at 10,000 feet on the upper Tellot. In almost no time we roared over the amazingly jagged Cataract Peaks, looped

over the Tiedemann Glacier and on the return dropped our first bundle, flying 200 feet above the ice. Miner and I dropped two boxes, tied together, on each of thirteen passes while Casey and Putnam photographed. The gas can dropped free when the chute didn't open, but was found unharmed. A check run showed the boxes well bunched. Then we skirted very close to the south face of Mt. Waddington, the seemingly inaccessible apex of the Coast Range, made some route sketches of the Tiedemann Peaks, and began the return, flying above the Scimitar and Homathko valleys. Three peaks over 10,000 feet at the head of Granite Creek attracted attention. At Tatla Lake we dropped a note to the surprised ranchers saying we would arrive that evening. I felt a little disappointed upon landing, having been so close to our goal, that there was still the long journey ahead. Skag, Putman's malemute, never satisfied the curiosity of the townfolk. Putman drove his car to Tatla in five hours, the bumpy road making rough riding. Here we met the Grahams, who furnished us with horses; Batice Dester, who would lead down the valley; and Dave Wilson, in charge of horses. That evening Skag was in his glory as he made off with a chicken.

On June 23 we packed our gear. The day ended with the party camped at the lower end of Bluff Lake, the empty packhorses trotting the 17 miles with the saddle horses, I helped truck our duffle to the lake and ferry it across in two motorboat trips. Beyond Bluff Lake the level valley floor lends an air of great height to the surrounding summits of Razorback, Blackhorn, Whitesaddle, and Perkins Peak. With five packhorses we rode along the hot trail to sapphire-blue Middle Lake. Each of the lakes in the valley is long, closed in by steep hillsides, and flanked by swamps at either end. A rise in the trail above the lake shore allowed us a beautiful view of our rugged objectives far down the valley. That night we camped in a flat beyond Hell-Ravin' Creek. We encountered our first tough going while fording the Homathko, Skag nearly getting carried under some sweepers. The horses spent most of the morning floundering through a succession of swamps. By now we were becoming more inured to rough riding. At a slough Wilson's horse ducked his head under water, giving him a wet thrill. At Twist Lake a huge brown bear got away before we could reach a gun. One must cross the flooded sandbar at the upper end of the greenish lake. The lake shore trail is dry, but rough; occasionally we had to cut a windfall. The swift waters of Granite Creek got us wetter than the Twist Lake ford, Skag riding across on a saddle horse.

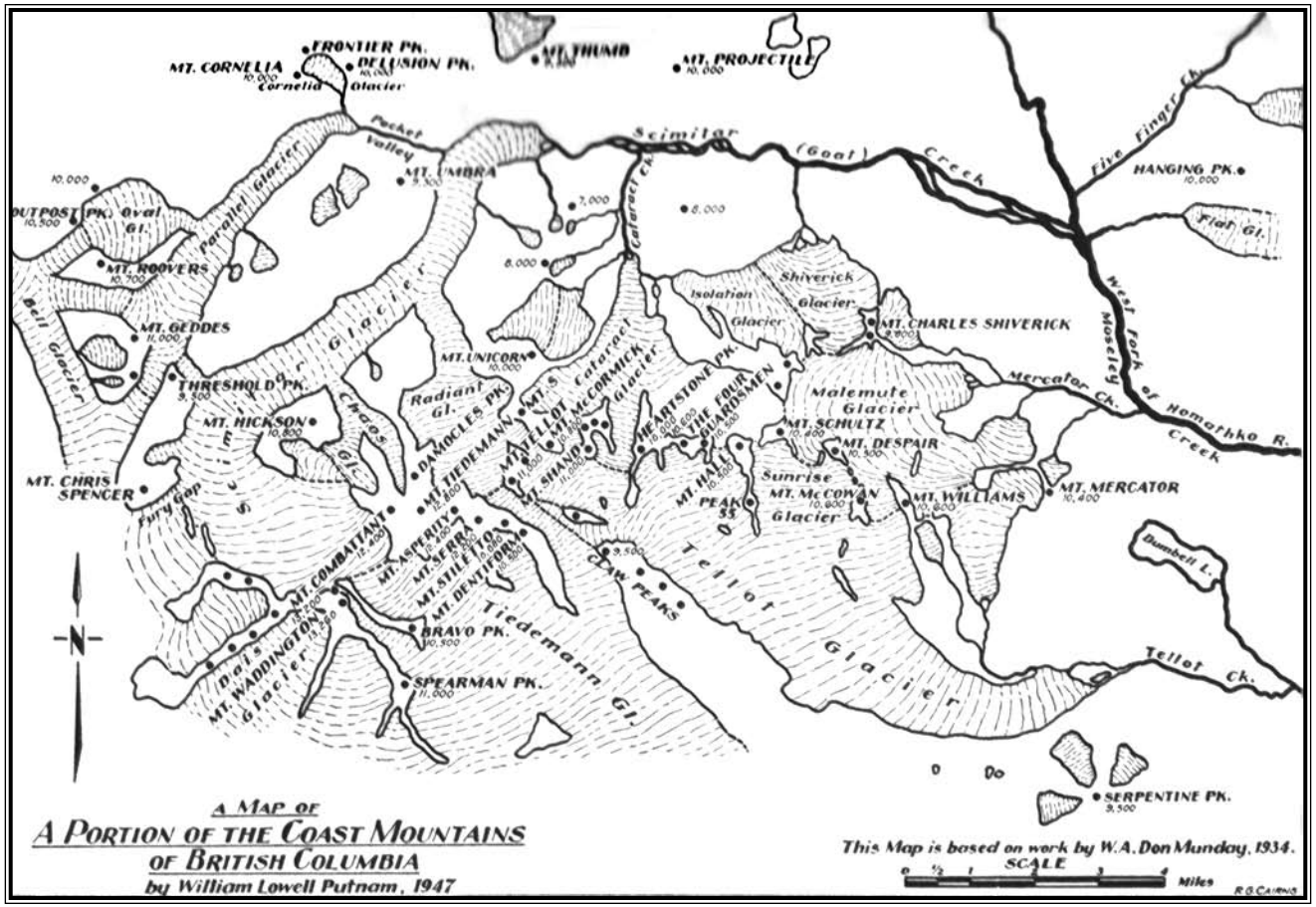
Trouble greeted us beyond. An advancing glacier had pushed a rockslide further down the opposite side of the valley, forcing the river to erode the trail to the edge of a huge rockslide. A survey showed no solution. Finally Batice decided a goat trail at the head of the rockslide could be improved to bring the horses across. For a day and a half we labored to build a trail, cutting hosts of trees and moving rocks. With lots of physical encouragement, the reluctant horses finally crossed without mishap. Then a succession of rockslides, river channels, swamps, and thickets slowed progress. Generally we would go ahead and cut trail, returning to lead the horses over the rough sections and ride through the swamps. Wet weather made fighting the tangled brush miserable. Once we were elated when "one shot" Wilson hit a buck, giving us daily venison. Batice led us with certainty along traces of the old trail to Crazy Creek. After cutting some obstructing trees we forded to the east bank of the river, the horses having to plunge steeply off the slippery bank into fast water. Heavy axe work followed, as fallen trees continually hampered us. Once a bank gave way and a horse had to be pulled out of the river while lying on its side. Another horse twisted its foot on a rockslide. From a camp in heavy timber on the 28th we came opposite Goat Creek in a short time, spending much of the day building a four-log raft and ferrying supplies across while the horses swam. On June 30 we got the horses along the rocky hillside of Goat Creek to the level gravelbars, not without the usual troubles with windfalls and stubborn horses. Three fords and

some nice sandbars took us to Cataract Creek. Here we spied a picturesque forest patch on the angle between Goat and Cataract Creeks which would make an ideal base camp.

The tremendous architecture of the Scimitar Valley impressed us. The granite walls of Mt. Projectile towered over 6,000 feet across Goat Creek, and behind us we caught glimpses of the icy Cataract Peaks through the trees. As the weather was perfect, in the morning Miner and I left for a jaunt toward Mt. Cornelia, reaching the bare snout of the Scimitar Glacier in half an hour, despite a slide alder thicket. We crossed the ice and a wide medial moraine to Pocket Valley, which connects the snout of the Parallel Glacier to the edge of the Scimitar. The valley stream meanders through flowery meadows, then cuts a canyon through the high Scimitar lateral moraine that dams the valley. The north faces of Tiedemann, Asperity, Serra, Tellot, and Hickson tower above the gigantic Radiant ice-fall across the Scimitar. We quickly crossed meadows and morainal debris, climbing to the small Cornelia Glacier. We caught glimpses of the upper Parallel Glacier, Threshold Peak, and spiry ridges of adjoining peaks. We thought this region well worth placing on our itinerary. Flanking the Cornelia Glacier and the 7,200-foot pass at its head rose a number of impressive summits. Mt. Cornelia itself seemed uninteresting, but an unnamed 10,000-foot rock peak one and a half miles north appeared to be a real challenge. This peak we later called Frontier Mountain, as it lies at the head of Frontier Creek, a branch of the Klinaklini. Because of soft snow, rotten rock, and lack of time, we had to give up the climb only 200 feet below the top. But we did get a splendid view of the peaks north of the Scimitar Glacier. Beyond the Tiedemann Peaks, which seemed hopelessly difficult from this side, appeared the ice-encrusted rock summit of Waddington. The descent in the dark was painfully slow and arduous. In the morning we happily learned that Putman had shot both a brown bear and a goat. It seems the bear made the mistake of chasing the goat into his view at the Cataract's lateral moraine.

To avoid the perpetual soft snow at high elevations we decided to leave at night for a Tellot Glacier jaunt to set up high camp. Carrying two tents, a stove, and some personal equipment, we left base camp at 5:00 p.m.; climbing boulders along the aptly named Cataract Creek. Putnam's dead bear still lay on the glacier snout; the goat meat tasted much the better. The ice-sheathed Cataract Peaks, now in the shadow, loomed high above, making a beautiful sight. A talus gully took us around the lower icefall. We crossed a flat section and then began climbing the crevassed upper Cataract Glacier. It was here that Skag nearly won the purple heart. We pulled him out of a short crevasse and tied him into the rope. The intricacies of the crevasse mazes kept our wits alive, and route finding became more difficult after dark. Several times delicate bridges were crossed quite reluctantly, always requiring careful belaying. As we ascended between the granite buttresses of two peaks (Heartstone and Shand) to 9,000-foot Cataract Col, high clouds kept the night warm, and the névé didn't crust as usual. We were quite tired from wading deep snow when we emerged on the Tellot Glacier plateau at midnight. Cataract Col was the high point reached by the two previous expeditions in this area. We climbed a steep pitch, crossed a treacherous bergschrund, and in two hours reached the site of our aerial drop, at 10,000 feet beneath a spur of Mt. Tellot.

We pitched a tent and slept until seven, to be awakened by snowfall. What a plight! We had to locate the bundles lest they become buried in new snow. We moved camp nearer the drop area and began a search. In a driving blizzard we located bundles, pulled then into piles, and brought some to the tents. Only Skag enjoyed the tempest. The remainder of the day passed slowly, Putnam cursing the dog's annoying habit of shaking himself free of snow after he entered his tent. Once he brought in a sausage, stolen from a food box. The night and next day was wild and stormy. We got up at all hours of the clock to clear the snow drift off the tents, often a most miserable undertaking.


MT. CORNELIA
FRONTIER PK.
DELUSION PK.
Cornelia Glacier
MT. THUMB
MT. PROJECTILE
Pocket Valley
Parallel Glacier
MT. UMBRA
Scimitar
(Goat) Creek
Five Fingers Ck.
HANGING PK.
Flat Gl.
OUTPOST (PK.) Oval Gl.
MT. ROOVERS
Bell Glacier
MT. GEDDES
THRESHOLD PK.
Chaos Glacier
Radiant Gl.
MT. UNICORN
DAMOCLES PK.
MT. HICKSON
MT. CHRIS SPENCER
Fury Gap
MT. TIEDEMANN
MT. TELLOT
MT. McCORMICK
MT. SHANDRO
Cataract Glacier
HEARTSTONE PK.
THE FOUR GUARDSMEN
Isolation Glacier
Shiverick Glacier
MT. CHARLES SHIVERICK
Malemute Glacier
MT. SCHULTZ
MT. DESPAIR
Mercator Ck.
West Fork of Homathko R.
Mosley Creek
Sunrise
MT. McCOWAN
MT. HALL PEAK
MT. WILLIAMS
MT. MERCATOR
Dumbell L.
Tellot Glacier
Tellot Ck.
MT. COMBATANT
MT. ASPERITY
MT. SERRA
MT. STILETTO
MT. DENTIFORM
Claw Peaks
Tiedemann Gl.
BRAVO PK.
SPEARMAN PK.
MT. WADDINGTON
Dais Glacier
SERPENTINE PK.
N
A MAP OF
A PORTION OF THE COAST MOUNTAINS
OF BRITISH COLUMBIA
by William Lowell Putnam, 1947
This Map is based on work by W.A. Don Munday, 1934.
SCALE
Miles
R.G. Cairns

When the mountain tents became unendurable on July 5, we left early in the afternoon for base camp in a driving snowstorm. Visibility was zero for half a mile. By aligning ourselves on the rope we luckily hit the right direction and reached a rock face on the side of Mt. Shand, named in memory of William Shand. Route finding then became easier, but a two-foot snowfall made crevasse crossings dangerous, besides obliterating our tracks. Base camp was a repose from the raging- fury 7,000 feet above.

As rain kept us in the valley, we improved the camp area and built several shelters. On July 10 the silence was broken by the arrival of Batice and Wilson, who brought King, Magoun, Winchester, Matthews, Shiverick, and Michael with them. After chasing the horses further up Goat Creek to feed, we enjoyed more of Wilson's venison. Owing to illness, Miner unfortunately had to leave with the horses in the morning, reducing our party to eight. A clear night gave us hopes of an immediate push to high camp, but the morning dawned dubiously. Only Putnam's shooting of a tasty black bear broke the rainy monotony.

On the 16th I took five of the party to high camp, with loads, following the same route. Soft snow again made the long climb tiring. Putnam and Shiverick, with Skag, wanted to find a good base to climb the eastern Cataract Peaks. That day they camped near the head of Isolation Glacier, east of the Cataract. It was dusk when we arrived at the site of high camp, but we received a darker blow when no sight of camp was found. The three-foot snowfall, together with drift, had completely covered the two tents. Fortunately, we brought along a balanced amount of food and equipment. In the morning we located the gas can and several food boxes above camp and began what seemed like endless probing.

The view from high camp was magnificent. We were higher than many of the eastern Cataract Peaks, but the jagged crest of this group even looked imposing on its shorter south flank. The terrifically steep north walls of Dentiform, Stiletto, and Serra, less than a mile away, looked almost unassailable. The ice glazed granite walls and amazing spires of this chain made us realize we should soon have some really technical problems. That afternoon King, Magoun, and I had a better view from 10,500-foot Mt. McCormick, the western peak of the Cataract chain. The ascent from the south was via a narrow rock gully and then an exposed west ridge, requiring constant belaying. Two delicate ridge pitches, where snow had to be chopped off rock, made climbing with boots difficult. We could look straight down the great north wall to the icefalls of the west branch of the Cataract Glacier. A head-on view of the Tiedemann chain was splendid. Equally attractive were the huge peaks north of the Scimitar Glacier. To the east, we noted the high, jagged wave-crests near Five Finger Creek.

At nine on the 18th we left for a triple assault. Matthews, Magoun, and Michael made a short snow trek to the southwest face of Mt. Shand and ascended 300 feet of 50° frozen névé. Broken rock led them to the 10,500-foot virgin summit.

In the meantime Winchester, King, and I climbed to the northwest head of the Tellot, passing closely beneath the towering walls of Stiletto and Serra. Mt. Tellot is composed of two granite towers, half a mile apart, on the ridge at the head of the glacier. First we headed toward the west peak, climbing the névé to the ridge above the great Radiant cirque. We kicked steps along the ridge dividing the Radiant and Tellot in a fierce wind. Some scrambling through granite blocks and a steep slab led to the 11,500-foot summit. The biting wind gave us cause not to linger. We circled through a glacier col and climbed a steep snow arête to within 200 feet of the east tower's peak. I cleared loose snow off 45° blue ice on a north face and cut steps to the rock wall. Here I had much trouble clearing ice and snow off the slabs and placed three pitons to safeguard

a very touchy transverse fissure passage to a tiny notch. This lead took well over an hour. Then King, wearing rubber-cleated Bramani boots, worked up a series of very difficult fissures. I came up to a belay spot and then he worked right on a traverse which forced one awkwardly out. Soon we finished this exciting ascent, but only one at a time touched the summit. After climbing down and rappelling we were able to reach safer slopes out of the numbing wind. We all spent the late afternoon probing, also finishing a snow cave. During the morning the skies had been swept clear of clouds. It was so cold we did not care to leave camp until nine.

Michael, Matthews, and King made a one and a half-mile glacier descent to the foot of 9,500-foot Claw Peak, highest of the fingery Claw Peaks, which are actually an extension of the Tiedemann chain that separates the Tellot and Tiedemann glaciers. They climbed 200 feet of steep rock to the west ridge, but were then stopped because of a knife ridge and lack of equipment. Apparently Claw Peak was much more difficult than a distant view would indicate.

Magoun, Winchester, and I hiked to the north base of 11,000-foot Mt. Dentiform, first of the Tiedemann Peaks. We mounted a 300-foot ice face above the schrund, tricky because of loose snow atop bare ice. Rock scrambling and a snow finger led us to a ridge platform 90 feet below the summit, where we changed to sneakers. Magoun anchored by pitons to a tiny ledge, gave me a shoulder to tackle a high angle slab. It proved quite tricky for 15 feet; then two slight pressure holds gave better security. At noon we built a cairn and ate a hearty lunch. Below us spread the length of the Tiedemann Glacier, and across were the great ice walls of Mts. Munday and Waddington. We could see the Tiedemann chain from a different angle, useful for route plotting. After a descent to camp without incident we continued probing, still unsuccessfully.

Winchester and Magoun climbed the east needle of McCormick, reporting a short, but interesting ascent. In camp, I could easily hear their conversation on the climb. Echoes between peaks of both chains were remarkably clear.

A checkup on some yodeling disclosed Putnam, Shiverick and Skag were arriving from their Cataract reconnaissance. They had set up an igloo-camp amid the eastern Cataract peaks, having tramped to high camp that day, after ascending Mt. Shultz (9,900 feet) in the morning. The route was via the south snow face and then through broken granite to the summit. Before setting up "Camp Sunrise" on the evening of the 18th, they made a difficult trek across the Malemute and Sunrise glaciers to this location between Mt. Shultz and Mt. Despair. On July 17, from a camp on the divide at the head of the Isolation Glacier, they climbed the outstanding 9,600-foot peak north of the Cataract chain, which dominates the angle between Cataract and Mosely creeks. A glacier traverse around the north and east sides of the "Isolated Peak," showed them a route via a northwest spur-ridge that required tricky snow and rock work to ascend. On the descent they avalanched a steep snow slope to make it safe.

Owing to the probable loss of some high camp food and equipment, we thought it best to make an all-out assault on the remaining unclimbed peaks now, especially while the weather remained fair. Since Putnam had left Camp Sunrise intact and stocked with some food, he made the long return trek on the 20th with Magoun, Matthews, and Michael. On the way they ascended 10,000-foot Mt. Heartstone, the pointed ice peak east of Cataract col. On July 21 they divided, Magoun and Matthews scaling Cataract Peak No. 4, which was named "The Four Guardsmen." This 10,000-foot peak proved more difficult than anticipated. Some steep snow and slabby summit rocks were the greatest problem. Putnam and Michael made a long jaunt to the easternmost Cataract peak, a pretty rock pyramid atop an ice uplift. A frozen gully in the west face was its key. Because of the mapping vantage it gave, they named it "Mt. Mercator." On the 22nd Magoun and Matthews

climbed peak No. 9, later named "Mt. Williams." A long west ridge with a succession of false summits prolonged the ascent of the 9,800-foot outcrop. Putnam and Michael had difficulty in scaling Mt. Despair, a bold granite peak near camp, and then climbed Mt. McCowan. Poor weather threatened an end to climbing, so they got busy in the afternoon and made three shorter ascents; namely peaks 5, 5S, and 5N (Mt. Hall). When the weather on the 23rd turned bad, they left happily, having climbed all the Cataract summits. The scene surrounding Camp Sunrise is not unlike the Bugaboo peaks of the Selkirk Range, except that glaciation is more extensive here. An ice col near Mt. Shultz offered a good route to the eastern arm of Cataract Glacier for a long, crevassed route to base camp. The igloo had been more comfortable than their mountain tent.

At high camp we were fairly well equipped and stocked, but lacked a stove. We did manage to use a tin-can stove, filled with sand and gasoline. King, Shiverick, Winchester, and I left camp early for a reconnaissance of Mt. Serra. We crossed a schrund beneath the col between Stiletto, Needle and Serra's first peak. A steep snow traverse along the face of the latter, and then a 200-foot descent in an ice gully brought us to a great, cascading glacier basin on the south face of Serra's second peak. We labored up 800 feet of 45° soft snow in a blistering heat, reaching the jagged crest of an outrigger ridge. We hoped to find a suitable traversing place to reach the fourth and highest peak. We climbed to 11,900 feet along a difficult, pinnacled ridge, finally finding a suitable spot to traverse. It was time to return to camp, however, so we plunge-stepped down the steep basin and followed our steps back to the Tellot, Due to a late start in the morning we descended to 9,000 feet at the base of the granitic monolith of Claw Peak. Convection clouds hovered in the valleys continually, but the south wind weather remained fair. A 200-foot snow and steep rock ascent placed us on the west ridge, which seemed to offer the only route. With sneakers, and in two ropes, we climbed a tilted face via two finger cracks. The next pitch looked worse and proved to be the crux of the difficult climb. A knife-edge ridge made all face climbing out of consideration. I worked up the steep ridge crest on meager friction holds, placing two pitons to reach a loose flake lying on a slab on the right side of the crest. A tricky finger traverse directly above the Tellot icefalls led me to a tiny ledge where I could relax a bit and place another piton. Twenty feet further on I reached a solid belay stance. The ridge became impossible here, but a traversing ascent to the right proved feasible. I placed another piton to safeguard a very doubtful balance pitch. A layback crack was the key of its ascent. The last seventy-five feet were easier, but still exposed. We obtained an excellent view of the rugged section between the Homathko forks. We called an unknown lake near the mouth of Tellot Creek, "Dumbbell Lake," because of its shape. The difficult route we took down the Splendor Glacier in 1942 was close across the Tiedemann Glacier. Because we could not rappel down the narrow ridge, the descent took time. It seemed peculiar to have to climb 1,000 feet of glacier while returning from a climb.

Little did we suspect the tragic events to occur on July 22. Following our old steps, we were nearly at the top of the steep basin at 10:00 a.m. The snow was still hard, as the sun had just reached the slope. Three unusually heavy ice avalanches roared down the slopes across the Tiedemann, lending an ominous atmosphere. We were climbing in two ropes: Winchester and I; King and Shiverick. Shortly below the basin rim I kicked new steps toward a better spot to cross the ridge. Suddenly the whole surface to a depth of one and a half feet cracked off and began to slide. Instantly we were all carried down the 45° basin. I remember being thrown about in all positions and flying over schrunds. Once we slowed, but momentum carried us onward rapidly, as axes did not hold. Suddenly the rope tightened severely; an ice knob had caught our rope in the middle. Winchester and I had been carried about 1,000 feet. We recovered ourselves, and hearing

a shout above, climbed up a steep ice slope, crossing two big schrunds. We were hindered by my painful hip and the loss of one axe. King, descending alone, told us Shiverick was in bad condition. They had slid some 500 feet and had been stopped by the rope catching a snag on a rock island. Apparently Shiverick struck the rocks forcefully and incurred severe internal injuries. He had somehow moved off a snow ledge King had dug for him and slid 200 feet, for we saw him lying in mid-basin. King and Winchester did a heroic task of pulling him to a ledge I built; finally I could assist with a carabiner pulley. We were fearful that undercut sections of the basin might slide. It was shocking to confirm his death. Ironically the weather had turned bad in a few hours and a light snow fell as we made our way to camp, slowed by shock and injuries.

Surmising causes of the mishap is difficult, especially by avalanche theory. The snowfall of eight days earlier had consolidated, but was not completely conformed to the harder layer beneath. We were following an old route used under much worse avalanche conditions on the 20th, but even the snow that day could be considered "typical" of the Coast Range on the southern exposure in midsummer. I am convinced the three very heavy ice avalanches just prior to the slide disturbed adhesion unduly. Perhaps a minor tremor was the indirect cause of these events.

