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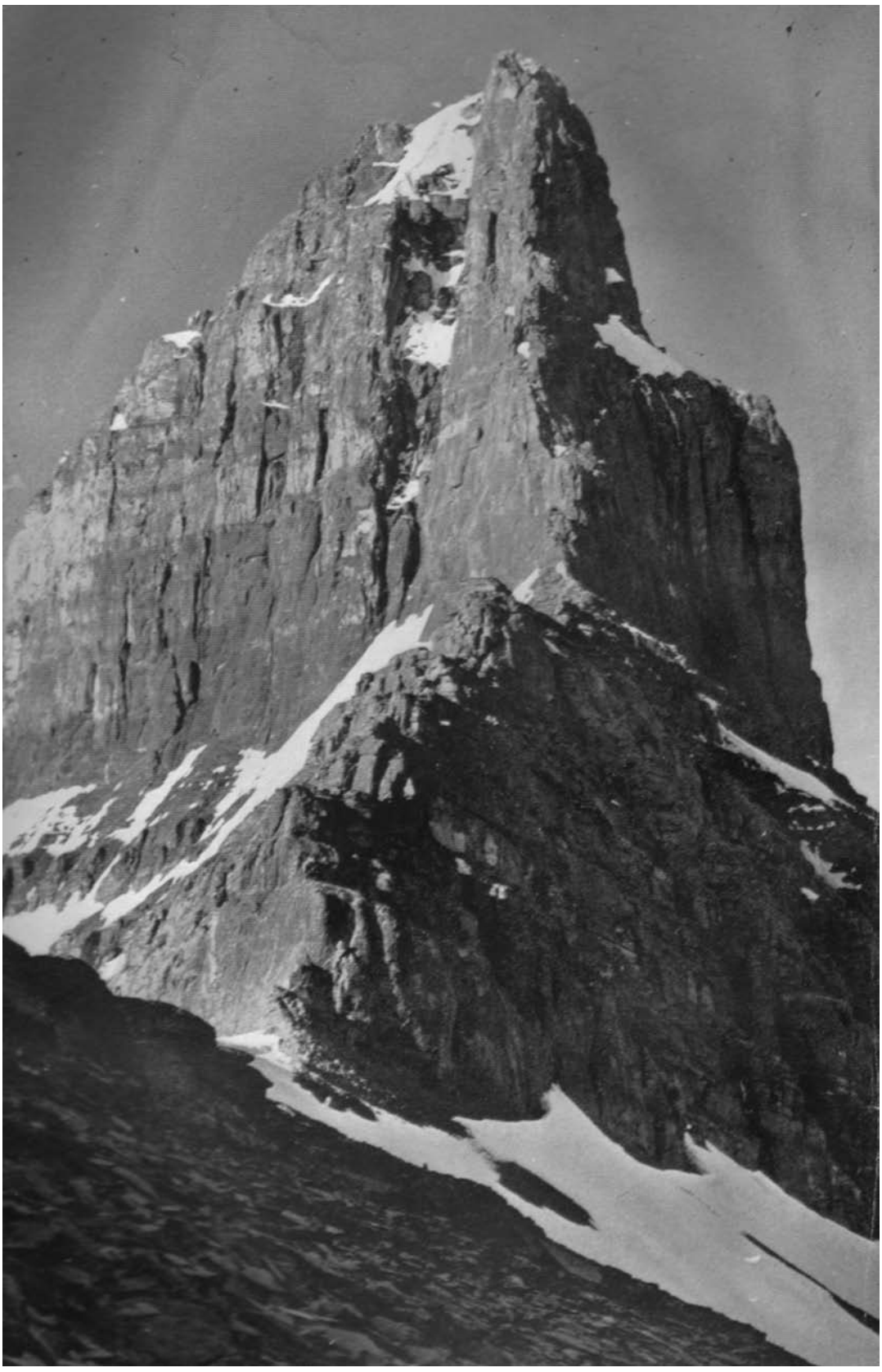

Brussels Peak. *Photo Ruth Mendenhall.*

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THE SECOND ASCENT OF MT. ALBERTA

BY FRED D. AYRES

Mt. Alberta[1] (11,874 feet), one of the major peaks of the Canadian Rockies, lies 48 miles southeast of Jasper. It can be located on a map by starting at a point on the Banff-Jasper highway seven miles north of the Columbia Icefields Chalet and extending a line due west a distance equivalent to about seven miles. The peak itself cannot be seen from the highway.

The first ascent of Mt. Alberta was made on July 21, 1925 by a party of six Japanese climbers under the leadership of Mr. Yuko Maki. Their Swiss climbing guides were Heinrich Fuhrer and Hans Kohler, assisted by Jean Weber, a skilled Swiss amateur climber. A detailed and graphic report [2] of this ascent was written by Jean Weber immediately after the climb. Unfortunately, it has never been published [3], though John Oberlin and the writer were fortunate in securing a copy from Mr. J. A. Weiss of Jasper.

Mr. Maki's party, arriving directly from Japan, traveled from Jasper up the Athabaska valley and turned east, following Habel Creek to a campsite two miles above its junction with the Athabaska. From here a high camp was established on a small plateau at 6,800 feet near the southeast base of the mountain. The climbing party of nine gained the summit ridge by climbing over ledges and cliffs on the southeast side. They reported the climb to be long and, in the upper portions, difficult. A three-man stand was used to surmount one pitch. They reached the top at 7:35 p.m. and were forced by darkness to spend the night on the summit ridge. The entire following day was used in descending. An extra ice-axe, carried up expressly for the purpose, was left on the summit with a cairn erected around it. Shortly after the climb Mr. Maki and his party embarked for Japan and, later, the Swiss members returned to Europe. In the succeeding years the axe on the summit became something of a legend and, according to an often repeated rumor, was believed to be made of silver.

Following the original 1925 climb, several attempts were made to reach the summit again, some of the parties turning back almost within sight of the goal only because of adverse weather conditions. The construction of the Banff-Jasper highway which passes within seven miles of Mt. Alberta, has provided a convenient approach to the peak from the east, and the more recent

1 For a panoramic view showing Mt. Alberta and adjacent peaks, see *Alpine Journal,* XXXV, opp. page 184 (1923). *Canadian Alpine Journal,* XXIX, opp. Page 185 (1946), shows air photo from northwest. *Appalachia,* XVI, opp. page 400 (1926), gives view from North Twin.