On the 23rd we descended to base with light packs, leaving high camp intact. King suffered a dislocated shoulder, Winchester had badly skinned hands, and I incurred several broken ribs and a hip bruise. It was difficult to break the sad news to the other four. Putnam decided to leave the next morning for Tatla with Michael, a trek that took them three and a half days. We were sorry that climbing had been cut so short for them. We decided to give Shiverick's name to Isolated Peak, which had been his first climb in the area.

On the 28th a wet spell stopped and our interest in climbing revived, although three of us were not yet in very good shape. We packed equipment and five days' food to beautiful Pocket Valley. After a difficult and wet ford of the river we found a suitable camp spot at the upper end of the valley, which needed considerable axework to make it tenable. At seven Magoun, Matthews, and I left this 4,000-foot base to get revenge on Frontier Mountain. We ascended morainal slopes, and climbed the Cornelia and Frontier Glaciers to the south face of the peak, where soft snow made travel very tiring. After donning sneakers above a couloir we made an easy 500-foot west traverse. Several hundred feet of moderately difficult rock via a series of slanting slabs and steep pitches took us to a large platform only 150 feet below the summit of this spectacular rock castle. We were happy to see possibilities of ascending the final vertical face, a problem which had given us cause for worry from below. Matthews led up an awkward, leaning crack, up a short overhang, and reached a cave-like recess. We consolidated here and then worked up a final steep pitch of rotten rock. Our vantage for mapping unexplored regions to the north was excellent. We noted the exact relation of Frontier, Crazy, and Granite creeks, which seem to have confused previous parties. Of immediate interest were several outstanding peaks to the west and one to the east. The descent went efficiently, but darkness overtook us before we reached camp.

On the 30th Winchester and King left for the 10,000-foot peak east of Frontier and the 7,200-foot pass. This great pyramidical mass lies on the Frontier-Crazy Creek watershed, and is the highest peak on a long range from Mt. Projectile to Granite Creek. From the pass on its west they ascended snow and rock; then a very icy gully, to the north ridge. The profile of this ridge from Frontier looked only moderately steep, but it proved quite a deception. A most narrow crest made even spots with gentle gradient difficult. An occasional snowpatch was a hindrance. "Mt. Delusion" was considered a just name.

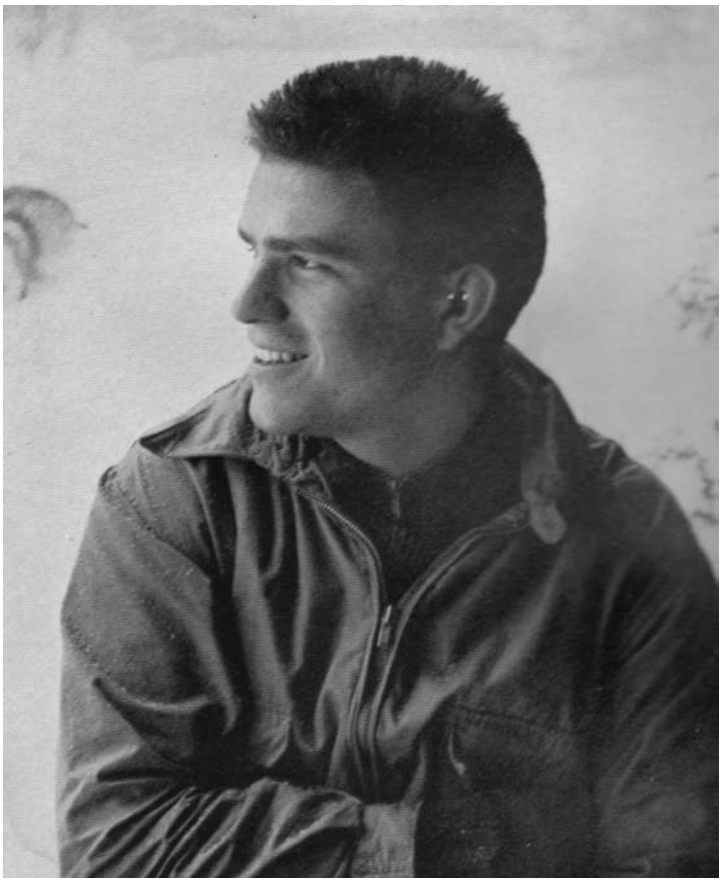
The next day we all left to see what Threshold and other peaks at the head of the Parallel

South Face Of Tiedemann Peaks.
Photo Casey Wells, Cascade Photo Service.

L. To R. Mt. Dentiform, Mt. Stiletto, Stiletto Needle,Mt. Serra, Mt. Asperity.

The North Face Of Pagoda Peak (Centre)
Photo Casey Wells, Cascade Photo Service.

Mt. Queen Bess, Mt. Reliance, Royal Peak (Background).



Charles Shiverick II.
Photo C. Robinson

Glacier would offer. Several miles of ice led to a great icefall which we bypassed on the left. Actually the Parallel divides here, a great ice-fall and glacier coming from the north. We continued west up the Parallel, once crossing a very thin snow bridge, to the base of 9,600-foot Threshold Peak. A lone airplane flew over while we lunched. Here we divided: King and Matthews started up the forbidding, icy rock face of Threshold, while Magoun, Winchester, and I climbed across a flat névé basin and a bergschrund to the col between Mt. Geddes and an unnamed 10,000-foot summit to its south. We made the ascent of the latter without difficulty, although the summit pinnacle was quite interesting. This, the second peak on a ridge extending from Threshold Peak to Mt. Spencer, we called Hermit Peak. Two rock summits to the west appeared striking; they would be hard to reach from the north. An end view of Waddington and the Tiedemann Peaks delighted the eye. In the other direction rose the icy summits of Bell, Remote, and Silverthrone. Mt. Geddes, close by, did not look difficult, but the late hour forbade an ascent. King and Matthews, once across Threshold's bergschrund, encountered 500 feet of technical face climbing, the last of which had steep snow patches. They were pressed for time, so only used one safety piton. Winchester waited for them while Magoun and I climbed 1,000 feet up a glacier segment to a col we hoped would offer a route to the base of Mt. Roovers. We discovered a glacier on the north side that ran below the huge west face. Soon we all met lower on the Parallel, reaching camp at midnight. We felt a rest was deserved, so spent the next day in camp building a shelter. King shot a porcupine and two marmots, adding variety to our low food stock.

On August 2 Magoun and I left the valley at daybreak to climb either Mt. Roovers or a great ice peak to its north, the only two outstanding summits left in this area which interested us. The large glacier feeding the Parallel from the north seemed the best approach, but its 2,000-foot icefall was a dangerous and tortuous climb. We weaved between tilted séracs, across flimsy bridges, and up all sorts of fallen rubble. Luckily we found a way through the maze and were not aimed at by falling ice. Several difficult spots required delicate step chopping and ice acrobatics. In two hours of hard and fast climbing we reached the flattish upper glacier. As we trudged northward across several miles of breakable crust we saw that the 10,500-foot ice peak was our best choice, as the great walls of Mt. Roovers made an attempt from this side foolhardy. Because of its shape, we called this "Oval Glacier" and the ice mountain "Outpost Mountain." A quaint rock ridge fringed the east side of the glacier. Near the south base of Outpost, the glacier reached a curious divide, where a cascade of ice spilled through a gap in the Roovers-Outpost ridge toward the Bell Glacier. An ice slope provided a route to the south ridge of Outpost. We found a rock route that took us up the steep section of the peak, and continued to the summit via a series of snow and rock traverses. From the spacious summit we mapped peripheral regions. The gravel bars of the Klinaklini could be seen through the Frontier Creek valley. On the descent we avoided the dangerous icefall by traversing east across the south face of an unnamed elevation flanking the Oval Glacier, before descending to the Parallel.

As I was still feeling below par and wanted to see if the recent planes had dropped any messages at base camp, I left Pocket Valley the next morning, and met Winchester at Goat Creek. King shot another porky and several marmots that day.

At 12:30 a.m. on August 3, King, Matthews, and Magoun left camp for Mt. Roovers, climbing to the ice col overlooking the Roovers Glacier via the Parallel. Here they descended 1,000 feet and went down the glacier to the centre of the 2,500-foot west face. At eight they began ascending the centre of three great gullies. Difficulties of circumventing a buttress and two chimneys required sneakers. The lower third of the climb was the most exacting; higher, loose

rock was the greatest hazard. Shortly after 3:00 p.m. the trio reached the 10,600-foot summit. Glissading and rappelling sped the long, tiresome descent. On account of the length of the climb they spent only enough time on top to have lunch. The descent proved trying, as great precaution had to be taken due to the exposure and rotten rock. Completing the glacier climb and descents, they reached the valley in 28 hours. We all felt our efforts from Pocket Valley well rewarded, for we had ascended the six outstanding unclimbed peaks in that region.

Winchester and I had made our packs for a final trip to the Tellot Glacier. A shout halted us. Across the river came Wilson, Batice, and Constable Turnbull of the B.C. Police. They had been sent with twelve horses (left at the Homathko) to bring out Shiverick's body. Unfortunately, such a procedure would be impossible without a large rescue party and special equipment. Turnbull left for Tatla the next day with my instructions for bringing out the body, should this be definite under all conditions. Since Winchester wanted to return to civilization by this date, he left also. We hoped that when Turnbull reached civilization, Asa Shiverick, handling details in Vancouver, would grasp the problems involved. While we waited for inclement weather to clear we were very surprised by the arrival of six Sierra Club men, interested in the same peaks as on our itinerary. Fritz Lippmann, Oscar Cook, Dick Houston, Fletcher Hoyt, Rolf Erickson, and Andrews set up camp adjoining us. For a few days base camp seemed like a tent city. They had come in from Bluff Lake. Two others, Robin Hansen and Bud Gates flew over base camp on August 9 to drop their food and supplies, reaching camp several days later from a landing on Twist Lake.

In the interim, crevasses on the Cataract Glacier had become wider and more frequent, so the 7-mile, 7,000-foot climb on the 9th became even more of a route finding problem. As we reached Cataract Col at six in the evening a plane dropped us a message stating it was urgent we reach the Tiedemann Glacier in three days. From here King and I climbed empty to high camp and brought down the tents to Claw Peak, where Magoun and Matthews had carted the remainder of our duffle in the dusk. Although it was very cold in the night, our position at 9,000 feet was decidedly more comfortable than at 1,000 feet higher. A cloudy night forecast ill weather. Several inches of snow fell on the 10th, keeping us tented. The morning dawned brilliantly; we hoped the north wind would blow away heavy local clouds. King and I then re-ascended Claw Peak to film a movie. The climb was every bit as exciting as before. We still considered it the most pleasurable problem we encountered among our climbs this summer. In the late afternoon we broke camp and descended névé fields to the Tiedemann Glacier at 6,000 feet. Soon we hoped to ascend 12,400-foot Mt. Asperity, the highest unclimbed peak in provincial Canada. Dangers of getting stormbound emphasized the need for an advanced camp, which we placed on the medial moraine below the great icefall plunging off the Tellot between Claw Peak and Mt. Dentiform. I spotted the four bundles which a plane message said had been dropped. We crossed a mile of ice to retrieve the food. A plane dropped gas and two "walkie-talkie" radios. With these we made radio contact the next day to a large plane, restating that our plan of evacuation by the Tellot and Cataract glaciers, with additional supplies and recruits, should be followed.

August 13 was our big day. At dawn (six) we were off for 12,400-foot Asperity. In less than an hour we turned off the Tiedemann, at about 6,700 feet and began climbing a glacier salient directly beneath the gigantic upper walls of Asperity. We climbed through a maze of crevasses which had only one route. In two hours we crossed a most insecure bridge at the junction of a crevasse and a hanging ice wall. The cascading glacier here forced us to climb over a number of séracs and ice chimneys to reach a steep and icy 2,000-foot couloir. With an early start we hoped rockfall danger would be slight and individual problems could be met as we came to them. Above

us lay the great couloir. An ascent of a loose rubble pile put us at the final couloir bergschrund. A skewed tunnel cut through the overhanging upper lip, providing the only possibility of crossing. Well belayed, Magoun jumped a portion of the schrund, cut steps up 15 feet of vertical ice and worked through the tunnel, chopping out obstructions. Once above this we made rapid progress, as crampons bit into the steep, grainy ice. The sun was striking the upper rock walls, melting verglas, which showered small rocks down the couloir. It was imperative that we hurry. Several whizzing stones gave us great cause to worry. At 10,800 feet we reached a safe spot and took our first rest. We then continued up the couloir, climbing a precipitous blue ice pitch to gain the crest of the Tiedemann-Asperity ridge (11,500 feet) at an ice col. The tremendous chasm of the Radiant cirque was an appalling sight. Blue ice clung to the north walls of Asperity, Serra, Tellot, and Tiedemann at impossible angles. A howling north wind forced us to seek a rock recess at lunch time. The clear sky belied the miserable climbing conditions. The wind bit through our pants and gloves as we climbed east up a steep, powdery-snowed ice arête. We then traversed a drop in the ridge, keeping away from a cornice, and ascended to the final 300-foot rock face. A very narrow rock arête seemed our only hope. The south face nearly overhung, and while the north face had a lesser gradient, it was perpetually sheathed in verglas and blue ice. I led a difficult traverse on glazed rock and then climbed 50 feet of iced rock to a small notch in the arête. Shortly beyond we encountered a dry 80-degree slab. Matthews, wearing Bramani boots, did a strenuous job of working up 50 feet of this slab to a pinnacle suitable for belaying. Another rope length of the verglassed arête finished the severe climb at 3:00 p.m.

Luckily we found a windless ledge facing the south side on which to thaw out. The view was superb. Only Waddington and Tiedemann rose above us. The skyline from Mt. Bell to Delusion stood out sharply. We could see the waters of Bute Inlet and Middle Lake. The contrast between the surrounding iced, alpine region and the more arid Chilcotin was striking. We noted that Mt. Tiedemann could be climbed from the col where we reached the divide. Mt. Waddington's rocks looked drier than before. Until the tragic event on Serra we had hoped to try its northeast face, near the east tusk. Rappelling facilitated descent of the difficult rock ridge. The fierce wind blew so hard on the ice arête we had to "duck walk," with ropes arching far to the lee. After descending the treacherous caked snow of the ice ridge, we donned crampons to begin the descent of the great ice couloir. We were happy that we were out of the wind and that no rock fell. Looking above, we could see loose snow being blown off the ridge as if it came from a fire hose. Ankle strain was less trying than on the ascent. The thousands of feet of steep ice, the flimsy crevasse bridges, the bergschrund tunnel, the avalanche rubble, all required extreme caution, many belays, and faultless climbing. We were too keen to reach camp safely to allow any mental or physical relaxation. At nine we untied from our two ropes at the tents.

A plan of climbing Serra from this camp was under consideration, but we thought the risk not justifiable because of constant rock and ice fall danger. A feasible route appeared, but much of it lay along couloirs with deep avalanche channels. A plane message stated Don Munday and Neal Carter would be flown to the base of the Tiedemann Glacier by helicopter and then they would meet us at high camp to make a decision over recovery problems. King and I left with packs that evening [1] for the Tellot, climbing to Claw Peak in two and a half hours and then struggled up breakable crust to high camp. A dense fog gave us reason to be concerned, but a short clearing verified our correct course. About 11:00 p.m. we spotted three bundles of food near the now-collapsed

1 Compare with statements in article by Carter and Munday,

ice cave. We pulled them and the camp cache down to a better campsite.

We awakened late, but due to perfect weather thought it wise to make a reconnaissance of Mt. Stiletto and its inspiring west needle. We climbed to the ice col between the needle and Serra's first peak, descended 200 feet and climbed a rope-length to a notch at the west base of the needle. Four rope-lengths of climbing up glazed rock and insecure, steep, snowpatches brought us to slabby rock. We changed to sneakers in an awkward spot and traversed south to a platform. I climbed up a series of short vertical granite pitches, once placing a piton. After two rope-lengths of this, King belayed me across a traverse that required a long stretch, and then up a chockstoned chimney to the ridge between the needle and Stiletto. If it had not already been five, we should have climbed the needle, only 200 feet above. A very exposed, but possible route appeared on Stiletto, approachable only from this spot. The difficulty on Stiletto lay in that its rocks were always so verglassed. On the descent we left a fixed line behind. In the evening the other two arrived with the rest of the Tiedemann Glacier duffle.

On August 16 we climbed to the base of Stiletto, but found the peak enveloped in a local cloud which showered fresh snow. Being extended in uncertain weather was too risky on such a climb. The Sierra party had set up camp close by and that day had made another ascent of Dentiform. I remember whenever afternoon clouds hid the sun, water on the melt tarp would immediately freeze. One minute we would be tanning ourselves, and in the next we would be in sleeping bags.

The 17th was clear, but unbearably windy above 10,500 feet. King and I climbed Mt. Shand with a radio, communicating to camp. Magoun and Matthews climbed the east peak of McCormick, some ten feet lower than the west summit we had previously scaled. In the evening we greeted Munday and Carter, who had climbed from the Tiedemann Glacier that day. We were sorry they had to make a three-day ascent [2] from the helicopter to meet us. Under cloudy morning skies we took them to the accident scene, this time using crampons on the traverse because it was so icy. They agreed an evacuation would be both very difficult and risky. We held a burial and built a cairn at the head of the icy gully. In the afternoon they left for the Tiedemann Glacier again. In the evening the plane dropped more food; this we left with the Sierras, as we would soon be leaving. The snowfall of that night ended at noon of August 19, followed by a scorching afternoon sun.

King and Magoun were more interested in Stiletto Needle than Matthews and I, who had the main peak on our minds, but were frustrated by its fresh snow. King and Magoun joined Lippmann and Gates of the Sierra party and followed our route to the ridge between the Needle and Stiletto. Here they made a traverse on the north face, and ascended a most difficult crack. A piton pendulum and then a direct-aid pitch finished the airy and spectacular climb. The upper rappels were thrilling. We were happy to hear of their success, but sorry to hear the route on Stiletto was still plastered with fresh snow. In the morning King and Magoun left for base camp, while Matthews and I confirmed our suspicions that an attempt on Stiletto would be unwise. We did not feel it worth while waiting several days, despite extra food and good weather, for our stay was becoming limited. We also wondered if Wilson and Batice were still below to pack out our heavy camp gear. On the descent it was interesting to note the changes in the Cataract Glacier even since our ascent eleven days before. From a study of Hall's 1932 photographs it can be seen that most of the hanging glaciers above the Scimitar Valley have receded considerably. The lower Cataract icefall now shows bare rock and the glacier tongue has definitely receded. On the other hand, the Scimitar and Parallel Glaciers showed no signs of recent recession. Grainy ice can be reached on

2 Compare with article by Carter and Munday,

both, just beyond their snouts, without having to travel across debris ice.

On August 22 Magoun and I ran down the seven miles to the raft ford where we happily found Wilson and Batice. They had received no word of our whereabouts since the 9th. We all then walked back with three packhorses, moving camp to the raft crossing in the morning. Base camp on Goat Creek had served its purpose well and we were somewhat reluctant to leave it. Matthews and I were still anxious to learn something about the wilds between the forks of the Homathko and had been enticed ever since the June flight by a huge peak crowning that region. We kept only some food and essential equipment, bidding farewell to the rest of the company who began the rough, four-day horse trip to Tatla Lake. We arranged to have them leave a few food caches at strategic intervals for our light return. Matthews and I took three and a half days' food and began strolling through the sandy forest to Five Finger Creek. This raging stream emerges from a narrow gorge, so we climbed almost 1,000 feet up a wooded spur to traverse one mile above the canyon. Several miles of travel along the river gravel bar brought us close to our mountain. To the north we saw two hanging glaciers above timberline. Behind us rose the great walls of 9,800-foot Hanging Peak. In five hours we had reached a fork in the valley at 3,000 feet a suitable base camp site. The main valley of Five Finger Creek continues northeast. About a quarter of a mile up the right fork was the snout of a large glacier, up which we would have to climb to reach our objective peak. Its jagged west arête began directly across the forks. We have since given the names "Royal Glacier" and "Pagoda Peak," taking the latter name suggested by the 1939 party who mistook Mt. Reliance.

At daybreak we walked across a short moraine to the snout. Both lateral moraines are very high, showing old glacial activity further down Five Finger Creek. A great rock cliff and icefall, similar to the one on the Parallel, blocked our route, but we managed a snow and rock passage to its right, exposed to any falls off the huge north walls of Hanging Peak. It was this side of the valley that drew most of our appreciation. Hanging glaciers and fluted ice patches clung to the near vertical walls for miles on either side of us. Soon we crossed a flat, crevassed section of the glacier and saw its source at a rim of rounded peaks. It was all of three miles in length and at its head fanned away in several directions. A huge icefall from Royal Peak, at the southeast corner, was the chief feeder. Just north the glaciated ridges united to form Pagoda. A high, pointed sedimentary peak to the east seemed to challenge its height, but as we gained elevation, it became more certain that Pagoda was king. Actually it is a box-shaped mass atop a narrow wave-crest between Five Finger Creek and Royal Glacier. The bulging south face had a smattering of overhangs, so we climbed a long diagonal slab to the ridge crest east of the summit. Slabby rock, verglas, and icy snow patches gave us no chance to relax vigilance. The whole massif is composed of west-dipping sedimentary rocks, although Pagoda has numerous granitic outcrops. We expected a terrific drop on the north face, after what I noted from the airplane, but the reality of looking down was stupendous. Even the terrific north walls of Hanging Peak, or those of the Tiedemann Peaks, could not best the terrific ice-patched face below. Above rose a jagged, narrow ridge, which gave us little reason to be optimistic. After changing shoes and leaving our axes, I began working up a series of short overhangs along the narrow ridge. Holds were sufficient, but very loose. An occasional swing above the north face made me wish I had never left home. From a higher belay I worked up a narrow chimney on the south face to a ledge. Here a rotten pitch required great muscular effort. The following 40-foot granite face was also very tricky, but at least had solid rock. Soon we reached a false summit, crossed a deep notch by jumping, and scaled an exposed granite crest to another false summit. Finally Matthews and I worked over a last obstacle and gained the summit. We estimated our elevation at 10,400 feet.

We hurriedly built a cairn, mapped, and admired the scene, as a stratus layer was rapidly converging from the north. There were many high neighbouring summits, but we could see Pagoda was the highest peak between the Homathko forks and Razorback. We saw that upper Five Finger Creek flows through a meadowy basin, connecting with Quartz Creek by a 7,000-foot pass. We saw scores of unnamed glaciers and peaks fringing Nude Creek, Five Finger Creek, and across the east fork of the Homathko. The great ice walls of Mt. Success seemed close by. Beyond, we had a new perspective on Queen Bess, Reliance, Homathko Peak, and the regions near the Homathko Icefield. Razorback's double summit stood out, but Whitesaddle and Blackhorn looked unimpressive. We considered ourselves fortunate to gaze at so many unknown valleys, glaciers, and peaks from our vantage. In one view to the west we could spot every summit of the Cataract, Tiedemann, and Waddington chains, as well as the peaks to the north. It was staggering to think of the amount of ice contained by all these sentinels.

Hail prompted us into leaving. Long rappels luckily took us down the difficult and rotten ridge in a short time. The steep snow on the angling slab required belaying and step-kicking. Lower down, we glissaded and descended a heather spur to the Royal Glacier, which we again crossed to bypass the great icefall. At 9:00 p.m. we pulled into camp, not very tired considering the length of this ascent.

On the 26th we returned to the raft-crossing camp in three hours, finding the travelling along the northwest bank of Five Finger Creek much easier. The next day we pushed across the swamps and brushy trail to the cabin of Pat, the trapper, a mile and a half north of Twist Lake. Wading in the hip-deep waters of the lake was much more pleasant than the fast water fords of the Homathko River and Granite Creek. We enjoyed Pat's generous meals, and continued to Mrs. Nicholson's ranch between Middle and Bluff lakes, where we were overwhelmed with hospitality. On August 29 we finished the last 21 miles to Tatla. Transportation and shipment delays hindered not only us, but also Magoun and King, whom we were surprised to meet in Williams Lake on September 1. We were glad to reach civilization, never repenting the thrills of our very successful ten-week expedition, only regretting that Charles Shiverick could not return with us.

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TO THE WADDINGTON AREA "THE EASY WAY"

BY NEAL M. CARTER AND W. A. DON MUNDAY

"Tho only easy way into the Waddington region is by helicopter" was the humorous advice given in July, 1947, by one of the authors to Robin Hanson who planned a trip there with Sierra Club members. The comment was made with no thought of the author being unexpectedly afforded the opportunity of demonstrating its truth a few weeks later.

On July 22, 1947, Charles Shiverick Jr., a member of a party of Harvard University students who had chosen to spend a mountaineering holiday among the peaks between the upper Tiedemann Glacier and the glaciers tributary to Scimitar Creek[1] in the Mt. Waddington area of the B. C. Coast Range, died high on a slope of 12,200-foot Mt. Serra following injuries received in a snow avalanche.

A description of that expedition, of its approach to the area from the interior of British Columbia via Williams and Tatla Lakes thence down Mosely Creek (west branch of the Homathko River) and up Scimitar Creek, details of the first ascents and other climbs accomplished, and of the accident, appear elsewhere.[2] The present account relates the role played by the authors, at the request of the deceased's family, to contact the remaining members of the Harvard party still in the region and to reach the scene of the accident for the purpose of ascertaining the feasibility of recovering the body for burial in eastern United States.

News of the accident did not reach Vancouver until some days after its occurrence, owing to the remoteness of the region from means of communication. William L. Putnam, leader of the expedition, made a forced march from the party's camp to Tatla Lake, and brief accounts in the Vancouver press gave the impression that the fatality had occurred on well-known Mt. Waddington. Only the relatively few persons who recognized the name of Mt. Serra mentioned realized that the scene lay in the eastern part of the Tiedemann Range whose pinnacled peaks almost rival that of Mt. Waddington itself in severity and height. Putnam proceeded back East without passing through Vancouver, and little further detail of the accident was known locally until early in August when Asa Shiverick arrived in Vancouver to arrange, if possible, recovery of his younger brother's body. R. M. Pidgeon, Manager of the Vancouver office of the Imperial Oil Company, collaborated in many ways by placing his office and facilities at Shiverick's disposal, and personally undertaking arrangements for much of the transportation, supplies and equipment.

Reconnaisance. (N. M. C.)

Shortly after Asa Shiverick's arrival, I was called into consultation as one of the few immediately available persons who have been in the Mt. Waddington area. Don and Phyl Munday, the pioneer explorers of the region from a mountaineering standpoint, were at the time on another expedition in the Mt. Reliance area[3] only some 30 miles east of Mt. Serra, but were incommunicado. Possibly the fact that my experience on Mt. Waddington in 1934 had been associated with a fatality[4] had some bearing on my assistance being sought. Advice from Ferris Neave of Nanaimo, B.C., who in 1934 had made a valiant attempt on Mt. Waddington via the Tiedemann Glacier below Mt.

1 See maps on page 3 and facing page 10, *Can. Alpine Journal,* 1939; also folded map facing page 42, ibid, 1948, p. 151

2 *Canadian Alpine Journal,* 1948, pp. 148–171

3 *Canadian Alpine Journal,* 1948, pp. 83–92

4 *Canadian Alpine Journal,* 1933, pp. 46–55

Serra,[5] Dr. V. C. Brink, Chairman of the Vancouver Section, and others familiar with the region, was also solicited.

Further details secured by Shiverick located the accident as having occurred on the south southeast face of Mt. Serra, high on one of the steep snow slopes above the several glaciers lying between the still steeper rocky buttresses descending from the five distinct peaks of the serrated skyline that gave rise to the name bestowed by the Mundays on the mountain. The body was known to have been temporarily secured to a rocky ledge, but its present location, and the whereabouts of at least four members of the Harvard party still in the region, were uncertain. There was some doubt as to just which gully was meant in the data supplied to Shiverick, owing to its being described as below the "highest peak." Air photos of the range taken during a supply-dropping flight prior to the arrival of the Harvard climbing party were available, but neither in these nor in earlier photos could the "highest peak" of Mt. Serra be definitely identified. It was therefore decided that I should be flown up from Vancouver to locate the remaining party, look for signs of the avalanche, take close-up air photos of the vicinity, and secure any other information possible.

A small two-seater, single-engined Luscombe seaplane piloted by George Williamson of the B.C. Airlines was chosen for the first flight, August 5. A stop was made at Forbes Landing, Vancouver Island, to re-fuel before heading directly towards the Waddington area in the afternoon. This route took us over the islands at the mouth of Bute Inlet, then straight north across the peaks bordering the western shore of the inlet until the Whitemantle and Waddington glaciers tributary to the Homathko River came in sight soon after we passed beyond the head of the inlet. Here the topography began to sort itself out for me, for although I had approached Mt. Waddington in 1934 from the Franklin Glacier above the head of Knight Inlet to the west, I had seen these glaciers and peaks to the east and knew them from the Mundays' map and photos.

We climbed to 10,000 feet in the manoeuvrable little plane to clear the Marcus Smith group, and immediately I got my first view of the huge Tiedemann Glacier 6,000 feet directly below. Only the Secord-Neave party (1934) had ever travelled its length. We skimmed up it in a few minutes, took a few snaps of Mt. Serra, then headed over a tributary icefall to look for signs of the Harvard party's camp on the névé of the Tellot Glacier to the north. We had with us a supply of red streamers each with a weighted pouch in which was placed a mimeographed message asking several questions that could be answered through code signals by any party we could see on the glacier or elsewhere.

We did see some green tents at about 10,000 feet on the Tellot névé, surrounded by many tracks some of which led off towards various nearby peaks, also we located above the Cataract Glacier what looked to be the walls of a snow "fort." But there were no signs of persons at either place, nor could we discern any climbers on any of the tracks which we followed up to where they disappeared on rock. So we dropped several streamers in the vicinity of the camps, then set off to look for the base camp reported to be on the bank of Scimitar Creek where it is joined by the stream from the Cataract Glacier.

The plane was certainly manoeuvrable. George did everything but fly upside down while zooming between rocky pinnacles and down over icefalls into the valley of Scimitar Creek. We did figures-of-eight to conduct a search for signs of smoke or a camp in the narrow, mountain-walled valley, almost brushing the trees at each loop. Finally we discerned three figures running out of the trees onto a gravel bar, so dropped a number of streamers. Not having taken any course in

5 Ibid., pp 53–45

aerial bombing, my aim was none too good and some fell across the creek, one into it. But we saw at least one recovered. Then, since it was getting late and our gas was low, we headed northeast up Moseley Creek to Tatla Lake to get more gas and to spend an hour or so to give the party at Scimitar Creek time to prepare the code replies.

Swinging back towards the forbidding glaciated ranges after the heat and parched vegetation of the interior was like re-entering the ice age. The contrast was much greater than when approaching the area from the coast. We headed straight for the base camp, where we did low figures-of-eight to read the codes, then spiralled up to skim over the Tellot névé to see if anyone had noticed our other streamers. They were still untouched. Another look at Mt. Serra in the growing dusk, and we raced against darkness down Bute Inlet and over to Vancouver Island to arrive again at Forbes Landing at about 10:00 p.m. We telephoned our information to Vancouver and were advised to make another trip to the mountains next morning since the answers to the questionnaire were slightly ambiguous and it was desired to locate some members of the party that were reportedly camping in Pocket Valley at the foot of the Parallel Glacier.

The morning of August 6 saw us again over the glaciers. After dropping new questions at the base camp we explored the Scimitar and Parallel Glaciers without seeing any party. The latter glacier was named for its relation to the Scimitar Glacier, but the name is more apt than was intended, since both glaciers bore the most striking examples of slightly curved, parallel and regularly-spaced Forbes' dirt bands stretching across their width. We saw a snow trail leading up the névé of the Parallel Glacier towards a pass above the Bell Glacier, and near the top of the pass thought we could discern a man kicking steps. It took three flights through the narrow pass to satisfy us it was only a goat bent on business elsewhere; but the exciting circuits around Mt. Geddes provided some interesting views of little-known peaks and glaciers in the northwestern part of the area. Lowering clouds and occasional rain hastened our departure for Vancouver.

Conferences in Vancouver followed these two flights, and it was decided to parachute two "handie-talkies" to a group of the Harvard party who had been instructed by streamer message to descend from the high camp on the Tellot Glacier to the Tiedemann Glacier for purposes of reconnoitering a feasible route for bringing the body down the south face of Mt. Serra. George made solo flights to drop food (without benefit of parachute) at a suitable place at about 6,000 feet on the glacier, and a sketch of the depot was delivered to the party up above by streamer message.

A few days later George and I flew direct from Vancouver (about two and a quarter hours) to throw out the handie-talkies kindly loaned by the R.C.A.F. Packed in a large sack, it was quite a trick to get them through the window of the door beside me, and I got a taste of what George must have experienced while flying alone at 10,000-11,000 feet in the frigid upper air with the door of the plane removed so that he could push out the bundles of food while with one foot keeping the plane from grazing the ice of Waddington or the rocks of Serra. I poked my head out of the window in time to see the R.C.A.F. orange parachute belly out and hoped the instruments would still "talk." But we knew from previous experience at the Vancouver airport that we could not pick up any message from below with either a "walkie-talkie" or the radio equipment in this plane. So after acknowledging a signal "GAS" set out in the snow by the party implying they needed more fuel for their gasoline stoves in this fuelless icy fastness, we took a close-up vertical panorama of the fatal snow slope and subsequent glacier on Mt. Serra. This was accomplished by a hair-raising tight descending spiral from top to bottom almost within the gully, with a photo at each close approach when we seemed to be about to knock off the projecting pinnacles of the buttresses on either side.

Air View Of Top-Ranking Peaks Of Coast Range. *Photo N.M. Carter.*

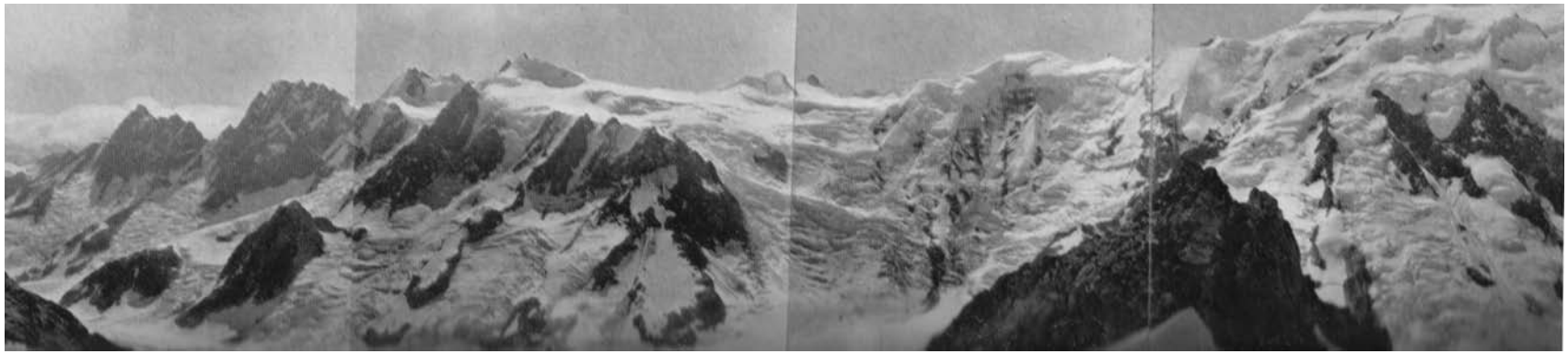
Square Marks Site Of Tiedemann Glacier Camp. Circle Marks Scene Of Burial On Mt. Serra.

Helicopter Landing On Tiedemann Glacier. *Photo Don Munday.*

Camp On Tiedemann Glacier Below Mt. Waddington. *Photo Don Munday.*

MT. MUNDAY ARABESQUE PEAKS SPEARMAN PEAK MT. WADDINGTON (13,260 FEET) MT. COMBATANT MT. ASPERITY MT. SERRA

MT. MARCUS SMITH GROUP SPLENDOR GLACIER MT. MUNDAY (11,500 FEET)



I was back in my office in Vancouver before closing time, having left only a little before noon.

My next flight was in a large U.S. Army two-engined plane brought up from Seattle for the purpose of securing two-way communication between it and the handie-talkies below. This was a much more "official" trip, but nevertheless involved some spectacular flying. To obtain fleeting periods of good reception, it was necessary to pass over the party on Tiedemann Glacier five times, each trip necessitating a complete circuit of the Tiedemann Range, incidentally passing over the Combatant-Waddington Col level with the stupendous hanging glaciers on the north face of the Waddington Massif. On one of these circuits a can of gasoline, a rubber-cased stretcher, rope and other sundries were parachuted through the open cargo door. On our return, for some reason the pilots decided to fly down the valley of the Homathko River, and close down at that. Following every bend, even through the tortuous Waddington Canyon, it seemed no place for so large a plane. Several times I looked out of one blister window and saw trees whizzing by close to the wing tips; rushing over to an opposite window, the trees or rocks seemed equally close!

It now appeared that Shiverick desired someone to go into the area and make actual ground contact with the remaining members of the Harvard group. Code answers to streamer messages, snatches of sentences from the handie-talkies, and telegraphic English stamped out on the snow were all somewhat inadequate when it came to ascertaining whether it was feasible to follow a plan developed in Vancouver for bringing the body down to the Tiedemann Glacier to be picked up by helicopter. We still did not know the exact position of the body, which we now learned had not been moved since the day of the accident, although we heard from a member of the party who had come to Vancouver that it was in the gully we had last photographed and was higher and more inaccessible than we had expected. Don Munday had by this time arrived in Vancouver after his trip in the Mt. Reliance area.

Consequently, I was sent on one more flight with George, to drop a message to the Tiedemann Glacier temporary camp stating that two members of the Alpine Club of Canada would be flown by seaplane from Vancouver to the head of the Bute Inlet, thence by helicopter to the lower Tiedemann Glacier on August 15, and would proceed to that camp to take charge of operations. While delivering the message, I threw out the current day's newspaper attached to a coil of rope. George let the plane glide with engine off to within 15 feet of the group standing on the snow outside the tents, and the paper rolled literally to the feet of one of the party. Had it not been for the fact that we had been reading the paper spread out before us in the cockpit on our way up the coast as the plane flew itself, I would have been tempted to collect later the usual paper delivery charge.

On the return flight, I looked disconsolately at the long Tiedemann Glacier Don Munday and I would be treading underfoot in a few days with no prospect of being home each night after an "afternoon trip to Mt. Waddington."

At 7:00 p.m. on August 14 Don and I took off with Asa Shiverick from Vancouver for the head of Bute Inlet in a Queen Charlotte Airlines plane piloted by Capt. Art Barran. One of those strange contraptions known as a helicopter or "egg-beater" which had flown up from Seattle piloted by Vernon Montgomery and Carl Brady, also George with his Luscombe, were already there when we landed in a tidal backwater near the mouth of the Homathko River. We all took possession of an abandoned Indian house which became known at "headquarters" and where we spent the night.

To the Tiedemann Glacier by Helicopter (W. A. D. M.)

We looked anxiously at heavily clouded peaks before breakfast Friday morning. Shiverick prepared most of that meal and won our admiration for his dexterity in breaking an egg into the frypan with one hand. In spite of the smoke cloud from the fire on an earthern platform in the

middle of the floor the atmosphere of the old house still droned with too many mosquitoes with a marked preference for breakfasting on mountaineers.

Clouds seemed to be fewer and at a higher level up Homathko Valley, and the mounting sun was scattering them a good deal by the time I climbed into the red-and-silver two-seater plane with George. The helicopter, piloted by Vernon Montgomery and carrying Neal, took off a few minutes later and proved the faster of the two machines at climbing.

As Neal had by now made five flights over Tiedemann Glacier it was thought he was more competent to pick a landing site on it for the helicopter. The maximum height for a landing had been set at 3,800 feet with one passenger and his pack (though we remain unconvinced that it could not have been done at a higher elevation). We were assured that a helicopter had not landed on a glacier before, and aerial escort for the helicopter was demanded by its pilot during its flight. As a consequence Neal's confidence in the safety of the venture was none too complete.

I looked down on the muddy, tortuous Homathko River for landmarks of my 1926 trip when making the earliest exploration of what had been popularly named "Mystery Mountain" — for the official name of Mt. Waddington only ousted it years later. Four miles up the river the great log jam, which had existed at least as early as 1862, was gone now — perhaps torn out during logging operations in the lower valley.

At Whirlpool Corner I could not detect the twin whirlpools which used to usurp the whole channel. My wife and I had applied the name without knowing it had been so named in the 1890's when an attempt was made to plant a settlement at the head of Bute Inlet.

Beyond this I could not note important changes in such of the braided channels as we travelled or saw them in 1926. We flew at about 4,500 feet, high enough to dispel some of the secretiveness of the valleys of the great glacial creeks which form such troublesome obstacles to travel in the valley in summer.

To eastward under slanting sunshine Heakamie Glacier was a splendid sight. It is perhaps the biggest dissipator of the immense Homathko Snowfield, and in 1920 ended 400 feet above sea level though now apparently thawed back. Its stream meets the one from Jewakwa Glacier which lurked partly hidden in a curving gorge. The ice of the latter glacier seemed much riven.

When Alfred Waddington was building his road to the Cariboo through Homathko valley in the early 1860's, Heakamie Glacier was "Waddington's Glacier," but the present Waddington Glacier (14 miles long) is up Coula Creek on the west side of the river.

I looked vainly for any trace of Waddington's road in Waddington Canyon, but it was merely a ledge blasted out of the face of perpendicular cliffs, and would not be visible to us flying directly overhead. This box canyon is a mile and a quarter long. Beyond this the rock bluffs do not seem to run down to the river's edge on both sides at once. Here we swerved away from the river to follow a secondary valley, broadish and well-wooded, and probably 1,000 to 2,000 feet higher than the river which it parallels on the west. Tiedemann Glacier crossed this old valley and thrust a small lobe into it both north and south. One of the several lakes in this valley is glacial green. Beyond Tellot Creek we sighted part of another unmapped lake probably over a mile long, which Neal and George had inspected as a possible landing base for the seaplane on previous flights.

"Too much cloud over Tellot Glacier," shouted George. He had hoped to fly me over the high camp of the Harvard climbers. Waddington was nearly clear but the opposing Tiedemann Group soared into sullen mists. Tiedemann Glacier is about 16 miles long. I was relieved to see that it apparently offered little obstacle to travel other than its mere length.

George scribbled a message to drop on the Harvard party's camp on upper Tiedemann Glacier: "Two men on lower glacier. Will try to reach your camp tonight." I thrust it into a pocket in the gravel-weighted end of a red streamer. We swept in close to the rock and bulging ice-cliffs of Bravo Peak (eastern outlier of Waddington) before banking for a dive to within a few feet of the lone tent on a moraine opposite the base of Mt. Serra. We saw only two climbers — we had expected to see four.

Returning down the glacier we watched closely for Neal who by this time had been landed on the glacier by the helicopter. When we sighted him waving a ground sheet, George dived straight at him to give him a chance for a photograph with Waddington as a background, but Neal playfully threw himself flat on the ice as if to avoid being knocked down. We soon overtook the helicopter. Weather was much improved by the time we landed at the river mouth, ready for my "lift" by helicopter.

Weeds and bushes flattened under the blast of air as the machine rose vertically to clear the trees near by. The rotor blades made a silver halo overhead. The whole front of the machine was transparent except for a narrow instrument panel, and this gave one a feeling of being very much out in space. One also had to become accustomed to the slightly disconcerting forward tilt of the helicopter in flight.

Carl Brady was pilot on this flight, so I had to direct him. Only to the trained eye do the final two miles of Tiedemann Glacier reveal that ice underlies its hummocks of moraine. Carl evidently knew no more about mountaineering than I did about flying, for he looked at this desert and remarked " I suppose the glacier covers all that in the winter."

Bright garments have more practical value in the mountains than merely delighting the user of color film. Neal in neutral-colored clothes was not at once obvious although he had moved out onto clear ice. I am sure he did not suspect what a bold and imperious figure he looked when we hovered at the level of his head and only a few feet distant while he signalled precisely where to set the throbbing oddity down among the minor hummocks of ice. He had arranged the larger rock fragments in a line to mark the landing field. A slight bump and lurch on the baby wheels and we were at rest. Neal must have felt — until I arrived — more alone than he had ever been in the mountains.

"Suppose I take your packs up the glacier a bit," suggested Carl, who was properly pleased with the success of the venture. I agreed, though too often I have suffered in the mountains by consenting to separate from my pack. Neal had wise misgivings but kept them to himself unfortunately.

Carl disappeared behind a moraine-laden ridge, and we felt sure we knew the general location. About this time I realized my climbing boots must still be at the river mouth. Fortunately Carl landed beside us again, so we sent word to George who was scheduled to make another flight to drop grub at the Tiedemann camp. I was now wearing a pair of light rubber-soled shoes.

Carrying nothing but cameras and ice-axes Neal and I set off up the glacier confidently. We were headed into an area liberally dotted with brown rocks. Uncounted numbers of them at a little distance looked like our packs. My corded rubber soles gave remarkably good footing on the ice — they needed to, for we spent a long time skirting crevasses or hopping them.

Hours of search passed by. Then George sped overhead, bound up the glacier to drop food. We felt intense frustration at being unable to indicate our real predicament. He doubtless thought we were merely waiting for my boots, and on his return flight they dropped out of the sky decked with long streamers of gorgeous red ribbon. Our systematic search went on for nearly three

and a half hours, and we had agreed that the only course to follow would be to head for the Harvard camp where there would at least be food, fuel and shelter. Five minutes before the time set to end our search, Neal gave an exultant shout. So we had a welcome lunch before shouldering our packs about 4:00 p.m.

The glacier rises gently, averaging only about 200 feet to the mile. At first we used Whymper Dome (1) for a marker to gauge our progress. Below the Claw Peaks the glacier changes direction slightly (not shown on my sketch map) and there is also a small "step" which helped to hide our objective. Weight of our packs and the dwindling daylight persuaded us to cut this angle. It resulted in an unpleasant hour amid a system of crisscrossing crevasses poorly bridged if at all.

Our immediate objective now became a curious morainal area quite unrelated to the many medial moraines which appear many miles below. It looks like the terminal moraines of a glacier which in relatively recent times has begun to discharge on top of the trunk glacier, but this is to be taken as descriptive rather than explanatory. The Harvard camp lay beyond this at a place where it tapered somewhat abruptly to two narrow ridges of moraine.

We had hoped to see a couple of climbers strolling down the glacier to meet us — as we would have done under like circumstances. Our occasional shouts brought no answer. In the increasing gloom one might be within 50 feet of the camp without detecting the dark little tents. We stumbled along until about 9:30, then agreed to retreat to the lee of a big rock to save pitching our tent for protection against the frosty wind. We ate a cold supper, using the little army cooker solely for heating drinks.

Morning revealed a small stick flying red streamers 300 yards up the moraine. I tramped up and was amazed to find the Harvard climbers had evacuated the camp!

A note in the cache of food informed us that Francis P. ("Maggie") Magoun III and Graham Mathews had left about midday of the day before to Join their companions Fred Beckey and Harry King who had left a day earlier for Tellot Glacier to recover supplies dropped there before a possible storm buried them.

We moved our stuff up and pitched our tent. Great quantities of food had been dropped from the air in expectation that the combined party would be operating from this base. Damage in some instances had been freakish, for food in paper, cardboard and tins had been placed in the same bundles.

George was due this evening to drop still more food and to get a report from us. Our original plans called for a climb today of nearly 5,000 feet up one of the wild Serra glaciers to decide the possibility of bringing Shiverick's body down to Tiedemann Glacier for transportation to the helicopter landing. Falling rocks might have turned us back on the upper section of the climb, but in any event it transpired later that we had not been given the right location of the body. Besides, Neal's boots were literally falling to pieces.

At least one of the handie-talkies dropped at, this camp for communication with the army plane had been intended to be left here, but our predecessors had taken it also in spite of there being another already up on Tellot Glacier. We spelled out a message (with rocks, red streamers, and strips torn from cardboard cartons) in the snow to our aerial guardian in utmost confidence that before long another pair of boots would drop from out of the sky.

It seems safe to suggest that no valley on the continent south of the Alaskan Range rivals the wild magnificence of the snow and ice scenery of Tiedemann Glacier. The southerly flank of the Tiedemann Group (mostly peaks from 12,000 to possibly 13,000 feet) is not notable for the amount of ice, but the gashes between the splintered granite buttresses are not simple snow-filled

gullies. Each carries a steep formidable glacier for almost its full length. From the high col at the head of Tiedemann Glacier the whole wall of Waddington is guarded by the upper ice-cliffs. A short, broad, important branch glacier emerges from the gleaming cirque formed by Bravo, Spearman and Arabesque Peaks and a shoulder of Mt. Munday. It is fed wholly by ice-cliffs and icefalls.

Then for about two miles in length, and 5,000 feet in height, the icy armor of Mt. Munday yields little, if at all, in grandeur to the face of Waddington above Scimitar Glacier. Eastward in another huge alcove Splendor Glacier precipitates its great bulk in a shining ruin from the sky line. Still further eastward the shapely Marcus Smith group varies the pattern by lifting black spears above nearly bare walls, but is heaped up to mid-height with glaciers displaying the same typical urgency to merge themselves in the contrasting quiet of the trunk glacier below.

During our stay on Tiedemann Glacier big ice-avalanches from Waddington and Munday fell night and day, just as I had noted when with Henry Hall's 1933 party up Scimitar Glacier. The conclusion is that they result from movement of the glaciers more than daytime thawing.

George Williamson certainly cannot comprehend just how much his appearance in the sky always meant to us. He dropped us two more food parcels. Pilot bread and rye biscuits were pulverized in spite of an outer sack filled with fresh-cut Homathko hay. We almost hated raspberry jam — the friction top had blown off a four-pound tin, smearing everything else with jam, but the hay in sacks after sun-drying made good mattresses. We now had about 100 chocolate bars, 82 jellies and puddings of a brand then nearly impossible for housewives to get, and countless packets of soup. Several gallons of fuel remained in the army gasoline container. Neal marvelled at its badly battered condition, since he had seen it commence to parachute down. (The Harvard group told us later that it had broken away from the parachute and landed on the rocks.) We could easily outlast a considerable period of bad weather.

Over Serra-Stiletto Col and Back (N.M.C.)

The morning of the 17th dawned propitiously. Don and I packed our sleeping bags, a day's food and a minimum of equipment and crossed the few hundred yards of glacier to a snowpatch on the lower slopes of the Claw Peaks. A rough sketch left by Magoun at our campsite indicated their route over these peaks to the Tellot névé, and we had just found their trail in the snow when we heard George buzzing up the valley on his daily inspection trip from the "headquarters" cabin. He circled around our tent, then spotting us on the snow dived at the slope and dropped the boots I needed. They hit the ice just at the edge of the glacier and I watched breathlessly as they rolled almost into a crevasse, shedding two loaves of bread en route. Don ran down to see if there was any note and I suggested he park the boots, for with my crampons which I presumed I would be wearing until we got back to camp, my old boots (with the front of the sole held on by wire) would suffice.

Trudging upward, we found the trail a useful help and guide. Mists above us kept evaporating, and only once did we catch up with them. Inside a big wind cirque at about 8,000 feet we stopped for a bite to eat and secured lovely panoramic shots of the almost uninterrupted series of ice-clad peaks across the Tiedemann Glacier, from Mt. Waddington to the eastern end of the Marcus Smith group. We melted snow in the brim of our hats to wash down our rye biscuit, and continued on. At last we came to a skyline and found a mile-wide, almost flat snowfield in front of us, with gentle slopes beyond leading up to the still-hidden camp. Tracks showed that some of the nearby higher summits of the Claw Peaks had been climbed, and Don recognized, over a mile to the north across the Tellot névé, a rocky outcrop he had reached via the Cataract Glacier in 1933. This was new ground not only for myself, but even for Don.

A long hot grind over the snowfield and across a few crevasses in the steeper snow brought us to a sort of snow plateau near the base of Mt. Tellot where we spied two tents in a hollow below us. Figures emerged in response to our shouts, and we read with amusement the various signs stamped out in the snow for the benefit of passing planes — "Welcome to Camp Glocca Morra," "City Limits" and a huge "Bovril" sign stamped out on a steep slope above a yawning bergschrund used for underlining.

We found ourselves the guests of Beckey, Magoun, Mathews and King. The setting sun threw a shadow over the camp about the time of our arrival, and at this altitude of slightly over 10,000 feet a chill set in that soon induced us to crawl into the already crowded tents. During supper many interesting topographical notes were compared, after which a discussion of our mission took place and several gaps in our information were closed. It was decided that on the following day the scene of the accident would be visited. Our start on the morning of the 18th was delayed by appearance of the first vanguard of a Sierra Club expedition back-packing up from a lower camp on the Cataract Glacier, and threatening clouds began to swirl about the Serra Peaks. Crampon-shod and with Beckey leading, Magoun, Mathews, Don and I headed up the snow trail to the 10,500-foot Stiletto-Serra col. Stiletto reared up almost vertically on our left and had evidently presented an as yet unsolved challenge to the rock climbers of the Harvard party. Don and I felt arising; within us the old urge to make a first ascent somewhere in this striking group of peaks just above us; but ours was not a mountaineering holiday, though this trip called for some careful mountaineering technique. We descended a short distance down the snow gully on the south (Tiedemann) side of the col. From here we had to traverse, belayed and roped, across several hard, hanging snow patches to a gap in the arête of the buttress descending from the most easterly peak of Serra; during this traverse we were in a position rather exposed to falling rocks and ice from the cliffs above. Once the gap was reached, we descended about 300 feet down a steep icy couloir using a fixed rope about 100 feet long to save time.

Here we crawled out onto the point of rock between the couloir and the edge of a steep snow slope where the avalanche had occurred. It is not the purpose of this article to recount the details of the accident; but standing here we could appreciate that considering the stress of the occasion and the injured condition of the three survivors, everything that could have been done had been done during the interval immediately following it. Shiverick's body lay tied on a narrow ledge just below us, and a final consultation was held in the light of our now complete survey of the various routes by which the body might be brought to means of transport. With the equipment and personnel immediately available, it was not feasible to attempt any of three previously discussed routes, and it was evident that to reach helicopter transportation on the Tiedemann Glacier or horses at the base camp on Scimitar Creek, elaborate organization with, at times, considerable personal risk to the participants would be necessary.

Despite the repeated suggestions of the Harvard party that the removal should be via Tellot and Cataract glaciers and the Scimitar Valley base camp, we were aware of certain limitations to their plan, and we were convinced that if the body could have safely been brought to the Serra-Stiletto col that helicopter removal via Tiedemann Glacier was evidently the more feasible route.

Asa Shiverick had placed with myself and Don the responsibility of making a decision, and we two now concurred that a proper course would be to perform a suitable interment here in the snow immediately below where the body lay at about 10,000 feet elevation, to protect it until our action could be reported, or to serve as a permanent resting place should the family consent to follow the example necessitated in the earlier fatality in this region. The interment was fittingly

performed by Shiverick's climbing companions with us, and just as I made the simple prayer said thirteen years earlier on the far side of Mt. Waddington which was visible across the valley from where we stood, flakes began to fall as though to smooth over the disturbed snow. I took a photo to mark the spot. Since no lasting site for a cairn could be found at this point of rock subjected to falling rocks and icicles from above, we turned to the ascent of the couloir and erected a suitable cairn in the more stable gap at its top. This cairn was photographed in the snowstorm that had by now developed.

Back at the Tellot névé we found more of the Sierra party had arrived and established a four-tent camp on the snow plateau below Mt. Tellot. Greetings were exchanged. "So you came in 'The easy way'!" was Robin Hanson's greeting to Don, who did not for a moment recall having written to Hanson jokingly suggesting using a helicopter to get into the region. We then proceeded to the Harvard camp just below.

Before Don and I packed up, the intermittent snow and sun was superseded by a thick fog and about 5:00 p.m. we entered it for the descent over the Claw Peaks. Before reaching these, however, the fog cleared and we stamped out a message on the névé signifying our return, should George fly over. Before we reached my cached boots at the edge of the Tiedemann Glacier the snow had commenced again and the glacier valley was lined with darkening clouds interspersed with pockets of peculiar luminescent blue in the ice-filled cirques below Mt. Munday.

Just before we retired a tremendous ice avalanche slid off the north face of Waddington into the cloud-filled Com-batant-Waddington Col and great volumes of ice powder billowed majestically from below the clouds until we wondered whether it could stop short of our little tent on the exposed moraine out on the glacier. Actually it was over two miles away. That night it snowed so heavily that we had to use an ice-axe prop and a cross brace to keep the walls of the tent from squeezing us out, and our prospects of a speedy return to report at Bute Inlet dwindled. We had food for over a month with several chocolate bars left over, but didn't wish to employ it and our time battling on foot down the canyons and meanders of the Homathko Valley to Bute Inlet. There had been no sign of George in the sky during the day.

The morning of the 19th promised fair however, and after excavating some food and utensils from under the snow that had covered our rocky dining-sitting room, we ate sufficient breakfast to give us energy to stamp out a long message in the fresh snow beside our camp. The letters were easy to make and we made them big; the message was an important one and included plans for the pick-up by helicopter some nine miles down the glacier. But George didn't come and our nice letters began to melt and had to be re-stamped all over again.

Finally we heard the familiar drone of the plane just before dusk. Shadows from Mt. Waddington had crept over our message and judging from the plain and fancy flying George was doing, he was having difficulty in reading it. He dropped a streamer asking us to lay out an "X" if his hastily-scribbled interpretation of our text was approximately correct. It was, but an answer was still required. Another swoop of the plane at us, and we saw him throw out an answer. It caught in a strut of the pontoon and fluttered there gaily while our hearts sank as we watched him winging down the valley into the gathering gloom. However, he had seen what had happened, and was merely flying straightaway while he wrote a repeat reply. On his return he glided very close over us and threw out a small object wrapped in paper. The paper fell off in mid-air but when recovered gave us our desired answer which was prefaced by "Damn cold." On searching in the snow for the solid object, we found it a few paces farther on and of all things — another chocolate

bar! (Later, we learned it was the only thing he could find in the cockpit to serve as a weight). A waggle of wings and he was off down the glacier and we to bed.

The Return (W. A. D. M.)

A cloudless sky cheered us on the morning of August 20. The moraine was frozen like concrete and the snow nearly as hard. When we had tramped about a mile down the glacier the faithful George appeared, apparently only checking up on our progress as he merely waggled his wings and went away. We kept pretty well to the centre line of the glacier, and crevasses rarely turned us aside any distance. We appreciated this as we were playing safe, weighed with food for several days as well as all our equipment.

We reached the helicopter landing just past noon, having travelled four and a quarter hours. But as we had told George to allow six hours for this trip, we did not expect the helicopter before 1:45 p.m. A big stream pouring into a "mill" kept deceiving us into thinking we heard the plane and helicopter coming, and they were in sight before we believed our ears. A segment of parachute now glowed as an orange beacon to guide the helicopter unerringly to us.

Montgomery surely thought Neal and I overly cautious when we both made sure all food and camping equipment remained on the glacier with me when Neal boarded the helicopter. A ceiling of grey cloud slid across half the sky and at once needles of ice thrust across pockets of still water on the glacier. It was the first time 1 ever knew the meaning of real loneliness in the mountains, this in spite of slaking a twenty-one-year-old desire to visit the grandest valley leading into the heart of the grandest group of peaks in the Coast Range.

Brady came for me at the stated time, and once more that quivering silver halo overhead bore us too swiftly past the bold shoulders of the remembered mountains along the Homathko. At the river mouth Asa Shiverick evidently felt disappointed that plans to bring out his brother's body had been fruitless.

The camp stirred with preparations for departure. First the helicopter with pilots Montgomery and Brady for Seattle by way of Vancouver air port. Then Neal and I in the Nimpkish Queen of the Queen Charlotte Airlines, piloted by Andy Anderson who seemed an old friend. George would leave last with Shiverick for Vancouver Island.

As we swept round over the Fraser River delta for a down-stream landing on a river channel I wondered if the farmers ever guessed how beautiful farmlands at harvest time look from the air. Best of all, our wives — and Neal's sons and daughter — waited at the landing stage. It seemed a trifle fantastic that in twelve hours of elapsed time, and six hours' travelling (over four of that on foot), we had come from the base of Mt. Waddington. Hereafter the helicopter must be counted as a valuable adjunct to mountaineering in regions so hard for low-level travel as the Coast Range.

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THE ARTHUR 0. WHEELER HUT

BY MAJOR F. V. LONGSTAFF

This hut was formally opened at the 1947 camp at Glacier on Sunday afternoon, July 20. It was a glorious day, bright, sunny and warm. The president, Mr. Eric C. Brooks, presided and the club was honored by the presence of Sir Oliver Wheeler, lately returned from India, and Lady Dorthea, as special guests. Mrs. Arthur O. Wheeler sent a letter expressing her regrets at being unable to attend. The club was favored with the attendance of a special Canadian Pacific Railway representative from Winnipeg and the club's old friends, the three senior Swiss guides, Edward and Ernest Feuz and Rudolf Aemmer. There were no climbs or parties scheduled for the day and the hundred and forty members in camp were in attendance seated on the rocks, logs, stumps and the forest floor in front of the hut.

The president intimated that the idea of the hut originated with H. E. Sampson, whom he requested to give the story of the hut. Mr. Sampson did so at length, telling that when he had first visited the Stanley H. Mitchell Hut in the Little Yoho he had been very impressed with that hut, built in honor of the club's longtime secretary Stanley H. Mitchell. Since the club had already honored one of its founders in the Elizabeth Parker hut at Lake O'Hara, he thought the time had come to do honor to its other outstanding founder, Arthur O. Wheeler. It seemed fitting that a hut should be erected during his lifetime in the Selkirks which he loved so dearly and where he had spent so many summers. Therefore, Mr. Sampson wrote to the president, Mr. Cyril G. Wates, suggesting that a new hut, to be called the Arthur O. Wheeler Hut, be erected in the Selkirks near Glacier. The idea appealed to Mr. Wates, who submitted it to the Management Committee, who in turn approved. The president then requested Mr. Sampson to evolve a plan for the erection of such hut. He duly did so, after obtaining Mr. Wheeler's somewhat diffident consent to the naming after him of a hut to be erected at Glacier.

The first question to be settled was of what material the hut should be built and, after due consideration, it was decided that a log hut of the type of the Stanley H. Mitchell Hut was the most appropriate. Mr. A. A. McCoubrey of Winnipeg, who had prepared the plans for the Stanley H. Mitchell Hut, kindly prepared the plans which were carried out in the building of the new hut.

The best site for the hut was a matter of some concern. As there was no timber available in the immediate district, it was suggested that the hut might be built of the old timbers still available from the old snowsheds and that a suitable site might be obtained near the old right of way leading from Glacier House to Rogers Pass, which might be free of the ever present danger of avalanches. At the 1941 camp at Glacier a tentative site was selected on the east side of the old right of way about one hundred yards north of Cascade Creek, which site seemed to be free of the danger of avalanches but was not completely satisfactory. The question of where to get the timber was still unsettled and inquiries were made to see if the logs could be obtained from the Golden district. This problem was taken up with the Parks Department and through the kind offices of Mr. G. F. Horsey, the Park Superintendent, permission was obtained to cut the logs necessary for the building of the hut in the park adjacent to the road leading from Glacier to Cougar Valley.

In the meantime funds wherewith to build the hut were being collected, but in wartime it was difficult to arrange for building.

It was decided at the 1945 camp that the best site was that finally selected. A Banff outfitter, however, had a lease on this site from the Parks Department at a nominal rental and owned a building,

The Arthur O. Wheeler Hut.
Photos F. V. Longstaff.

the old red section house, thereon. Arrangements were made to take over his lease and to pay him for the building and his lease. In August 1945, Mr. Sampson made a satisfactory arrangement with the outfitter and the Parks Department. Then he and the contractor, Hobart Dowler, a club member, looked over the ground and determined where the hut should be built.

The hut is situated on the triangle between the old railroad right of way leading north to Rogers Pass and the Cave Road leading down to the village, the base of the triangle being Cascade Creek as it hurries on its way to join the Illecillewaet. It is well elevated above the road, is free of the danger of avalanches and from it there is a commanding view of the Illecillewaet Valley to the south and of Asulkan Pass to the southwest.

The contractor proceeded to build forthwith, arranged for teams from Revelstoke and cut and trimmed the necessary logs near the road leading to the Cougar Valley. The work was proceeding nicely when, although the Parks Department had granted its permission, out of the blue an order came from the Construction Controller at Ottawa that the building must cease. This order was revoked in about a month but much delay and extra expense were occasioned and it was not until late in 1946 that the hut was finally completed.

The formal opening of the hut had been thought an appropriate time to recognize in some way the splendid work of the Swiss guides who over the years had been kindly loaned by the Canadian Pacific Railway for the annual camps and who had endeared themselves to the club members. Each of them was presented with an illuminated certificate of life membership in the club, Sir Oliver making the presentation and speaking very highly of the work of the guides. The club's Honorary Treasurer, Mr. R. J. Cuthbertson, then presented each guide with a cheque for $200.00, half of which was donated by an anonymous club member.

The president then formally declared the hut open for the use of the members of the Alpine Club of Canada and their friends.

The club members then visited and inspected the log hut and found it to be exceedingly well built, the outside measurements being 26 feet wide by 33 feet long, with eaves to 10 feet high with a 45° pitch and the roof covered with cedar shakes hand-made on the ground. Inside are a living room 14 feet by 24 feet, beautified by a great stone fireplace, the gift of the estate of M. Helen Smith, an old-time member of the club and a great lover of Glacier; a ladies' room 14 feet by 17 feet to accommodate eight; a kitchen 11 feet by 17 feet with a fine range and a full complement of dishes. There is sleeping accommodation for twenty men upstairs. The hut is furnished with steel beds, mattresses and sleeping- bags. Pure water is found in Cascade Creek nearby and at night the members are lulled to sleep by the babbling waters of the Illecillewaet as it starts on its long trek to the Pacific.

The general opinion is that the members will make great use of the hut and that it will to a large extent take the place of the old Glacier House, demolished about 1929, and that the nostalgia felt by the old-time members as they look across from the hut and think of old Glacier House and its charming hostess, Mrs. J. M. Young will gradually dissipate.

HISTORICAL NOTES ON GLACIER HOUSE

BY MAJOR F. V. LONGSTAFF

Glacier House Hotel was the first hotel to be opened in the Selkirks and the first mountaineering centre in Canada. It was opened in January 1887, and was closed finally on October 15, 1925. The old hotel consisted of three parts, the square original building including the dining-room, kitchen and reception office, the long thin annex and up the slope the new wing built in 1906 with fifty-four rooms, baths, radiators and an elevator. There were ninety rooms altogether.

The first manager of Glacier House Hotel was Mr. H. A. Perley. After his retirement, the management was taken over by Miss Annie Mollison. In a recent letter her surviving sister, Miss Jean Mollison, writes: "You ask who took over the management of Glacier House from Mr. Perley, it was my sister Annie. She was the manageress of the Mount Stephen House at Field, when Mr. James Sheffield wired her to go at once and take over Glacier House, as it was a more important tourist place than Field. My sister after a few years had to give up Glacier House on account of poor health—heart trouble—and Mrs. Young was sent to relieve her."

Mrs. Julia Mary Young of Montreal, took over the management in 1893 and in her capable hands it rose to the height of its glory, entertaining a host of famous mountaineers and mountain lovers. Mrs. Young, as a Miss Hill was born in Montreal in 1853. She married a Mr. Young, who died in 1891. Mrs. Young retired from Glacier in 1920, and spent her retirement at the Empress Hotel, Victoria. She died on April 25, 1925. For many years she was assisted by Miss McGibbon, who was well known to many old-time visitors. She ruled the staff strictly but kindly, and had charge of the Record or Log Book of climbs, wherein mountaineers entered their climbs. (This record along with a colored plaster cast model of the mountains and valleys made by Mr. Bell-Smith has disappeared.)

The head-waiter known so well to many guests was Mr. Wales, and the handy man or carpenter and plumber was Mr. George Ball, who worked there during the seasons 1909 to 1925. The famous Chinese cook was Charley Lee. The horsepacker, who was a fine photographer, was Mr. Sydney H. Baker of England. He had worked with Wilson and Campbell, guides at Field and trapped and hunted with James Simpson before he bought the business at Glacier. He had a store in the hotel grounds where he sold photographs, and souvenirs and he kept horses for saddle and packwork. Although he left Glacier in 1920, Mrs. Baker kept the store until 1926.

Proof that Glacier House and its surrounding mountains, waterfalls, glaciers, trails, forests, flowers and streams had a special attraction for guests lies in the fact that their names appear year after year in the Visitors' Books.[1] These four registers, some of which the writer has had in his hands, are a mine of information. The first entry is Mr. John Bright of Grantham, England, in January, 1887; the second, Mr. Frederick V. Bingham of Winnipeg, on January 26; and the next Mr. W. J. Camp of Montreal, on January 27. On February 4 was registered Mr. F. W. Godsal of MacLeod, Alberta, afterwards a member of the Alpine Club of Canada. The last entry of the first book was made on July 31, 1904, by Mr. F. M. Bell-Smith of Toronto, the famous water-colour artist whose heart was truly in the Selkirks. The first mountaineers were the Rev. W. S. Green [2] and the Rev. H. Swanzy in the summer of 1888.

1 These registers have been preserved and are now in charge of the B.C. Archives.

2 Rev. W. S. Green was the author of the first book on The Selkirks, *Among the Selkirk Glaciers,* published in 1890.

The founders of The Alpine Club of Canada, Mrs. Elizabeth Parker3 and Mr. A. O. Wheeler[4] were frequent visitors and did much to make known the beauties of Glacier in their writings. The late Professor C. E. Fay was early attracted to the Selkirks and made his first stay in 1895. In 1890 he had made a short stop-over of four hours between trains. He made many ascents in 1895 and his articles on his climbs were published in *Appalachia*. In 1898 he spent some wet days in summarizing the names in the Visitors' Books. From 1887 till 1898 a total of 12,011 guests had signed the book. The totals by countries for these years were: Canada, 3564; United States, 5264; Europe, 2215; England, 1871, Scotland, 205; Ireland, 47; France, 52; Germany, 61; Switzerland, 11; Asia, 664; Japan, 99; China, 180; Australia, 189; New Zealand, 50; Africa, 19; doubtful, 276.

Many famous British mountaineers have stayed at Glacier House, too many to name. But there were three United States mountaineers who deserve mention. About 1903 Professor E. W. D. Holway and Professor F. K. Butters of Minneapolis made many climbs in the southern Selkirks. In 1908 Mr. Howard Palmer of London, Connecticut joined the two professors and made many ascents with very light gear and special food. The first two climbers joined the A.C.C. in 1913, and Mr. Palmer in 1912.

The Vaux family of Philadelphia, Mr. F. W. Freeborn and other members of the Appalachian Club were frequent visitors. Mr. George Vaux Jr. began his observations on the movements of glaciers by means of iron plates in 1890.

There was also Sir James Outram, Dr. J. W. A. Hickson, Mrs. C. Schaffer and Mrs. Julia Henshaw. Both the latter wrote and illustrated wonderful books which are still the standard works of reference on alpine flora of the Selkirks and the Rockies. The late Colonel L. W. Longstaff of Wimbledon, London, brought out most of his family in 1903 and 1910.

An outstanding family was the Mclntyre family who made Glacier their summer home for ten seasons. Mr. and Mrs. J. B. Mclntyre and their young son, Paul, stayed at the hotel the whole of every season from 1915 to 1925. Paul and his father did many climbs with Christian Häsler and Ernest Feuz during these years and the son grew up in the secluded valley. In 1929 Paul, then a law student, sent a long letter to the writer of these notes, and two of his sentences give a fine idea of the spirit of the Selkirks: "The joy of the ten summers spent there completely effaces in my memory the intervening winters, with the natural result that I always think of the dear, old place as the spot where I grew up. All my ideals and ambitions seem to have had their source in that little valley." Paul made many ascents of Sir Donald. In 1922 Mr. Mclntyre, after consulting with Christian and Ernest, designed a small gold badge to be awarded to those few who had made high ascents at Glacier during at least six seasons. The names (according to Ernest) of those to whom the badge was presented are: Mr. J. B. Mclntyre, Mr. Paul Mclntyre, Mr. Christian Häsler, Mr. Ernest Feuz, Mr. E. W. D. Holway, Mr. F. K. Butters, Mr. Howard Palmer, Dr. A. Eggers, Dr. J. W. A. Hickson, Mr. V. A. Fynn. Even after the closing of the old hotel, Ernest Feuz kept in touch with Paul and Mr. Mclntyre. Ernest tells me that Paul died in a car accident in September 1936, and Mr. Mclntyre at his home in July 1944. Christian died in 1940 so 'that the sole surviving badge holders are Ernest Feuz, Mr. Palmer, and Dr. Hickson.

The first Swiss guide to climb in the Selkirks was Peter Sarbach brought out by a party of climbers from the Alpine Club in 1897. In 1899 two guides were brought out by the Canadian Pacific Railway, Edward Feuz and Christian Hasler of Interlaken. Professor Fay describes in

3 Mrs. Elizabeth Parker and Mr. A. O. Wheeler published *The Selkirk Mountains* in 1912.

4 Mr. A. O. Wheeler is the author of *The Selkirk Range,* published in 1905 by the Dominion Government.

Appalachia his first ascent of Dawson with the two guides. In 1900 four guides were detailed for Glacier, namely Karl Schluneggar, Frederick Michell, Jacob Muller, and Edward Feuz, while Christian Hasler was sent to Field. In 1902 Charles Clark came; in 1903, Christian Bohren; and in 1906, Gottfried Feuz. The second generation of guides came out from Interlaken, Switzerland, in the following years: Edward Feuz in 1903; Rudolph Aemmer and Ernest Feuz in 1909; by reason of his service in the Swiss Mountain Artillery, Christian Hasler could not come out until 1912; Walter Feuz came out also in 1912, and spent his early days at Glacier doing work for Mrs. Young, but did not begin guiding until 1921. In 1912 all the above guides entered into residence at Edelweiss. From 1912 until the closing of the Glacier Hotel in 1925, the two permanent guides were Ernest Feuz and Christian Hasler. Their special charm was their love for the Selkirks, for all the features of these great wild mountains and valleys.

Of interest to the guests were the Nakimu Caves, visited by hundreds each year. They were discovered about 1900 by Mr. C. H. Deutschman in Cougar Valley to the northwest of Rogers Pass. They were surveyed by Mr. W. S. Ayers, a mining engineer employed by the Parks Department and two log huts were built, one for the caretaker and the other for the tourists. The second custodian was Mr. George Steventon about 1925. A fine folder was printed on this subject by the Parks Branch in 1914.

The first climbing hut in the district was built by the Canadian Pacific Railway Company near timberline below Rogers Glacier. Mr. Wheeler relates that on August 4, 1904 the Reverends J. C. Hardman, S. H. Gray and A. M. Gordon with Ernest Feuz as guide accomplished the first ascent of Mt. Hermit from this cabin shortly after it was built. Christian and Ernest packed up lumber to keep it in repair in later years but it collapsed a few years ago. In 1947 a small new hut was built higher up by Mr. H. A. Dowler for the Alpine Club of Canada. The only other hut in the vicinity is at Glacier Circle. It was probably built about 1920 and is still in fair condition.

As the construction of the Connaught Tunnel and its opening in 1916 exerted a great influence on the use of the hotel at Glacier, a short account of it may be of interest. The tunnel is situated between Stoney Creek and a bend of the Illecillewaet River, and was built to avoid the climb over the summit of Rogers Pass, which led through the gorges and was subjected in winter and spring to heavy snow slides from Mt. Avalanche. The construction of this double track tunnel, which is over five miles in length, was commenced during August 1913, Mt. Macdonald was pierced on December 9, 1915, and the tunnel was open for traffic on December 6, 1916. In addition to eliminating the snow sheds the tunnel shortened the distance across the range by four and a half miles, and lowered the height of the summit by 539 feet. From portal to portal its centre line measures 26,517 feet. The maximum depth of rock is 5,690 feet. The finished section of the tunnel is 24 feet high and 29 feet in width. In the summer of 1931 there was a great cloudburst on the west shoulder of Sir Donald. A great wall of water came down the valley and blocked up the tunnel with rocks and stones for many days. Since then a new channel has been excavated for the Illecillewaet River by the side of the approach.

The little village for the railway workers at Rogers Pass was active from 1885 till 1916, and many of the temporary shacks were removed and more permanent ones built. The old street was replaced by the wooden railroad platform. The central building was the general store built by Mr. Joseph Carlin, who was a great friend to tramps. He was succeeded by Mr. C. D. Morris and it was he who moved the store in 1916 to the western portal of the tunnel. Later Mr. C. E. Hopkins took over the store and post office and in April 1947 he sold it to Mr. Peters from Winnipeg. To the

south of the old store at the pass was a large rooming-house called Hermit House. It was pulled down before the village was moved.

Not the least of the many attractions at Glacier are the flowers of infinite variety and color, best seen on the alps, of Mt. Abbott and Avalanche crest. A fine new bridge over the Asulkan makes it possible to walk up the valley of that name amid flowers as brilliant as any in the park. It is a question whether the burning down of the fine old wooden Chateau at Lake Louise early in July, 1924, and the destruction by fire of the old Banff Hotel during its rebuilding in the spring of 1926 provided the reason for the pulling down of Glacier House in July, 1929. For this, the first genuine mountaineering hotel in Canada, was pulled down by a contractor, Mr. H. McHugh of Calgary, and all the materials of value shipped away by train, and fire set to the wreckage. The writer visited the old hotel during July, 1929, when he took photographs showing the wreckage in progress.

The land on which the hotel stood for thirty-eight years was sold by the Dominion Government to the Canadian Pacific Railway Company and is still their property. It is hoped that before long a modern, fire-proof hotel will be built to replace the original one. Meanwhile the opening of the Arthur O. Wheeler Memorial Hut in July 1947, partially remedies the lack of accommodation for Club Members at Glacier.

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GLACIER CAMP — JULY, 1947

BY MARY CONWAY

I suspect that I was asked to write this article because no one more unprejudiced by past experiences, more innocent of Canadian mountains and customs could be found. I came on the outing because the mother of a friend had once attended an A.C.C. camp and her enthusiasm after twenty-five years proved so contagious that a group of us was inspired to make the trip this summer. We read the prospectus over many times, and one of our number impressed by the dignity of the occasion and at the insistence of her aforementioned parent invested in some tweed britches because "no one in the A.C.C. would ever wear overalls." The rest of us took "jeans", hoping that the Canadians would be broadminded. We also read all the available material on the Selkirks and arrived with assorted heavy jackets and a pinochle deck fully prepared for two weeks of torrential downpours. In this we were sadly disappointed, but in all other particulars, in the good climbing, in the fine country, and in the spirit of fellowship, the camp far exceeded our expectations.

As I alighted at the campsite, still trembling from a hair-raising ride in the truck, I saw three flags, the British, American, and A.C.C. floating on slim poles over a miniature city of tents. Later I was shown to my quarters, a spacious marquee, and introduced to the tea tent, office tent, and bulletin board tent. These attractive features struck me as a definitely luxurious note, but it was at the dinner table that I really began to wonder whether I had wandered into a camp or a summer hotel. At our first meal eager young men hovered about ready to serve platters of edibles while we campers had merely to partake at our leisure.

However, this was a first impression and lest any old-timers fear that the annual camps are losing their rugged primitive quality let me assure them that a certain degree of individual initiative was not without value at mealtime. While the food was undoubtedly plentiful, and the service available, at my more junior end of the table youthful enthusiasm and appetites made its acquisition difficult. Loud voices and long arms were definite assets and the possessors of these attributes always proved popular dinner companions. Before I reluctantly leave the topic of nutrition, I should like to mention the liquid refreshment every afternoon, that stimulating-beverage, tea. A tea tent is certainly a morale booster in any camp and I can only weep for my lost youth in the States where I was unaware that such refinements existed. Aside from its merit as a beverage, tea has a unique psychological value. How many parties would have been stranded high in the mountain fastness had not the prospect of tea called forth superhuman feats of effort and skill! How many little tidbits of gossip would have died an undernourished death had not the tea tent provided an audience. If I learned nothing else from my stay in Canada, I am forever grateful that I learned to appreciate that nectar of the mountain gods, hot tea.

Here and now I think we owe a vote of thanks to our camp manager, Mr. Richardson, for the beautiful weather he conjured up for us. We all realize that it requires three times as many prayers in the Selkirk region as anywhere else to be effective. As for the two (only two) days of rain, Mr. Sampson confessed that he traitorously prayed for those because he didn't want any of his women friends to have their beauty marred by sunburn.

On sunny days, as is generally the case, swimming assumed great importance. Since Marion Lake was about 2,000 feet above us many campers were almost persuaded to keep bathing on a bi-weekly basis, until one epochal night at campfire when a band of intrepid explorers announced the discovery of a smaller lake "just fifteen minutes downhill from camp." Although this

little gem, descriptively titled "Black Lake" proved to be slightly over a half-hour's walk, and the downhill advantage painfully cancelled by an uphill return, most of the campers loyally insisted that its water, though opaque, was just as refreshing on a warm day as any mountain pool of deepest azure, and the soft mushy bottom more comfortable on tender feet.

The ideal weather, so welcomed by the climbers, was also warmly appreciated by the valley-pounders. A majority of these made the fifteen-mile trip over Balu Pass, acclaimed by all the loveliest walk in the Selkirks. The flowers seen on that walk were beautiful, from the shoulder-high solomon seal and fern of the valleys to the avalanche lilies, forget-me-nots, and Indian paint-brush of the broad alpine meadows. Mountain peaks were on all sides in ever changing panorama as the trail circled over the pass, and the rocky cliffs with waterfalls hanging from them created scenes of rugged beauty and powerful grandeur. Several of the younger set harbored the morbid thought that Lost River, at the point where the dashing torrent disappears underground, would be a good place to dispose of a body if the occasion ever arose, but in general the splendid scenery provoked thoughts on a more inspiring level. Other favorite walks included Glacier Crest with its commanding view of the Great Glacier; the Meeting of the Waters, a forest glade at the junction of the Illecillewaet and Asulkan streams, which somehow managed to seem infinitely peaceful despite the roaring of the rivers; and the Connaught tunnel, where the railway employees were most helpful in explaining the intricacies of the enormous fans at the entrance. I don't know what there is about civilization that proves so compelling once you renounce it, but almost all the campers found their way to the general store to supplement their lunches and look at the latest magazines. The manager of the store also furnished the camp taxi service, and those proud hikers who condescended to ride in his truck returned with tales of thrills and near disasters which could scarcely be equalled by the climbers. Interesting complications arose on several occasions when the taxi kept appointments on standard railway time which had been made in simple faith on daylight saving time.

Since the camp was encircled by so many alluring peaks, climbing was of course our most consuming interest. The first day most of the newcomers attended a conditioning climb up Mt. Abbott. There I learned among other basic rules of mountaineering never to judge a climber's ability or endurance by his apparent age. This revelation came to me as I plodded, utterly exhausted, up the first long slopes while a pleasant lady in front of me romped about taking pictures when she was not interrupting her routine progress with discourses on the local flora and fauna. Alpine climbers are all young at heart and I discovered that the most feeble appearing- among the old timers could outlast me on any mountain in the Selkirks. However, by the end of the first week I, along with most of the other prospective members considered myself ready for the graduating climb. I remember my suspenseful anticipation when at five o'clock one morning Mr. Brooks' quiet voice invited me to my graduation on Avalanche. All week I had relaxed in bed gloating when my tentmates were called and now it was my turn to silently struggle with frigid boot laces and try to assemble myself in the dark without awaking the whole marquee. Then that long, long pull out of the valley before I could even glimpse the mountain. Old Alpine Club members chuckled at my discomfort and mentioned the scramble over the moraine in the Bugaboos as a hike that made this wooded approach a shady stroll. Nevertheless I'll have to make a personal comparison before I'm really convinced. Once won, the summit afforded us a perfectly beautiful view, for as far as one could see were mountains: Columbia, Clemenceau, Sir Sandford, Victoria, and Hungabee, all reigning in majesty over the myriads of lesser peaks. Of particular interest to me was the valley of the Columbia, which after hundreds of miles of winding about flows into the ocean near my home.

Eagle and Avalanche, because they were so accessible from camp, were the most frequently climbed mountains, but the Castor-Pollux-Leda ascent was also a popular trip. In fact the first parties were so enthusiastic over the marvelous glissades and easy rock work that a larger party of thirty decided to make the climb. After a pleasant evening spent exploring the enticing bergschrunds and crevasses in the glacier, they returned in time for a midnight snack, leaving one rope of five up in the mountain fastness to gather scientific data and take pictures of the sunrise. The Harvard contingent established a base camp at Sapphire Col off Castor from which they made ascents of Bonney and Swanzy. Probably they made further climbs, but they were away hiking so much of the time, and so reticent while in camp that it was difficult to learn of their exploits.

The Hermit Hut, 2,000 feet up the slopes of the Hermit Range from the Rogers Pass road, proved a popular base for many climbs. Mts. Rogers, Grant and Fleming, and of course Mt. Tupper with the underhand hold in the chimney were climbed from this base. Nights at the hut were on the whole memorable, certainly never dull. There was the popular "Hermit Hut Hash" created by dumping a sample from every can in the larder into a big pot, and then thoroughly boiling to prevent infection. One valiant chef was taken ill after producing this concoction, presumably from too intimate a knowledge of the contents. There was also the ceaseless accompaniment to all activity provided by the Hermit Hut variety of mosquito, the Elite Guard of mosquitodom. Unforgettable was the sunset, seen through a red netting hung on the door, the mosquitoes so thick on it that only a faint glow could penetrate.

Most of the attempts on Sir Donald, the dominant peak of the campsite, were made during the second week. The majority of successful ascents were made via the north arête, as this proved more practicable than the regular route. I understand that a certain chimney on the regular route was so evasive that the attempts of many were frustrated before they even reached the col. I was fortunate in having a grandstand seat on the summit of Uto for one climb of Sir Donald led by Bob Hind and Jim Tarrant. The climbers were silhouetted sharply against the skyline for part of the ascent, and as I comfortably loafed in the sun drinking orange juice, the little string inched out of sight over the summit.

Evening social life of course centered about the camp-fires, held in the erstwhile fountain of the old Glacier House. Here we again sang of the deeds of Christian Hasler and told of Sir Oliver's before-breakfast conquest of Tupper. Some caught up on any gossip missed in the tea tent and many just recuperated from the recent unnerving experience of battling the crowds in a pitiful attempt to sign up for a climb. There was a memorable Vancouver night climaxed by the home-grown verses to "Reuben, Reuben", and towards the end of the camp a lecture night on topics ranging from Ceylon to the stars in the heavens. Included among these was a short address by Captain MacCarthy on his famous first ascents of Mt. Logan and Mt. Robson. On some of the less clear nights we met down in the old school house for an evening of slides. The slides sent in by members for the Alpine Club competition were shown one rainy evening and on another occasion Andy Kauffmann gave a fascinating slide lecture on his climb of Mount St. Elias. Then on the last night of camp, Fred Parkes entertained a select group with a stirring reading of the "Ascent of the Riffleberg" by Mark Twain, while the audience munched sandwiches commandeered from an unwary kitchen.

The outing had scarcely begun when I found myself possessed with a consuming passion for mountains of any size, shape or composition. I began to look eagerly to the heights and tried to develop that secretive smile which marks mountain men. I savored each moment as it passed and in any leisure time relived the high spots of the past days, both the exciting and the quieter

but no less satisfactory moments. In retrospect I frequently thought of the opening of the A. O. Wheeler Hut, with Sir Oliver and Lady Wheeler as special guests. This was the first Alpine Club Hut I'd ever seen, and I was exceedingly impressed, particularly by the kitchen, which was equipped to appeal to the most discriminating housewife. At this dedication, lifetime memberships were awarded to the two Feuz brothers and Rudolph Aemmer, Swiss Guides from Lake Louise and longstanding friends of the club. The name "Swiss Guide" conjured up pictures of edelweiss and colorful suspenders to my rather fertile imagination, but these men appeared far more capable if not as sensational as the men of my dreams. The whole ceremony was especially impressive because it revealed a phase of the Club entirely new to me, the great system of huts throughout the mountains. By the end of camp, after listening carefully to all conversations and boldly attending the annual meeting, I had become very interested in the activities of the A.C.C., an interest shared by my friends, so that at the outing's close four new members from Portland, Oregon, set out for further adventures at Lake O'Hara and Tonquin Valley - - - but that is another story.

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INVESTIGATION OF GLACIERS IN BRITISH COLUMBIA

BY C. E. WEBB, C.E., M.E.I.C.

In connection with studies of the water resources of the North Pacific Planning Project, the relationship of glaciers to the water resources in this region has been discussed at various times. In order to permit a long-range study of the movement of glaciers in the Pacific Northwest it was suggested early in 1945 that the Dominion Water and Power Bureau enlarge its study of water resources to include records of the water flow from and movement of representative glaciers. These studies are now being carried out under the direction of Mr. V. Meek, Controller, Dominion Water and Power Bureau, Surveys and Engineering Branch, Department of Mines and Resources, Ottawa.

In the autumn of 1945 investigations of the movement of glaciers in various parts of British Columbia was instituted by the British Columbia and Yukon District of the Dominion Water and Power Bureau. At that time it was decided to concentrate these studies on a limited number of glaciers, each considered typical of a certain area.

As far as possible, glaciers which were reasonably accessible were chosen on which records had previously been obtained. In this way it was possible to make the studies continuous over a longer period of time. Arrangements have now been made to annually visit each glacier at approximately the same date, late in the summer.

In the Coast Range two areas were readily accessible and at the same time considered representative of the range. These are the Garibaldi Park and the Mount Waddington Areas. The Helmet, Sentinel, and Sphinx Glaciers were chosen for study in Garibaldi Park and the Franklin Glacier in the Mount Waddington Area.

In the Selkirk Mountain Range, Kokanee Glacier was chosen in the southern portion, and the Illecillewaet in the northern area.

Engineers of the Vancouver District office of the Bureau, familiar with mountain climbing, have been selected for these important studies. Mr. P. W. Strilaeff has been responsible for work in the Garibaldi Park area, Mr. A. V. Gallon the Mount Waddington area, and Mr. W. P. Harland on glaciers in the Selkirk Mountain Range.

Purpose

The purpose of the glacial surveys is to determine their movements, that is, whether the majority of the glaciers in the Province are retreating or advancing, and at what rate. Since the glaciers supply a considerable portion of the summer flow of most of our rivers, their size and behaviour constitutes an important factor in all stream flow investigations. For the purpose of comparison two streams of closely situated watersheds were chosen. These are the Kootenay River (above Canal Flats) of non-glacial origin, and Horsethief Creek, almost entirely glacial. It will be noted that Horsethief Creek maintains its high flow throughout the summer and reaches its peak during the heat of July, while the Kootenay drops off immediately from its peak in May and steadily diminishes throughout the summer season. Conservatively then, it could be said that at least thirty percent of the summer flow is derived directly from the glaciers in its watershed.

As Horsethief Creek is typical of a large percent of the streams in British Columbia, it can be surmised that water of glacial origin is of particular value in maintaining the flow of our rivers during the critically dry summer months. On this account it is our objective to determine, if possible, what can be expected in the future of our glacial resources.

The immediate purpose of the 1945 visits was to review the research done in the past by various groups and to set up reference points from which the movement of the glaciers might henceforth be checked.

Method:

The method of study to date has consisted of the following components:

1. The setting up of fixed reference marks well referenced, near the toe of each glacial tongue studied.
2. The annual measurement of the distance from the nearest point of the forefoot to a reference point or base line.

or alternatively

The annual mapping of the forefoot. The same plan is used each year and on it the location of the tongue as found is marked. Such a plan shows clearly the yearly advance or retreat. The average movement of the toe along a front perpendicular to the flow and of given length is readily calculated by division of the area difference by the length of front.

3. The setting up of camera stations from which annual photographs are taken to show prominent changes in the glacier.
4. The study of the rate of glacial flow by means of markers set out on the ice along a base line crossing the glacier some distance above the snout. The base line is set perpendicular to the direction of flow and the deviation of the markers from the base line is measured trigonometrically each year.

Certain further methods of study are recommended for future investigations.

1. A surface cross-section line run across the glacial tongue perpendicular to the line of flow and some distance up from the snout would give a very good indication of the changes in volume. Annual cross-sections could be super-imposed on the same sheet to indicate depression or uplift of the surface.
2. Aerial photos taken at intervals of about five years would provide a comprehensive study of the changes in the glacier's outline.

Glaciers of Garibaldi Park — Coast Range

Garibaldi Park is situated sixty miles north of Vancouver and is a portion of the drainage basin of the Cheakamus River flowing into Howe Sound.

For many years the scientific section of the Canadian Alpine Club has been studying the movements of glaciers and recording detailed results in the *Canadian Alpine Journal.* It is suggested that for measurements of any of these glaciers prior to 1945 and for information not contained herein, reference be made to the reports by Mr. W. Taylor, Volume XXIV of this Journal. Those glaciers were selected for study whose base lines could be easily relocated or whose retreat in the past could be closely estimated.

Helmet Glacier

Helmet Glacier is a typical basin type glacier with a northern exposure. Its two tongues are about half a mile apart. The retreat of its east tongue has been appreciably greater than that of the westerly one. The difference in the moraines of the two tongues is of particular interest. The moraine at the west tongue is flat delta and is composed of cinder-like material with very little vegetation, while the moraine of the east tongue is typical in that it is rocky and irregular.

In 1945 a measurement was made from the reference point "T" established by the British Columbia Mountaineering Club and it was found that the west tongue had receded 360 feet since

Illecillewaet Glacier From R. P. 2

Helmet Glacier, West Tongue

Sentinel Glacier

Sphinx Glacier

Franklin Glacier From Rock "A"

Kokanee Glacier, Joker Creek Tongue

1935. A new base line was established closer to the snout between rock cairns. The previously established base line at the west tongue could not be located so a new one was established.

In 1946 measurements were made to the two tongues from the base lines. The west tongue had retreated twenty feet and the east tongue twenty-two feet in the period between 17 September 1945 and 25 August 1946. A line of five 6-inch square steel plates nailed on top of wooden poles was fixed on a line across the east tongue 300 feet above the base line. These are for the purpose of determining the rate of flow in future years.

The summary of available results is as follows:

East Tongue

Date	Retreat	Average Annual Retreat
1935-36	112ft.	112ft.
1945-46	22ft.	22ft.

West Tongue

Date	Retreat	Average Annual Retreat
1935-36	85 ft.	85 ft.
1936-45	275ft.	31ft.
1945-46	20ft.	20ft.

Sentinel Glacier

Sentinel Glacier is typical of all the glaciers in Garibaldi Park. It is composed of several smaller glaciers that discharge into a short trunk glacier.

The previously established base line was not located and, therefore, the retreat prior to 1945 was not measured. There is, however, photographic evidence that it has retreated somewhere around 900 feet in the last nine or ten years.

In 1946 a line of seven wooden poles with 6-inch square steel plates nailed on top was fixed in position across the glacier and at right angles to the flow. These are to be used to determine the rate of annual flow. Sentinel Glacier has retreated an average of 38 feet in the period from 16 September 1945 to 25 August 1946. A summary of available information to date is as follows:

Date	Retreat	Average Annual Retreat
1935-36	240ft.	240 ft.
1936-45	660ft.	78ft.
1945-46	38ft.	38ft.

Sphinx Glacier

Due to difficulty in approaching the tongue of this glacier no measurements were made. However, interesting comparative photographs were made in 1945 and 1946. The Sphinx Glacier in its retreat has left huge blocks of ice making the forefoot very indefinite and irregular. The moraines of this glacier have been preserved in a good condition and could prove to be a good ground for studying the glacier's history for the last several hundred years.

Summary

It appears that retreat of the glaciers of this region in period 1945-46 has been less than average. The most probable explanation for this is the abnormally heavy snowfall during the winter and cool weather during a short summer.

It is interesting to note that there were no unusual changes in the ice tongues which could be attributed to the seismic disturbances of 23 June 1946.

Franklin Glacier in the Mount Waddington Area — Coast Range

Mount Waddington is situated in the Coast Range about 165 miles northwest of Vancouver. Due to the fact

that records have been kept on the Franklin Glacier previously by the Alpine Club of Canada, this glacier was chosen for study in this area. The glacier discharges into the Franklin River which flows into Knight Inlet near its head.

It is suggested that for measurements prior to 1945 and for material not covered in this report, reference be made to reports by D. Munday, Volume XXIII, of the Canadian Alpine Journal.

In 1945 the reference mark established by Mr. Munday was located and a measurement from that point made. A new reference point "A" was then established closer to the glacial forefoot and a profile of the glacial snout plotted.

In 1946 the profile of the glacial snout was plotted again with reference to Point "A" and photographs were repeated. These provide interesting comparison with those of 1945.

The Franklin Glacier has retreated sixty-three feet in the period from 11 September 1945 to 8 September 1946.

A summary of records to date is given below :

Date	Dist. of Retreat	Total Reteat	Av. Annual Retreat
1927-31	900 ft. approx.	900 ft. approx.	225ft.
1931-34	645 ft.	1545 ft.	215 ft.
1934-45	2975ft.	4520ft.	270ft.
1945-46	63ft.	4583ft.	63ft.

Summary

The retreat for the year 1945-46 is considerably smaller than the average annual retreat for the years previous. However, as was stated in the 1945 report "Retreat of Glaciers in Mount Waddington Region." "In 1927 the glacier snout was approximately 1,500 feet wide — but since that time the ice has retreated into a narrow space between two steep valley walls about 600 feet apart. The reduction in the area of the snout may result in less retreat."

Another reason for the decreased recession might be that as the glacier retreated the snout rounded a curve of the valley into a position where the sun can only shine a few hours each day. Further the snowfall during the winter of 1945-46 was in general heavier than average throughout British Columbia. This, together with the shorter than usual summer, may have retarded the recession of the Franklin Glacier.

Glaciers of the Selkirk Mountain Range

The Selkirk Mountains lie in the central portion of the Columbia River Drainage Basin in Canada. From its source the Columbia River flows north along the eastern side of the Selkirks and then turns around the head of the range and flows back south along the western side of the range. The Selkirks, like other surrounding ranges, contain many active glaciers. For this reason two glaciers in this range were chosen as being typical of the Upper Columbia River Basin.

Kokanee Glacier

The Kokanee Glacier, 20 miles northeast of Nelson, is a typical Alpine glacier situated on the north side of the highest ridge in the southern extreme of the Selkirk Mountains. Its present total area is approximately one and a quarter square miles. The glacier is drained by two tongues about one mile apart, one at the head of Joker Creek and the other at the head of Coffee Creek. The snouts of both glaciers are now situated in basins well below the main ice field. Both tongues are

now at about 7,300 feet elevation while the ice field and névé extend from 8,000 feet elevation to 9,200 feet elevation.

In 1945 the two tongues and reference points established at the time were tied in the triangulation. A survey was then made of the forefoot of each tongue. Camera stations were established and photographs taken from these points.

In 1946 the two tongues were again mapped and the mean recession for each tongue was calculated by the method outlined earlier in this report. The mean recession of the Joker Creek tongue during the period from 10 September 1945 to 6 September 1946 was found to be 67 feet along a 700-foot front. The mean recession of the Coffee Creek tongue during the same period was 79 feet along a 400-foot front.

Although no records have previously been compiled on the Kokanee Glacier its behaviour in the past fifty years is apparent. The Coffee Creek tongue has receded about one-half mile since the topographic surveys of 1923 (Ref. Map No. 203B, Department of Mines, Geological Survey). Photographs of the area taken by Mr. Ross Fleming of Nelson, and the position of marginal moraines, indicate that the surface of the ice in that valley has been depressed approximately 500 feet since 1920 or thereabouts. During the same period the Joker Creek tongue has apparently retreated one-quarter mile and the surface has dropped about 500 feet. The only terminal moraine remaining from the tongue is that separating Mansfield and Joker Lakes in the valley below.

Growth of timber on this moraine indicated that it has been at least 200 years since the glacier was at this point. This proves that recession of the glacier has been less than one-quarter mile in over a century, although it has receded one-quarter mile since 1923. Condition of the slope above Joker Lake indicates that the glacier had probably been stable in its 1923 position for many years. Present rate of recession of the glacier appears to be about the same as the average for the period from 1923 to date.

Illecillewaet Glacier

The Illecillewaet Glacier, three miles south of Glacier, lies on the west side and against the main divide of the Selkirk Mountains in the northern portion of the range. Its present area is about nine square miles. Two valley glaciers, or the remains thereof, branch off the névé at either end. The Illecillewaet Glacier at the northern end forms the source of the Illecillewaet River and the Geikie Glacier at the southern end the source of the Incomappleux River. Both rivers are main tributaries of the Columbia.

Records of the Illecillewaet Glacier date back to 1887 and have been kept more or less continually since then by members of the Alpine Club of Canada. The purpose of this Bureau has been to continue this work and to augment it. In 1945 new reference points were established and these were tied in with all other points which could be found by triangulation. The forefoot of the tongue was then mapped. Photographs were taken from original and new camera stations. In 1946 the glacier was again visited and surveys indicated that the mean recession over a 1,200-foot front was 49 feet for the period from 19 September 1945 to 13 September 1946.

The famous “Ice Fall” of the Great Glacier is now entirely gone and in its place is a bare and ugly mountainside. The glacier forefoot is now in a fairly stable position some 2,000 feet above its former location. Large alders near the toe of the ice in 1887 indicated that the glacier had been in this maximum position for many years. Since then the recession has been extremely rapid but appears to be retarding since 1931.

A summary of all results appears below:

Year	Distance of toe from Point "C"	Annual Recession	Average Annual Recession
1898	60		
1899	76	16	
1900	140	64	
1901	155	15	
1902	203	48	
1903	235	32	
1904	240 ½	5 ½	
1905	243	2 ½	28
1906	327	842	
1907	316	-11	
1908	355	39	
1909	366	11	
1910	426	60	
1911	531	105 ½	83
1912	615	83 ½	
1931	3156		134
1945	3780		43
1946	3826	49	

Note: All Measurements except those of 1945 and 1946 made by Alpine Club of Canada.

From the above it appears that the rate of recession of the past year is about the same as the average since 1931, but well below the rate during the period from 1912-31.

General Summary

At present there is not sufficient information on hand to draw any definite conclusions. The diversified behaviour of glaciers makes it necessary to have records from a considerable number over a period of several years, before definite trends can be established.

It is hoped that as to cause of glacial recession, interesting materials will be provided by comparison of glacial records with meteorological data. One meteorological factor which does not seem to have been given due regard in previous studies is the annual mean temperature. Every slight change in temperature may mean the difference between rain and snow. While snow has a constructive effect on the glacier, rain is exceedingly destructive. Thus a variance of small degree in the mean annual temperature may decide whether a large portion of the precipitation will fall as rain or as snow.

From the point of view of this Bureau the effect of glacial recession is even more interesting than the cause. As previously indicated, the glacial run-off constitutes an extremely important part of the flow of many of our rivers during the crucial dry summer months. Although the theory is widely held that the run-off depends on the volume of ice in the glacier, these studies would indicate that the run-off varies very nearly directly to the ice exposed to the weather. Water from the melting surface runs along the top of the glacier until it finds a crevasse through which it falls to bedrock, thus emerging from the bottom of the glacier at the toe. On the basis that run-off varies as the area, the overall shrinkage is important and this is best indicated by the recession of the

tongues. It is anticipated that the comparison of stream flow records and glacial data will produce conclusive results.

Conclusions reached to date are as follows:

1. The rate of recession is not governed entirely by weather, although weather is probably the controlling factor. Conditions of the valley and the steepness of the slope have a marked effect on the rate of recession. It is noted that the Franklin Glacier receded far more rapidly when in a wide portion of the valley than when in a constricted area. In the case of the Illecillewaet it is noted that recession was most rapid when the forefoot was on a steep slope.
2. The glaciers of the province were in more or less stable condition until about 1890, at which time a general recession began.

Acknowledgements

We are indebted to the valuable aid given by the Alpine Club of Canada and its various members by supplying information prior to our investigations and by giving advice concerning the approach of several of the glaciers studied.

IN MEMORIAM

Morrison P. Bridgland

1878 - 1948

Morrison Parsons Bridgland was born on a farm in the suburbs of Toronto on December 20, 1878, and died at his home in Toronto on January 15, 1948. Although he began and ended his life in the East, his heart was in the West, and particularly in the Rockies, in the surveying, photographing and mapping of which his active life was spent.

His education was secured in the famous Toronto Junction Collegiate Institute, and at Victoria College in the University of Toronto, from which he graduated with Honours in Mathematics and Physics in 1901. After a year spent at the School of Practical Science in Toronto he went West as assistant to the late A. O. Wheeler. To his new work he brought all the essentials for success. Life on the farm had give him physical strength and endurance; he was one of the most capable full-backs on the campus in association football, with a particularly strong and sure kick. And in addition to a sound training in the physical sciences, he found much deep, if quiet, satisfaction in the contemplation of nature in her sterner as well as her more benign aspects.

He came to the first camp of the Alpine Club of Canada with five seasons of climbing behind him. And for several years, while the Club was getting on its feet, through the good offices of the Government, his services were at the command of tyros as a guide. I doubt if any one of the scores of members who qualified on his rope would have noticed any sign of impatience at what must have proven at times a tedious experience.

In 1910, he was placed in charge of the triangulation surveys in the Railway Belt of British Columbia and was almost continuously engaged on this and similar assignments in the mountains until 1931. In that year the work on the Banff boundary on which he was engaged was suddenly discontinued. This was the great disappointment of his career. He rarely permitted himself to speak of this event. But in 1939, when I was studying his map of the Coleman region and asked for information as to what lay to the northeast, he told me of his regret at not being permitted to finish the mapping of this area; and in speaking of the Brazeau he remarked that he liked that corner of the Rockies better than any other.

As a mountaineer, especially on rock, he had few equals. His climbing while on the survey was accomplished with the handicap of instruments and equipment weighing about thirty-five pounds. Seldom was he repulsed by a peak; in fact in three summers during which I knew something of his work I do not recall a single instance in which he turned back, unless because of weather. And during all the years of his climbing, in the course of which he made several hundred ascents, he always brought his party safely home. (The one apparent exception was a fatal accident in 1927 to a member of his party who had attempted the ascent of Mt. Wilson in his absence and contrary to instructions.) His intrepidity was matched by his caution. He was coolness itself when confronted with a tricky piece of climbing, but if he were asked whether it would not be better to attempt another route down he was likely to reply: “Better the devil you know, than the devil you don’t know.”

He disliked rhetoric as much as he disliked all other extravagances. But in looking over some of his reports, I was intrigued by two unusual words in a paragraph, “delight” and “only”. The paragraph is reproduced as characteristic of his method:

“On July 3, a start was made for Mt. Begbie to the west of Revelstoke. Crossing Columbia

River by a bridge at this point, we travelled south about four miles by means of a settler's trail. From here the horses were sent back and we proceeded on foot about three miles further south to the base of Mt. Begbie. Camp was pitched at night on the side of the mountain about 2,000 feet above the Columbia Valley. Much to our delight, the following day was fine and beautifully clear. The mountain offered no difficulty and we were on the summit by nine o'clock. A cairn was erected, five feet in diameter at the base and eight feet, seven inches high. In the rock at the centre of the cairn a hole was built to receive the brass bolt, and four holes, each distant six feet from the central hole and bearing north, east, south and west respectively, were drilled for reference bolts. This cairn was designated as signal XXXVIII. The trip to the mountain and return occupied only three days."

The word "delight" is accounted for by the fact that work had been held up by rain, and "only" provoked by the nature of the country and the prodigious effort involved in penetrating the swamp, fallen timber, devil's club and alder between the end of the road and the base of the mountain. As a matter of fact, the party was back in main camp by noon on the third day. It is significant also of Bridgland's capacity of under-statement that he does not mention a delay at the bergschrund, or the hail storm on top which extended the work there to seven hours. A photograph of the great cairn appears opposite page 36 in his "Report on the Triangulation of the Railway Belt of British Columbia." Brigland is seen leaning with his left elbow against the cairn.

Apart from the necessary reports, he was not given to publishing, but his treatise on "Photographic Surveying" has become an authoritative work on the subject. Another work, largely based on his campaign in 1915 and reproducing many of his fine photographs, was edited by Dr. Deville, the then surveyor general, under the title, Description of and Guide to Jasper Park. The mountain which none too worthily bears the name of a great alpinist, who, I suppose, has climbed more peaks and pioneered more trails than any other Canadian, is in this northern area near the Yellowhead Pass.

He is survived by his widow, well known to many friends in Calgary where for so many years they made their home, and by two sons who inherit his physical strength and interest in science.

—C. B. Sissons.

I first met "Bridge" when he joined the late A. O. Wheeler's topographical survey party and made many climbs in his company both in the survey party and in the A.C.C. up to the time I left Canada in 1910. Athletic and very powerful, Bridgland quickly became a highly proficient climber and because of his study of mountains and his thoroughly sound judgment, a very fine mountaineer.

On the survey he never lost sight of the object — to make a map: high and difficult climbing does not go hand in hand with the saving of energy and time that is essential to good surveying and Bridgland would never undertake a high or difficult peak if a lower or easier one would serve as well, or if for the same expenditure of energy a day or so could be saved by a long (in distance) expedition instead of moving camp. On the other hand, if high and difficult work was essential to the job, he was only too glad to undertake it, which gratified his enthusiasm for real climbing, notwithstanding the heavy survey loads carried.

He was tireless and thorough in the every day routine of survey life, the pitching of camp, packing of horses, cutting of wood and so on — all the "chores" of survey work; in the "office" the

sometimes most exasperating chore of changing photographic plates in the dark entirely by feel (with a stuffy dark tent thrown over the head and body) left him unperturbed and like all his work was done with great care and thoroughness. I can remember as a youngster dropping off to sleep with "Bridge" still struggling with plate changing, or writing up the day's notes by candle light. He taught me much in patience, as in climbing and surveying.

In the early days of the A.C.C. the survey party was lent to the Club for about a month each year for camp construction, assistance in guiding, and tearing down the camp; in those days all tents were brushed, a very heavy dining fly was erected and the labour involved in making and breaking camp was considerable. Bridgland was a tower of strength in this work.

As on the survey, in the A.C.C. he never lost sight of the object for which the survey party was lent — to make members as comfortable as possible and to graduate as many as possible as safely as possible. He led party after party up the same climb, to him an easy and uninteresting climb, always safely, always with patience and good temper, and always with the utmost consideration for his party. On an occasional "rest" day he would gratify his own enthusiasm by undertaking difficult climbs or new routes with the Swiss guides or with some experienced companion.

I have met few men who so consistently subordinated their own inclinations to the achievement of the object.

Sic itur ad astra. With the death of M. P. Bridgland the Club has lost one of its few remaining Founder Members and the Club and all mountaineers, one who has rendered them incalculable service not only in mountaineering as such but in making possible mountain travel based on sound and accurate maps.

—E. O. Wheeler.

Charles G. Lathrop

1880 - 1947

Mr. Lathrop passed away at Pasadena on July 15, 1947, from heart trouble after an illness of five weeks. He was a life member, having joined the club in 1918. His interest in the Canadian mountains began in 1916, which summer and that of 1917 he spent at Glacier and Lake Louise, where he climbed with the Swiss guides, graduating on Mt. Temple. In 1937 and 1939 he summered at Jasper. He was keenly interested in the mountains and their beauty.

He was a graduate of the University of Michigan in 1901, and an executive for many years at Detroit, a captain in the U.S. Army Air Corps 1917-19, and was a specialist in aircraft production.

He also took a great interest in golf. He was an officer of the Southern California and California (State) Associations for some ten years and was their secretary and president and was on the Handicap Committee of the U.S. Golf Association.

The sincere sympathy of the club is extended to his widow.

—H.E.S.

Frank Ware

1880 - 1948

Mr. Ware passed away at Santa Barbara, California, on February 6, 1948, after a heart illness of about three months which attacked him on his return to California from a trip through the Rockies and a visit to his old home town of Regina, where he had been a successful merchant.

He first acquired a love of the mountains from his frequent visits to Glacier in the days of the old Glacier House under the management of the charming hostess, Mrs. Young. He was a great hiker and explored all the trails in the district and climbed a number of the minor peaks under the tutelage of the Swiss guides. He joined the club in 1920 and attended a number of camps in the first half of that decade. He began to let up in his strenuous business activities about twenty years ago and paid periodic and frequent visits to California. Finally, about 1937, he moved permanently to California, only returning occasionally to the Rockies and his former home. While in California he did some climbing of the nearby hills, still pursued his hiking proclivities and for many years did ten miles a day, six days a week.

—H.E.S.

Patrick W. Rolleston

1902 - 1947

To see the world in wider range and greater detail was always an achievement which gave Patrick Rolleston more pleasure than any other. It was for this reason that he spent all the time he could spare in walking, skiing and mountaineering. In his college years and at various times later on he visited the Alps, where he made several ascents, among them the Dent Blanche and the Cervin. The few days of climbing he spent at the 1945 Eremite Valley Camp and later in a trip to the Maligne Lake area, impressed him enormously with the great power of attraction of the Rockies. He was deeply conscious of their contrast with the Alps, and of the charm and the difficulty offered by their remoteness and their primitive wilderness.

Born in Dublin and educated as an engineer at Corpus Christi, Oxford, Rolleston served with the Aluminum Company in Canada, and during the war did outstanding work as Director of Raw Materials Supply in the British Air Commission in New York. At the time of his death he was Director of the Aluminum Laboratories in Banbury, Oxfordshire.

Rolleston combined his taste for the open country with a profound love of literature, and gathered together a quite extensive library on mountains and mountaineering. These much-read and well-treasured books reflect his lifelong interest and enjoyment of mountain lore and scenery.

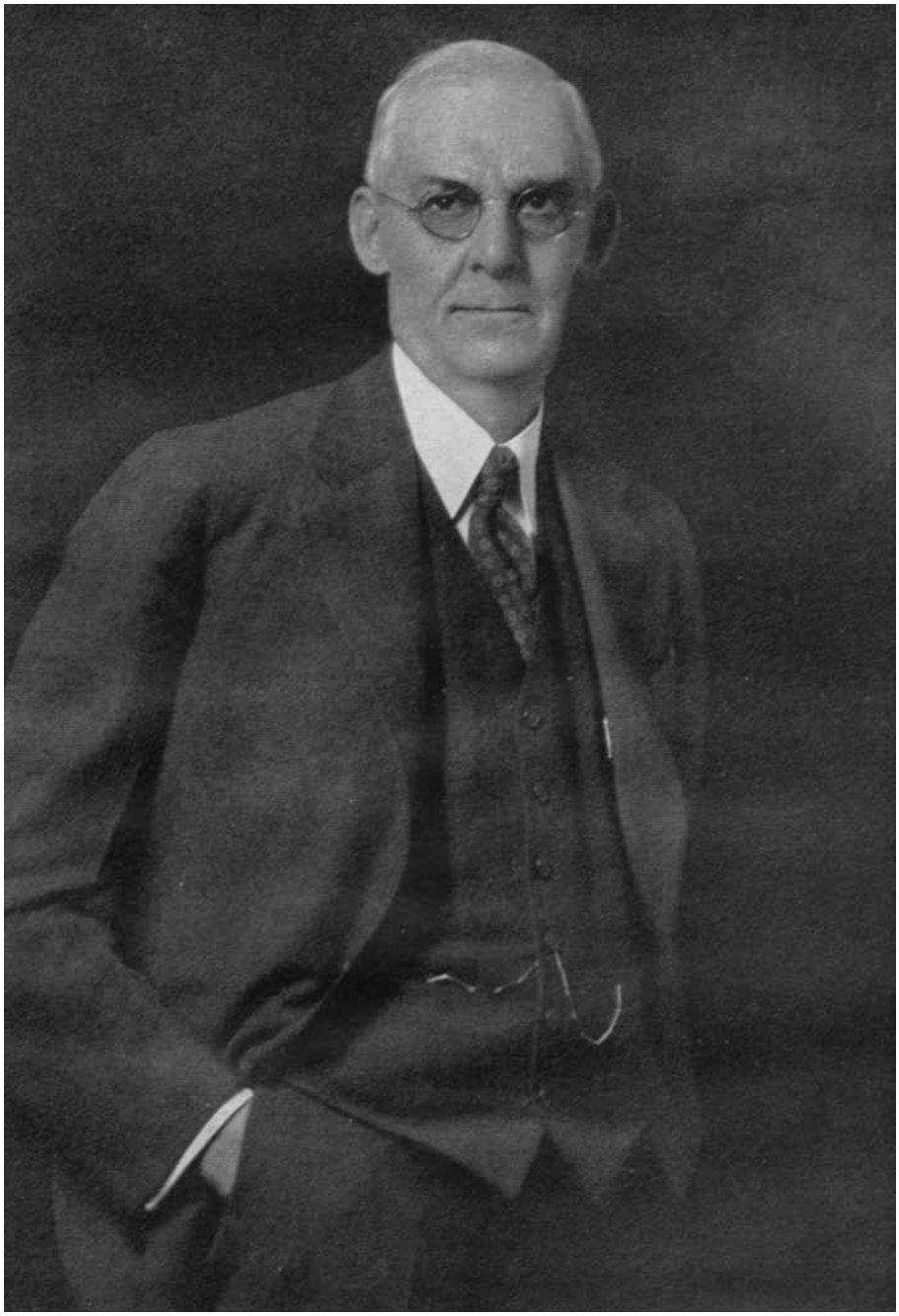
—P.B.

Frank N. Waterman

1865 - 1948

The club mourns the passing of Frank N. Waterman on January 19, 1948, at Summit, New Jersey, where he had been a resident since 1900.

He was an engineer by profession, a specialist in electrical and mechanical patent matters. He studied one year at Yale and then went to Cornell where he graduated in Mechanical Engineering



Frank N. Waterman.
Photo Blank and Stoller

and some years later took his Master's in Science at the Brooklyn Polytechnic Institute. During the course of his profession he represented many of the larger electric and radio corporations in their patent litigation. He was an authority in his field and wrote many special papers and was an outstanding member of various professional societies.

He became a member of the club in 1917 and attended nineteen annual camps between Cataract Brook in 1917 and Columbia Ice Fields in 1938, which was his last camp and thereafter his doctor would not, on account of his heart condition, consent to his again invading the mountains. He was known to the club members as an ardent, outstanding mountaineer. He climbed some three score peaks in Canada and knew the mountains intimately from Assiniboine and Sir Douglas in the south beyond Robson in the north and made a special exploratory expedition in 1929 to Sir Alexander. He also climbed considerably in the Selkirks and made several pack-train trips, among others from Field to Robson in 1923 and from Jasper to Banff in 1928. He spent one summer climbing in the Swiss Alps. He was a splendid mountaineer in every sense of the word, was very friendly, took a keen interest in camp life and frequently contributed his part in the campfire programs. He was a keen photographer and delighted in the winter months to show his pictures of and give talks about his friends, the mountains and their flowers.

He was a member of the American Alpine Club, the Appalachian Mountain Club and the Green Mountain Club.

He will be greatly missed by his mountaineering friends of whom he had so many. The deepest sympathy of our club members is extended to his widow, and his two daughters and son, whom he had the pleasure of introducing to the mountains of Canada.

—H.E.S.

Legh S. Powell

1855 - 1947

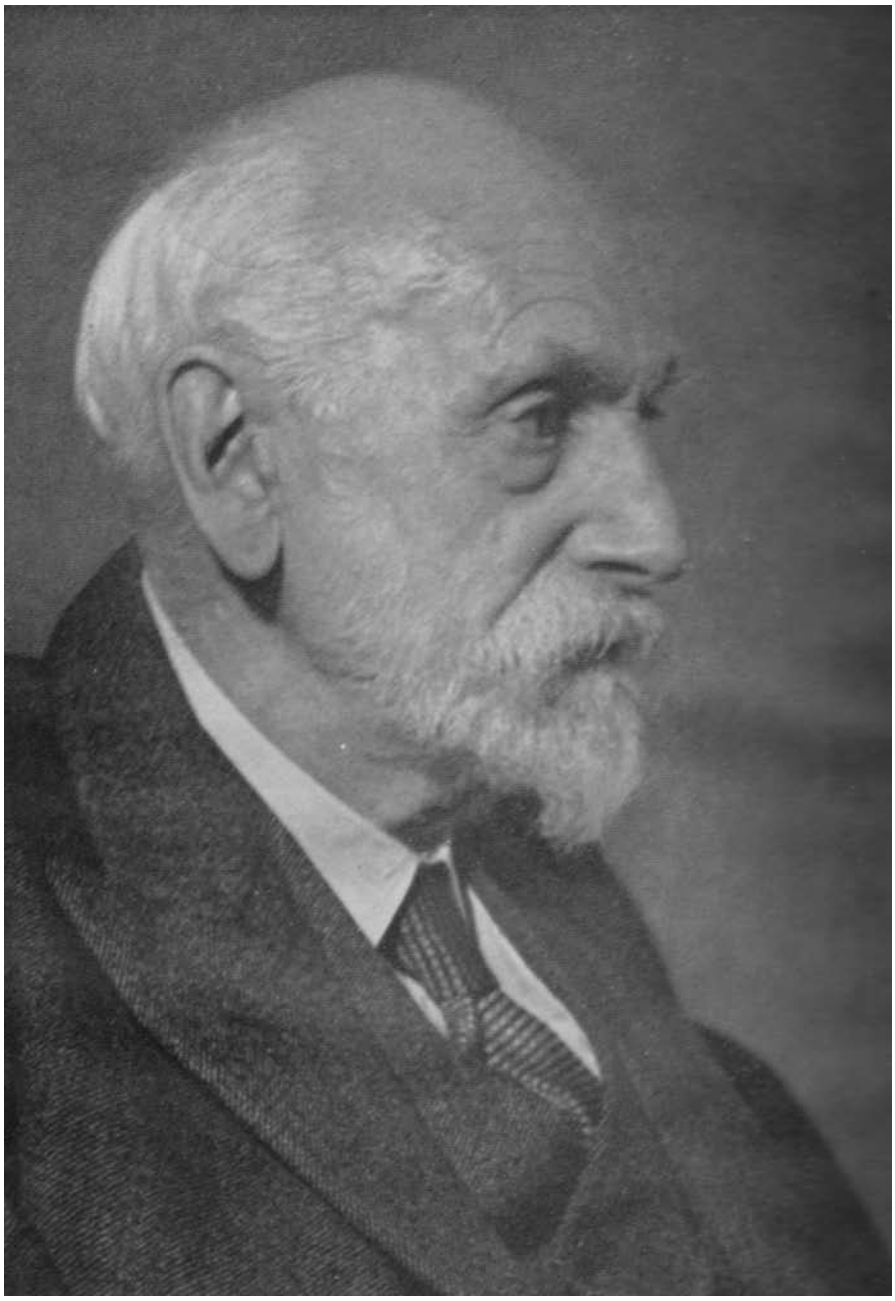
The club was fortunate in having for a short time the membership of Mr. Powell, who was perhaps the oldest member of the English Alpine Club which he joined in 1882. He became a member of our club in 1940, having come to Canada from England in 1939 on a visit and being prevented on account of the war from returning until 1944. He joined the Vancouver section and participated in its activities. He attended the club camp at Glacier Lake in 1940 and the writer, with whom he tented, well remembers his trip into camp and his wading in glacier waters to his boot tops for a couple of miles on the flats approaching the camp.

He was a keen mountaineer and climbed extensively in Switzerland, making a number of first ascents in his early days. He was a member of the Alpine Clubs of France and Italy and also for a time of Austria and Switzerland.

He died at Dorking, England, on December 2, 1947, the immediate cause of death being a heart attack.

He was a fellow of the Royal Geographical Society, a member of the Royal Meteorological Society and a member of the Institute of Electrical Engineers. He specialized in industrial research and was largely responsible for the foundation of the great rayon industry. He is survived by one daughter.

He never lost his keen interest in mountains and often regretted that his age prevented him climbing some of our grand Canadian peaks, and that he was forced to become a mountain wanderer rather than a climber.



Legh S. Powell

—H.E.S.

Charles Shiverick II

1925 - 1947

Charles Shiverick was born in Cleveland, Ohio. He graduated from St. Paul's School in 1943 and served in the U.S. Army Field Artillery until the spring of 1946.

He first started climbing a few months after being discharged from the army when he made some climbs in the Sierra Nevada Mts. of California in the Mt. Whitney district. Later in the summer he drove to British Columbia where with two friends he obtained the services of Hans Führer who guided them on several trips. They climbed Mt. Edith Cavell by the east ridge and made some climbs in the Tonquin Valley and around Mt. Robson.

In the fall of 1946, Charles entered Harvard University where he soon became a very active member of the Harvard Mountaineering Club. His enthusiasm and interest in the mountains and in the club soon won him many friends. He participated in nearly all of the rock climbing trips and in the winter climbs on Mt. Washington, and in the spring of 1947 he took charge of several local rock climbing trips. At the H.M.C. spring dinner, he was elected to the office of Treasurer for the following year.

In the summer of 1947, he was elected to active membership in the Alpine Club of Canada. At this time, however, he was a member of the H.M.C. expedition to the Mt. Waddington area. There he made a number of climbs including Mt. Isolation (now Mt. Charles Shiverick), Mt. Schultz, and Claw Peak. On July 22 he was killed in an avalanche while attempting the ascent of Mt. Serra. All who knew him, especially those who knew him well, mourn his death.

—Lowell Chamberlain

REVIEWS

Skiing the Americas

by John Jay; published by Macmillan Company of Canada, Toronto; 257 pages; 115 illustrations. Price $4.95.

This book is so delightfully written that it ought to offer much enjoyment even to a reader not directly interested in skiing from the point of view of a skier. The author is a successful lecturer among other things, and proves his skill in this book. As a member of "The March of Time" staff he has skied from Alaska to Chile, and from Mt. Rainier to Mt. Tremblant, and he does not omit mentioning delights of skiing in the Canadian Rockies.

But Canadian readers may rightly chide him in connection with his otherwise well-told story of how the 87th Mountain Infantry (the "Skiing Jackasses" whose symbol still adorns the Saskatchewan Glacier Hut which the Alpine Club of Canada inherited later) set up a camp on that glacier for testing "Weasels" on the Columbia Icefields.

The very ordinary bit of road-building to the glacier is represented as having been termed impossible by Canadians; Washington, instead of Ottawa, is given credit for removing delays of entry through customs at the border; and the "Weasel" is presented as a snow vehicle of American invention. The features on which its success depended were developed by the National Research Council of Canada. "From this basis, the Canadian Snowmobile ('Penguin') was developed concurrently with the 'Weasel,' which was produced by the co-operation of the United States, Britain, Canada and Norway." Page 24, *Technical Memorandum No. 10 of the Associate Committee on Snow and Soil Mechanics, 1947, National Research Council of Canada.*

The photographs set a high standard and are mainly the work of John Jay, but no index of illustrations has been provided. Useful advice is given on snow photography and movie-making. Worthwhile hints about clothing, equipment and skiing are also included. The author's light and easy humor makes the book very readable.

Members of the Alpine Club of Canada who taught mountaineering to Canadian troops in the Little Yoho Valley have pleasant recollections of John Jay (then Lieutenant but later Major) who was one of the U.S. Army observers from Camp Hale, and will wish him success with his first book.

—W.A.D.M.

When Men and Mountains Meet

by H. W. Tilman; published by Cambridge University Press, 1946; pp. 226 and index, 54 illustrations, 6 maps. Price 15s.

This book by the author of the *Ascent of Nanda Devi* is only in part an account of mountaineering experiences: in, at least, one half of it relating to Albania and Italy during the Second World War there is very little concerning mountains, and yet it is this part which prompted and, according to Mr. Tilman, justifies the reference to Blake's lines from which the title is taken, "Great Things are done when Men and Mountains Meet." There are accounts of prewar mountaineering and exploration and of a few climbs such as time and place allowed during the period of war service. But readers who expect descriptions of great climbing for which Mr. Tilman was previously distinguished may experience some disappointment in this book.

It begins with an account of the unsuccessful attempt in 1939 to explore the Assam Himalaya and ascend Gori Chem, 21,450 feet. The expedition, not too-strongly equipped, reached 16,000

feet, when Mr. Tilman was attacked by malaria and one of the Sherpa porters succumbed. In this group of the Himalayas there are said to be some twenty peaks over 20,000 feet, "none of which has been looked at closely, much less climbed, and only four of which bear names." They present a challenge and hold out a reward to young mountaineers. They are not easy to reach; the country is practically unknown and is inhospitable. Porters are difficult to obtain; small parties will be essential (p. 47). Mr. Tilman has always favoured such.

In a later chapter the author describes his earlier attempts to reach the Zema Gap 19,276 feet, a deep notch on the ridge between Simvu 23,360 feet and the eastern peak of Kanchenjunga in the Sikkim Himalayas, picture 24, p. 74. Interesting details of the successful trip are contained in Chapter VI.

In the later chapters the author appears as a successful officer in the British Army, (in the Second World War), which moved over the Middle East, North Africa and Italy. He gives lively pictures of the varied life and conditions met with, and descriptions of an ascent of an unnamed peak in Irak and of Bisitum approximately 10,000 feet in Persia. A night climb of Zaghouan in North Africa was made under extraordinary conditions. None of these climbs presented in themselves unusual difficulties; the chief difficulty that Mr. Tilman experienced was to induce others to join him. Thus he was alone on the top of Bisitum.

Some readers will probably find the chapters IX to XVII, containing an account of his activities with the partizans in Albania and in the campaign against the Germans in northeastern Italy the most interesting portion of this well-written book, the illustrations of which are not equal to the text. His life with the partizans was certainly exciting, and indeed more dangerous than his climbing. One diversion of his Bellum (where the campaign ended) division was the ascent of Monte Serva, *circa* 7,000 feet, which required seven hours; and "although it was not a difficult matter, even in winter, it had the salutary effect of astonishing the natives." Mr. Tilman concludes with a warm tribute to the partizans, whom the chances of war had made his comrades.

He and Mr. E. E. Shipton, who did some fine climbing together before the war came on, were in the Karakoram Himalaya in 1939. In 1947 they returned there, and it is reported that some big climbs were made.

Mountaineering in Scotland

by W. H. Murray; published by J. M. Dent and Sons, London, 1947; pp. XII and 252; 32 illustrations, 5 maps, diagrams and index. Price 18s.

There are two notable facts in connection with this book, which is essentially for mountaineers; one is its unusual origin, the other its unique character in being the first book, so far as we know, that deals fully with rocks, snow and ice-climbing on the outstanding ridges, cliffs and the gullies of the Scottish mountains. It was composed while the author was a prisoner in Germany, and it treats climbing in Scotland as worthwhile in itself and not merely as a preparation for mountaineering in other parts of the world. Replete with fine writing and breathing the spirit of Mummery and G. W. Young, it does for the Scottish mountains what the writings of Owen Glynne-Jones did for climbing in the Lake District of England.

The climbs described are of great technical difficulty and unavoidably dangerous, although the latter element is greatly reduced in the case of such superb mountaineers as Mr. Murray and his companions. Over twenty first-class expeditions are described of which several were first ascents, notably the Clachaig Gully near Glencoe that had been attempted many times in fifty years. The climbers were never deterred by bad weather. Assembled on one occasion in the S. M. C. hut on

Ben Nevis when the rain was coming down in sheets, one of the party declared that the only thing to do was a hard climb, because it leads one to, forget the weather and concentrate on the rock; and so he induced the author to try the Slav route of the peak, so named for the two Czechoslovakian mountaineers who, with a British climber, made the first ascent in 1934. A more difficult route up the same mountain, namely by the Rubicon wall, classed as very severe and impossible in rain, because rubbers are required on its boiler-plate-like rocks is thrillingly described in Chapter Six. In the winter of 1938 there was a fall of powdery snow in the Central Highlands accompanied by strong winds, which swept the rocks clean and packed the gullies with drift, and this suggested to the author and his friends that favorable conditions might accordingly obtain on Ben Nevis to do the Observatory Ridge which had been climbed only once in winter eighteen years previously. The 2,000 feet of ice and snow-covered rock required over fourteen hours of the hardest climb before the summit was reached in brilliant moonlight, when the mountain elixir recommended by Mummery was partaken of, consisting of equal parts of rum and bovril served hot, which seems to shorten distances and to improve the weather. Only climbs that made the severest demands on mind and body appeared to have attracted Mr. Murray and his companions. The joy and physical happiness that attended their achievements are vividly communicated to the reader. Enthralling accounts of mountain adventure and varied and delicate descriptions of mountain scenery pervade the book. The descriptions are so detailed and concrete that one can follow the ascent of the Crowberry Ridge in summer and the Rubicon wall in winter from pitch to pitch. The pictures beautiful in themselves, one of the most striking being that of the pinnacle Squrr Dearg, illustrate admirably the character of the climbing, the kind of rock and the quality of snow and ice. Scottish snow, says the author, is surprisingly coherent and little given to avalanching.

Considering the circumstances under which this book was composed the writer shows an astonishing ability to relive the experiences which accompanied the climbs. He puts winter climbing ahead of summer mountaineering in Scotland, because it is then that the Scottish hills excel in the variety of conditions they present and in the beauty of the landscape. He deplores that the best mountaineering in Scotland should be so greatly neglected. Skillful on rocks as he is, and appreciative of the joys of summer climbing in Skye, the complete traverse of the Coolin Ridge being designated as the greatest day's rock climbing that he ever carried out in Scotland, or elsewhere, emphasis in this book is on the long and difficult winter ascents which required more technical skill than summer rock work. Snow and ice helped in ascending gullies, pitches and buttresses that are insurmountable in summer, and provide the additional attraction that scarcely any route is the same twice. The accumulation and condition of the snow vary so greatly that each winter ascent can afford the novelty supplied by a new or unusual ascent in summer.

Of course, mountaineering means healthy and exciting adventure; for Mr. Murray it is more than a sport that involves self-discipline. In the eloquent last chapter of his book he states his conviction of what the beauty of the mountain world can supply. Although mountaineering is not a religion for anyone of balanced intelligence, yet he thinks it can lead up to it and may help to a grasp of ultimate truth. What this is remains indefinite.

Since this book was written the author nearly lost his life while climbing last summer (1947), with two companions in Dauphine The party was swept down a couloir by falling stones to a bergschrund, and one of them, Mr. J. E. Barford, was killed. Mr. Murray extricated himself with great difficulty from a precarious position, and, after prolonged exertion, managed to rescue his other companion.

—J.W.A.H.

The Matterhorn

by Guido Rey, translated from the Italian by J. E. C. Eaton. Revised edition with two additional chapters by R. L. G. Irving. Pp. X and 278, with numerous illustrations, and notes. Basil Blackwell, Oxford, 1946. Price 15s.

This authoritative and fascinating book has very surprisingly been out of print for many years. In it one who was a thinker, endowed with an artistic temperament, acute, versatile and emotional, and who, in his intimate contact and struggle with the mountains was both self-revelatory and stimulating, lays bare his whole soul, as his friend de Amicis remarks in the Preface. This revised edition in which Baton's translation has been left almost unchanged covers every ridge and face of the peak by the aid of excellent and new pictures, and through additional two chapters which describe attempts and achievements on new routes in the present century. The original notes added to here and there by the Editor contain very interesting sidelights of information. Photographs of the four victims of the first ascent of the mountain, of Guido Rey, of Whymper, youthful and very good-looking, and of several of the outstanding guides are an interesting attraction of this edition.

The first ascent and the earlier climbs of the Matterhorn were made by the ridges of which the most important are the Z'Mutt and the Furgen, the latter the more difficult of the two. British climbers, Mummery and Penhall, were the first on these and the former is credited by Mr. Irving with the first ascent of the Furgen Ridge. It is difficult however, to admit this claim since his party had to circumvent the final part of the steep cliffs under the rock tower by a long and dangerous traverse across the upper part of the east face to the Swiss ridge, the ordinary Zermatt route. It was not until the wonderful season of 1911 that the last and steepest slabs of this ridge were surmounted by the Italian climber, Piacenza, and his guides when they formed a human ladder which enabled them to get up a rock wall devoid of any holds.

Previous to this Guido Rey, who always climbed with guides, and who had ascended the peak by the Z'Mutt Ridge, became obsessed by the desire to add the Furgen Ridge to his ascents. He had already tried it unsuccessfully, being unable to surmount the difficulty which had balked Mummery. He determined, however, to complete his "exploration" of the ridge in a manner which, as his editor remarks, would hardly satisfy any British mountaineer. Ascending by the ordinary Italian route with guides, who carried two long rope ladders, one of these was let down over the tower to the ledge where the party had previously stuck. Then each climber descended by the ladder and was pulled up in turn, and thus the "exploration" of the Furgen Ridge was completed. Rey did not however, claim that this procedure constituted a genuine ascent but he was satisfied; "this fantastic feat assuaging the restlessness of his mind," haunted by visions of a few yards of precipice that had baffled all his efforts to ascend, p. 234. As if by way of consolation he quoted the lines of Ovid:

Rem facias rem, si possis recte
Si non, quocumque modo rem.

It was not until this century that all the faces of the Matterhorn were attempted and conquered. It is intelligible that they were attempted later because their angles of ascent are steeper than those of the ridges, and they are more dangerous because of exposure to falling stones for which the mountain is notorious. Mr. Irving gives vivid accounts of the most outstanding of these attempts in the final chapter entitled "The Last Two Decades," thus bringing the history of the mountain up-to-date.

One of the most notable and most daring was that up the north face by the brothers, Franz and Toni Schmidt, of whom a photograph is given; a climb that required three days and involved spending two nights high up in the mountain. A second ascent of this face was made four years later by two amateurs who were forced to make two bivouacs before reaching the summit, but a few days later Dr. Baur with a guide made the same ascent and got down to the Belvedere Inn on the Hornli in one day, thus showing how an experienced pathfinder can reduce the time. These successes aroused the desire of Italian mountaineers to do some sensational climbing_ for the credit of their Fascist-dominated country; among them being the well-known climber Benedetti, who with guides, ascended the south face and later the unclimbed east face, less difficult, but more stone swept, in regard to which the Editor remarks that only men with a fanatical desire to place a new ascent to their own credit and that of their nation could be attracted to this route. These later climbers spent hours in hammering in pitons, driving them in at places sufficiently secure "to prevent their falling in the unlikely event of their falling asleep." The Furgen Ridge is now a piton-dotted route. Had Guido Rey resorted to the use of the instruments of roadmakers or roadbreakers, he might have surmounted the final obstacle of this ridge.

Now that all the ridges and faces of this unique peak have been climbed, unique in the combination of height with; a beautiful and dramatic form, and although it is so crowded in fine summer weather as to be dangerous even on the easiest routes on account of loose stones which are apt to be showered down by incapable and careless climbers, "on one day last summer (1947) over 90 persons are reported to have been on the mountain," has it lost its charm? Is it spoiled? Mr. Irving gives a negative answer. Its architecture is on a grand simple scale which will appeal to those whose souls are stirred by an unusual combination of height and beauty. To any one who knows it at firsthand, this book with colored frontispiece showing the mountain in its most lovely and majestic aspect, and containing admirably enlightening pictures and sketches of the routes will be a delight.

—J.W.A.H.

Kingdom of Adventure: Everest

by James R. Ullman, published by William Sloane Associates, Inc., 110 West 57th Street, New York 19, N.Y.; 411 pages, 29 illustrations, three maps. Price $4.75

It should be explained right at the outset that Mr. Ullman is primarily the editor of this book, as it consists mainly of direct quotations from the writing of Everest climbers and others closely identified with the mountain. Ullman contents himself for the most part with brief connecting paragraphs to help secure continuity.

Selections have been made with an eye to telling a connected story, and the books or periodicals in which the selections first appeared are conveniently listed at the end of each excerpt as well as all together in a reading list which also includes books partly about Everest. A glossary of mountaineering terms will be appreciated by non-climbers, but one might suggest that pronunciation of the awkward-looking Welsh "cwm" might be indicated.

Short biographical notes about the chief climbers associated with Mt. Everest will be welcomed. The subject index seems to fill every need for ready reference.

Mountaineering readers, mindful of Ullman's presentation of the purely mountaineering aspects of The White Tower as well as mishandling of climbing technique in Time magazine, cannot help wondering how readily he won permission from British sources to compile this book, for,

whatever the author's intentions, the fact remains that most readers accepted the American, German, Englishman and Frenchman in The White Tower as typifying climbers of their countries.

However, Ullman can be said to have redeemed himself fully in this book on Everest, which has been a purely British venture. As anybody familiar with the Mt. Everest literature knows, all the climbers who have written of the great mountain have written passages worthy of their subject.

Mr. Ullman has shown fine judgment in the material selected, not only from that point of view, but also for its significance in showing what was achieved and the nature of the difficulties. He has succeeded so well that he may deter some readers from trying to get the books from which he quotes, though the author probably believes rightly that his book will have the opposite effect.

Illustrations drop somewhat below the quality found in the books in which they first appeared, their appearance suggesting their having been copied from the printed page rather than reproduced from original photographs.

Mr. Ullman holds out little encouragement to the belief that another Mt. Everest expedition can be launched until conditions in Asia change greatly.

—W.A.D.M.

Hill-Top Tales

by Dan McGowan; published by Macmillan Company of Canada, Toronto; 266 pages, 22 illustrations. Price in Canada, $3.50.

This is Dan McGowan's fourth book. Possibly some readers may feel that the title gives little clue to the nature of the contents of the book, although it is concerned almost entirely with the Rocky Mountains which the author knows so well. But the author's preface states clearly that "This book deals mainly with the doings and adventures of many interesting people who have appeared against the magnificent back-drop of the Canadian Rockies and there acted their several parts in the greatest of all dramas."

Historical figures do appear, but Mr. McGowan does not write as a historian (although his historical background seems correct), and his approach to his subjects is in the style he has made very much his own in previous books as well as in his public lectures. In anecdotal style he tells of climbers, outfitters, prospectors, Indians and park wardens, particularly the warden who startled Ottawa headquarters by the bald notation in his report that he had taken time out to bag a couple of bandits.

In describing how N. B. Sanson climbed Sulphur Mountain to hoist a flag in honor of the visit of Their Majesties, The King and Queen, to Banff, the wording could have been improved upon — "the long steep climb of 8,000 feet" may be mistaken for the vertical ascent instead of the actual height of the mountain. Illustrations are excellent.

—W.A.D.M.

A book by Frank Smythe on the Canadian Rockies will be distributed in Canada by the Macmillan Company of Canada, Toronto. It is expected before midsummer.

The Unknown Mountain, by Don Munday, published by Hodder and Stoughton, London, has been delayed by conditions in Britain, but is expected to be issued at an early date.

Wild Flowers of Western Canada, by Don Munday, is being published by McClelland and Stewart, Toronto, but has been delayed by a printers' strike. No date of publication has been announced.

ALPINE NOTES

Snow And Ice Research Conference

While mountaineers appreciate the need for understanding snow and ice so far as they affect climbing, it is probable most of them know as little as nearly all other Canadians about the host of ways in which these substances touch the economic life of the country.

The writer was one of seventy delegates who were invited to attend a Snow and Ice Research Conference in Ottawa in September, 1947, called by the Associated Committee of Soil and Snow Mechanics and the Associated Committee on Geology and Geophysics operating under the National Research Council of Canada. I was privileged to become a member of a sub-committee of the conference which met (as a sub-committee) again in February, 1948.

Among the suggested and continuing research projects mentioned at the conference were long range studies of the volume decrease of glaciers, and the establishment in Canada of observation and research stations for prediction of snow-slides affecting railways, highways and skiers in the mountains. It is hoped to adopt Swiss methods of bringing down impending avalanches.

Other fundamental research dealt with correlation and expansion of existing snow surveys, and standardization of data so obtained; maps of snow cover and its seasonal variation; the physics of snow melting, particularly as related to absorption of solar heat; knowledge of the properties of the various types of ice and conditions under which they are formed; the importance of cyclic trends of solar radiation as affecting severity of weather; seasonal forecasting of snowfall.

Under hydrology and meteorology: correlation of snow accumulation and run-off; accurate prediction of run-off, and related problems.

Under snow control and clearance came various things connected with drifting snow, snow removal, design of self-clearing highways, anti-slip treatment of roads and sidewalks, and development of non-injurious chemicals for road treatment.

Over-snow travel dealt with properties of snow as affecting skis, sleds, toboggans; design of tracked vehicles, and starting them in cold weather; take-off and landing with aircraft skis. Heating of sliding surfaces had not been found of wide value.

Agricultural effects included evaporation from snow surfaces as affecting snow storage; snow in relation to irrigation; drift prevention in dry farming areas; run-off as affecting erosion and soil conservation; snow as a fertilizer, as checking frost penetration, and promoting absorption of snow meltwater; the effect of permafrost (permanently frozen soil) on crops and plant growth.

General ice problems included strength and friction of ice; means of increasing or reducing such properties; the critical conditions under which various types of ice are formed, and means of preventing their formation against dams and other structures; pressure of ice against large engineering structures (fuller knowledge might cut construction costs); prevention of ice jams; effect of rain on ice; storage of ice for refrigeration purposes; rapid means for detecting thickness and strength of sea ice.

Navigational problems included prevention and removal of ice from various parts of ships; means of predicting the close of the navigation season; possibility of lengthening the navigation season on the Great Lakes; more effective clearing of ship channels; means for controlling ice movement under wind; navigation in Arctic drift ice; forecasting iceberg seasons, and tracing paths of icebergs.

De-icing problems concerned data on super-cooled liquid particles in air in relation to icing

aircraft in the air and on the ground; ways to de-ice electrical conductors, and elimination of the so-called "galloping" conductors.

Under permafrost came identification and mapping of such areas, nature of the soil where it occurs, means of lowering the permafrost level, foundations on permafrost, and the thermal conductivity of frozen ground.

Some engineering problems presented included frost boils and heaving of roadways; depth of frost penetration in relation to laying pipes; airborne machinery for making airports on rolled snow or frozen lakes, and various matters related to storing and transporting liquid fuel in the far north.

Under electromagnetic subjects came such things as the effect of blowing snow and ice crystals, and the electrostatic charges on snowflakes, on ultra-high frequency radio waves, and on navigation and communication; detection of snow storms by electromagnetic waves, as well as depth of snow and ice by the same means.

Under purely military problems came the effect of snow on penetration of missiles and the fragmentation of bombs and shells. Comfort problems covered clothing in the far north, physiological and psychological effect of proper clothing and food, housing, and development of survival methods.

Proceedings of the September meeting under the able chairmanship of R. F. Leggett and Dr. J. T. Wilson have been published by the National Research Council under the title of *The Proceedings of 1947 Conference on Snow and Ice, (Technical Memorandum No. 10 of the Associate Committee on Snow and Soil Mechanics).*

The Fatal Avalanche On Mt. Serra

Hazard of wind-slab avalanches on Canadian mountains is limited mainly to winter mountaineering, but in the Mt. Waddington region of the Coast Range should be expected in summer at the higher elevations.

The weather pattern before the fatal avalanche on Mt. Serra, as described to me by survivors, was such as to make it probable that a wind slab formed and was subsequently buried to a depth where its presence might not be found without very thorough search to depth. Snow often consolidates with amazing slowness in this region.

Twenty-seven days after the avalanche fell the line of breakage showed important change in the clean-cut face typical of wind slab. I noted that on a clear day the sun struck this slope at 8:00 A.M., but thawing at about 11,700 feet probably had little to do with starting the avalanche. "There is no rule yet discovered to say when a wind slab will avalanche," states Gerald Seligman in "Snowcraft and Avalanches," p. 127, *Alpine Journal,* November, 1947 Athol E. Agur was killed in 1927 at an elevation of about 4,000 feet near Vancouver by a wind slab buried nearly three feet below the surface.

—W. A. Don Munday

NEW ASCENTS AND VARIOUS EXPEDITIONS[1]

COMPILED BY E. R. GIBSON

SOUTHERN ROCKIES

Alexandra-Lyell Group

Mt. Oppy (10,940 feet). First ascent, August 3, 1947. Ron Davis, John Oberlin, Don M. Woods, p. 100.

NORTHERN ROCKIES

"Fable Mountain" (8,865 feet). First ascent. This is an unnamed rock peak of striking appearance north of Exshaw. On May 11, J. F. Tarrant, L. Parker and R. C. Hind, from a camp on the creek due east of the peak, ascended by a stream north of the peak until easy scree slopes could be ascended to the left, leading to the northeast ridge. This afforded several hundred feet of fairly difficult climbing with two short but severe cracks. Above is a small plateau and the rest of the ascent was over easy scree, slabs and snow. Descent was by the northeast face swinging to the left and down a long snow couloir leading to the head of the creek which runs along the north side of the peak.

Mt. Kidd (9,600 feet). First ascent, June 14, 1947. J. F. Tarrant and R. C. Hind from a camp at the fork of Ribbon Creek, reached the north ridge at a large window, by way of a small glacier lying below the peak. Three or four hundred feet of difficult climbing on steep and somewhat loose rock led to a large plateau and thence the ridge was followed to the summit, one or two steep steps being turned on the left. An easy descent was made by the west ridge and north face over scree, slabs and small ledges to Ribbon Creek above a fine waterfall, whence goat trails were followed down the cliffs to the valley floor.

Confederation Group

Mt. Confederation (9,740 feet). First ascent, July 10, 1947. Ruth and John Mendenhall, p. 55.

Maligne Group

"Windy Castle" (circa 9,500 feet. Three miles southeast of Mt. Kerkeslin. First ascent, August, 1947. Henry Hall, John Ross, Noel Odell, Frank Smythe, Dave Wessel, p. 75.

Colin Range

"Medicine Peak No. 3" (circa 9,000 feet). Third peak counting from the southeast end of the range above Medicine Lake. First ascent and traverse, June 20, 1947. Rex Gibson, John Ross, Frank Smythe. Ascent by the southwest face in four and a quarter hours over slabs of dolomitic

1 This section of the Journal is designed to present in brief form new Canadian ascents and expeditions of interest each year. In cases where articles on these climbs appear in the current Journal only the page reference is given. The degree of completeness in this section of the Journal will depend upon the co-operation of members who are invited to contribute to this feature. Contributions should be sent to the Editor not later than December 1 of each year.

limestone; steep near the summit. Descent by the northeast face in two hours to the valley floor near Beaver Lake.

Mt. Colin (8,815 feet). First ascent and traverse, August, 1947. John Ross, Noel Odell, Frank Smythe, p. 77.

Columbia Icefields Group

Mt. Woolley (11,170 feet).Third ascent and new route via maineast glacier between Woolley and Diadem, August, 1947.John Ross, Dave Wessell.

"Mushroom Mountain" (circa 10,600 feet). One mile east of Diadem Peak. First ascent, August, 1947. Noel Odell, p. 80.

Mt. Athabaska (11,452 feet). New route up, via north glacier and central ice ridge of the north face (steep step cutting required). August 21, 1947. Rex Gibson, Graham McPhee, Noel Odell, Frank Smythe, p. 81.

Lloyd George Group, Northeast British Columbia

"Recce Ridge" (8,400 feet). First ascent and traverse, July 5, 1947. Rex Gibson, John Ross, Dave Wessel.

"Survey Peak" (7,700 feet). First ascent, July 10, 1947. Rex Gibson,Henry Hall, Dave Wessel.

Unnamed Peak (7,600 feet). One mile south of "Survey Peak." First ascent, July 10, 1947. Noel Odell, John Ross, Frank Smythe, p. 47.

"Mt. Glendower" (9,520 feet). First ascent, July 15, 1947. Rex Gibson, Henry Hall, John Ross, p. 47.

"Mt. David Lloyd George" (9,570 feet). First ascent, July 17, 1947. Rex Gibson, Henry Hall, Noel Odell, John Ross, Frank Smythe, Dave Wessell, p. 47.

"The Cloudmaker" (7,900 feet) and "Little Cloudmaker" (7,400 feet). First ascent, July 22, 1947. Frank Smythe, Dave Wessel, p. 50.

Mt. Crosby (8,500 feet). First ascent, July 24, 1947. Noel Odell, Frank Smythe, Dave Wessel, p. 49.

"Bardsey Ridge" (8,200 feet). First ascent, July 24, 1947. Rex Gibson, Henry Hall, John Ross.

"Mt. Criccieth" (9,200 feet). First ascent, July 25, 1947. Rex Gibson, Henry Hall, John Ross, p. 49.

Mt. David Lloyd George" and "Mt. Glendower." First east to west traverse, July 26, 1947. Noel Odell, Frank Smythe, Dave Wessel, p. 49.

A number of minor summits were also climbed in this area.

SOUTHERN SELKIRKS

Battle Range

"Beowulf Peak" (circa 9,600 feet). First ascent, July, 1947. Norman Brewster, Betty and Andrew Kauffman, p. 14.

"Obstacle Mountain" (circa 9,000 feet). First ascent, July, 1947. Norman Brewster, Betty and Andrew Kauffman, p. 17.

Mt. Butters (circa 10,700 feet). First ascent, July, 1947. Norman Brewster, Betty and Andrew Kauffman, p. 16.

COAST RANGE

Reliance Creek Group

Unnamed Peak (circa 9,000 feet). Lowest peak of the Reliance group. First ascent, August 5, 1947. Herman Genschorek, Bob McLellan.

Scimitar-Cataract-Tellot Glaciers Group
Harvard Mountaineering Club Expedition, pp. 148-171.

"Frontier Mountain" (circa 10,500 feet). Incomplete ascent to 9,800 feet, July 1, 1947. Fred Beckey, Lawrence Miner.

"Mt. McCormick" (circa 10,500 feet). First ascent, July 17, 1947. Fred Beckey, Harry King, Francis Magoun.

"Mt. Shand" (circa 10,500 feet). First ascent, July 18, 1947. Francis Magoun, Graham Matthews, David Michael.

"Mt. Tellot" (Two summits, circa 11,500 feet and 11,000 feet). First ascent, July 18, 1947. Fred Beckey, Harry King, Leonard Winchester.

"Mt. Dentiform" (circa 10,600 feet). First ascent, July 19, 1947. Fred Beckey, Francis Magoun, Leonard Winchester.

"Mt. Shiverick" (circa 9,600 feet). First ascent, July 17, 1947.William Putnam, Charles Shiverick.

"Mt. Shultz" (circa 9,900 feet). First ascent, July 18, 1947. William Putnam, Charles Shiverick.

"Mt. Heartstone" (circa 10,000 feet). First ascent, July 20, 1947. Francis Magoun, Graham Matthews, David Michael, William Putnam.

"Cataract Peak No. 4" (circa 10,000 feet). First ascent, July 21, 1947. Francis Magoun, Graham Matthews.

"Mt. Mercator" (East Cataract Peak, circa 9,500 feet). First ascent, July 21, 1947. David Michael, William Putnam.

"Mt. Williams" (circa 9,800 feet). First ascent, July 22,1947. Francis Magoun, Graham Matthews.

"Mt. Despair" (circa 9,500 feet). First ascent, July 22, 1947. David Michael, William Putnam.

"Mt. McCowan" (circa 9,500 feet). First ascent, July 22, 1947. David Michael, William Putnam.

"Claw Peak" (circa 9,500 feet). First ascent, July 21, 1947. Fred Beckey, Harry King, Charles Shiverick, Leonard Winchester.

"Frontier Mountain" (circa 10,000 feet). First ascent, July 29, 1947. Fred Beckey, Francis Magoun, Graham Matthews.

"Mt. Delusion" (circa 10,000 feet). First ascent, July 30, 1947. Harry King, Leonard Winchester.

"Threshold Peak" (circa 9,600 feet). First ascent, July 31, 1947. Harry King, Graham Matthews.

"Hermit Peak" (circa 10,000 feet). First ascent, July 31, 1947. Fred Beckey, Francis Magoun, Leonard Winchester.

"Outpost Mountain" (circa 10,500 feet). First ascent, August 2, 1947. Fred Beckey, Francis Magoun.

"Mt. Roovers" (circa 10,600 feet). First ascent, August 3, 1947. Harry King, Francis Magoun, Graham Matthews.

"Claw Peak" (circa 9,500 feet). Second ascent, August 11, 1947. Fred Beckey, Harry King.

"Mt. Asperity" (circa 12,400 feet). First ascent, August 13, 1947. Fred Beckey, Harry King, Francis Magoun, Graham Matthews.

Also a number of minor pinnacles and summits in this region.

Group between the East and West Branchesof the Homathko River

"Pagoda Peak" (circa 10,400 feet). First ascent, August 23, 1947. Fred Beckey, Graham Matthews.

Scimitar-Cataract-Tellot Glaciers Group Sierra Club Expedition, pp. 144-147.

"Mt. Projectile" (circa 9,800 feet). First ascent, August 11, 1947. Fletcher Hoyt, Ulf Ramm-Ericson.

"Mt. Dentiform" (circa 10,600 feet). Second ascent, August 16, 1947. Rupert Gates, Fritz Lippmann.

"Third Claw Peak" (circa 9,100 feet). First ascent, August 17, 1947. Robin Hansen, Richard Houston, Fletcher Hoyt.

"Mt. Heartstone" (circa 10,000 feet). Second ascent, August 17, 1947. Rupert Gates, Ulf Ramm-Ericson.

"Dragonback Peak" (circa 10,700 feet). First ascent, August 19, 1947.

"Eaglehead Peak" (circa 10,800 feet). First ascent, August 19, 1947.

"Stiletto Needle" (circa 11,400 feet). First ascent, August 20, 1947. Rupert Gates, Fritz Lippmann with King and Magoun of the H. M. C. party.

"Mt. Wilson" (circa 11,800 feet, lower peak of "Mt. Serra"). First ascent, August 20, 1947. Robin Hansen, Fletcher Hoyt, Richard Houston, Ulf Ramm-Ericson.

"Mills Tower" (circa 10,000 feet). First ascent, August, 1947.

"Mt. Dentiform," east peak (circa 10,600 feet). First ascent August, 1947.

"Mt. McCormick," east peak (circa 10,300 feet). First ascent, August, 1947.

"Fourth Claw Peak" (circa 9,100 feet). First ascent, August, 1947.

"Mt. Argiewicz" (circa 10,900 feet). First ascent, August, 1947.

"Tellot Peak" (circa 11,000 feet). Second ascent, August, 1947.

"Mt. Shand" (circa 10,500 feet). Second ascent, August, 1947.

PURCELL RANGE

Spillimacheen Group

Unnamed Peak (circa 9,300 feet). First ascent, July, 1947, Sterling Hendricks, Donald Hubbard, Alvin Peterson, A. Wexler, p. 143.

CLUB PROCEEDINGS

GLACIER CAMP

July 13 to July 26, 1947

"The Selkirk Mountains have their own lovers to whom no snows are so white as the Selkirk snows and no clouds so radiant, no forests so darkly beautifully green. There the cedar, hemlock, fir, spruce, grow together in the rich valleys, climbing in serried ranks to meet the blue ice, softening every sharp outline to a gentle undulation. There hang myriads of glaciers festooning the high mountain walls, and there the curved mounds and cornices of driven snow beautify the harsh mountain-faces ... No man (and the word includes woman) can climb above these forests and over these glaciers, measuring these peaks with their own footsteps, without becoming thrall to the snowy Selkirks."

These words written over thirty-five years ago by our beloved Elizabeth Parker will be fully appreciated both by those who came to revisit their old haunts and by those who made their first acquaintance with the Selkirks during the Club's forty-second annual camp held at Glacier this summer.

The camp was located on the old Canadian Pacific Railway Glacier House site, very familiar ground to many Club members, for at the same location were held the Sir Donald Camp of 1932 and the Arthur O. Wheeler Camp of 1941. It is safe to say that no other spot in the Canadian mountains epitomizes so well the rise of mountaineering in Canada and the Alpine Club of Canada may well be proud of its stalwarts of yesteryear who so richly contributed towards this advancement. And the climbing done there this summer together with other Club business transacted there adds another very full and interesting chapter to Selkirk and Club—for the two are inextricably joined in history.

Once again the camp enjoyed fine weather making possible many climbs and varied excursions. Several parties visited Cougar Valley and passed through the Nakimu Caves under the leadership of Jim Butterworth of Glacier. Other expeditions which proved very popular were made to Marion Lake, Glacier Crest, the Asulkan and Illecillewaet glaciers, Perley Rock, and the beautiful trail through Baloo Pass.

At the new Hermit Hut, recently built for the Club by Mr. Dowler, a fly camp was established for climbs of Mts. Tupper, Rogers, and the Swiss Peaks. The former proved the most popular climb made during camp no less than thirteen parties visiting it.

From the main camp climbs were made of McDonald, Avalanche, Eagle, Uto, Sir Donald, Terminal, Castor, Pollux, Leda, Afton, Abbott, and Cheops. Bivouac camps were located on the Sir Donald trail for those not wishing to make the Sir Donald climb from main camp; while another bivouac camp at Sapphire col was used to climb Mts. Bonney, Swanzy, and Clarke Peak. In addition several parties made the tour to Glacier Circle, and one energetic party invaded the Bishops Range via Donkin Pass and the Black Glacier making what is believed to be the second ascent of Cyprian Peak. Altogether a very full climbing program was carried out.

Such a full and varied list of climbs would have been impossible without the excellent and unselfish services of our volunteer guides. Those leading parties included Mesdames Brett, Pinley, DeLacy, Gale, and Messrs. Beattie, Brett, Brooks, Chamberlain, Clapp, Cuthbertson, Erskine, Gaebelein, Graves, Grunebaum, Hind, Ho, Kay, Kauffman, Livingston, Melville, McCarter, Nicholls, Parkes, Reynolds, Robinson, Sharpe, Sparling, Tarrant, Vallance, Young.

A very complete Climbing Record was kept by Major F. V. Longstaff as a useful reference for the Climbing Committee. His pamphlet on the history of Glacier House was in great demand and the supply soon exhausted.

Thanks to Major Peters, with his very efficient truck, his willingness to help out at all times, the matter of transportation, both members and baggage, presented no difficulties. The erection and maintenance of the camp was efficiently handled by our Camp Manager, Charlie Richardson, and his boys. Charlie made good use of the marquees which had been recently purchased by the Club, and was able to provide adequate accommodation for all comers. We owe special thanks to Park Warden Nelles for his many kindnesses and helpful hints during our stay at Glacier.

The campfire programs were organized by Mr. E. Brooks, assisted by Mr. H. E. Sampson, and Mr. S. R. Vallance. In responding to the Club's welcome to Sir Oliver and Lady Wheeler, Sir Oliver expressed their great delight in once again visiting the Selkirks and gave us some very interesting anecdotes of his early climbing there. We were glad to welcome Captain A. H. MacCarthy, who gave some very good advice to those aspiring to high climbing; Dr. Pearce, who introduced us very gently to some of the sun's "gyrations;" Phil Sharpe, who told us of the part played by the 10th Mountain Division in the Italian Campaign. The Vancouver Section "Night" under the baton of Fred Parkes proved very popular and we were treated to a repeat performance. Dr. Frank Gaebelein very graciously conducted the Sunday service.

Through the kindness of the citizens of Glacier it was possible to use the schoolhouse where the color transparencies of Miss Hendrie and those of the Club's Photographic Competition were shown. Andy Kauffman gave us a most interesting illustrated lecture on the 1946 St. Elias Expedition.

The highlight of the camp was undoubtedly the occasion of the official opening of the Arthur O. Wheeler Hut. At this time Mr. Sampson gave an outline of its reason for being and the steps taken for its erection. Everyone agreed that the hut would serve as a most fitting memorial to one who had loved and served these mountains and the Club so well. The Club congratulated Mr. Dowler for the fine workmanship and thought he had displayed in the hut's erection.

Another happy occasion was the conferring of Honorary Life Membership on the three Swiss Guides, Rudolph Aemmer, Edward Feuz, and Ernest Feuz. In referring to them, Mr. Brooks pointed out that these gentlemen held a very special place of esteem in our hearts and that during the forty years that had elapsed since the Club first made their acquaintance they had come to be regarded by countless Club members with ever increasing affection and respect, and that it was with a sense of deep gratitude for their unselfish services and friendship towards the Club that it now had the pleasure of officially proclaiming its esteem. Sir Oliver Wheeler presented the Guides with illuminated life membership certificates on behalf of the Club, and Mr. R. J. Cuthbertson, the Honorary Treasurer, presented each with a small purse.

E. C. B.

CAMP STATISTICS

Attendance:

From Canada	116
From New Zealand	1
From U.S.A.	60
From England	1
From South Africa	1
Total	179

Persons were drawn from:

Canada

Alberta — Calgary, Edmonton.
British Columbia — Abbotsford, Armstrong, Courtney, Duncan, Golden, Glacier, Prince Rupert, Saanichton, Vancouver, Victoria.
Manitoba — Winnipeg.
Ontario —Deep River, Ingersoll, Ottawa, Port Colborne, Toronto.
Quebec — Montreal.
Prince Edward Island — Charlottetown.
Saskatchewan — Regina, Saskatoon, Shaunavon

England

Guilford.

New Zealand

Wellington.

South Africa

Johannesburg

United States

Connecticut — Washington.
District of Columbia — Washington.
Illinois — Chicago.
Iowa — Des Moines, Lansing.
Maryland — Annapolis.
Massachusetts — Boston, Cambridge, Stoneham, Worchester.
Nebraska — Omaha.
New Jersey — Monclair.
New York— Albany, Buffalo, Cohoes, Garden City, New York, Scarsdale, Stony Brook.
Ohio — Akron, Cleveland.
Oregon — Oswego, Portland..
Pennsylvania — Conschohocken, Merion, Philadelphia.
Tennessee — Nashville.
Washington — Seattle.
Wisconsin — Madison.

Representatives attended from the following A.C.C. Sections:
Calgary, Edmonton, Montreal, New York, Regina, Saskatoon, Vancouver, Victoria, Winnipeg. Also members from the Alpine Clubs of America, England, France, New Zealand, Switzerland; The Royal Geographical Society, The Appalachian Mountain Club, The Harvard Mountaineering Club, The Seattle Mountaineers, The British Columbia Mountaineering Club, The Mazamas, Sierra Club, South Africa Mountain Club.
Climbing Record:

The climbing record as shown by the climbing sheet handed in to the office gives the following information:

	Number of Parties	Total Number Of Persons
Abbott	10	154
Abbott (Mountaineering School)	2	62
Afton	2	26
Avalanche	6	45
Bonney	3	8
Cheops	4	18
Cyprian (second ascent)	1	3
Castor and Pollux	5	64
Eagle	5	48
Greens Peak	1	5
Macdonald	1	3
Rogers	1	5
Swanzy	3	8
Sir Donald	8	34
Swiss Peaks	1	10
Terminal Peak	1	4
Tupper	13	95
Uto	3	16
TOTAL	**70**	**608**

Number of climbing days - - - - - - - - - - - - - - - 11
Number of climbs (recorded) - - - - - - - - - - - - - - - 78
Average number of climbs each day - - - - - - - - - - - 7
Average number of persons climbing each day - - - - - - 55.2
Average number of persons per party - - - - - - - - - - - 7.2

The following graduated for active membership:

Avalanche:

Miss B. A. Bauman, Miss Mary Conway, Miss Deloris Chapman, Miss B. A, Best, Miss M. D. Brakenridge, Miss M. E. Green, Miss A. G. Stevenson, Miss Anne Mount, Miss Mary Hughes, Miss Marie Gleason, Mrs. F. R. Wulsin, Mr. C. E. Ford, Mr. E. F. Kemp, Mr. W. S. Mallory Lash, Mr. P. V. Livingston, Mr. Wade Morehouse, Mr. R. B. Mclntosh.

Castor and Pollux:

Mrs. H. S. Hay, Mrs. Helen Seaman, Dr. D. Fraser, Mrs. Mary Sylvander.

Eagle:

Miss Martha vonZuben, Mr. Fred J. Brownsword, Mr. G. B. Capes, Mr. Jack P. Cuthbertson, Mr. W. H. Elliott, Mr. L. M. Erskine, Mr. R. Lawthers. Mr. Bob S. McCarter, Mr. J. E. McNabb, Mr. Emmett Pettit, Mr. G. Reynolds, Mr. E. V. Starzinger, Mr. P. C. Van de Water, Mr. A. Melville, Mr. W. Sparling.

Tupper:

Mr. H. U. Grunebaum, Mr. A. H. Jackson, Jr., Mr. C. Robinson, Mr. P. E. Sharpe.

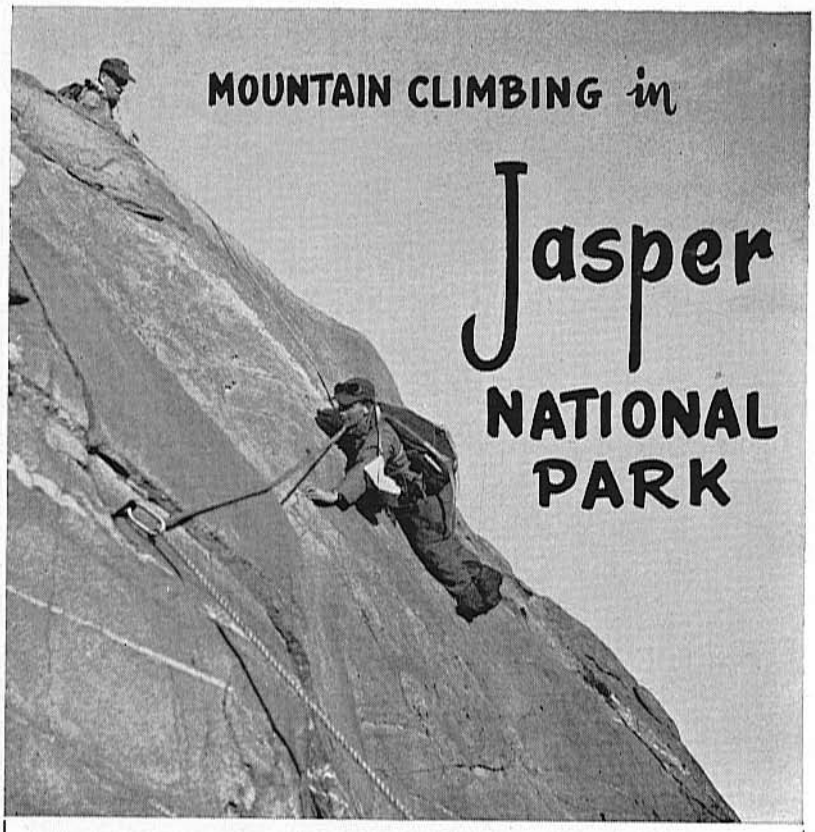
THE
ALPINE CLUB HOUSE AT BANFF

The Clubhouse will open the last week in June. Members and friends are invited.

The Clubhouse is situated on the Upper Hot Springs Road. Motorists who drive direct will find ample parking space provided.

The charge for members is $4.00 a day, non-members $4.50 a day, children twelve years and under $3.00 a day. These charges include meals.

While we expect to be able to take care of all members and their friends who will come to the Clubhouse, it will assist the Committee if advance notification is given by letter or telegram stating date and time of arrival. Before June 10 write to the Manager, House Committee, Herald Building, Calgary, and after June 10 to the Manager, Alpine Clubhouse, Banff, Alberta.



In JASPER NATIONAL PARK you'll find peaks aplenty to try your skill — peaks world-famous among the climbing fraternity.

And after your climb, for less strenuous sport, there's unsurpassed golf—swimming in the heated outdoor pool—fishing—riding—motoring—tennis. And always, of course, the friendly informality of Jasper Park Lodge, nestling beside Lac Beauvert, against the skyline background of the Rockies.

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For full particulars, see your local C.N.R. agent.

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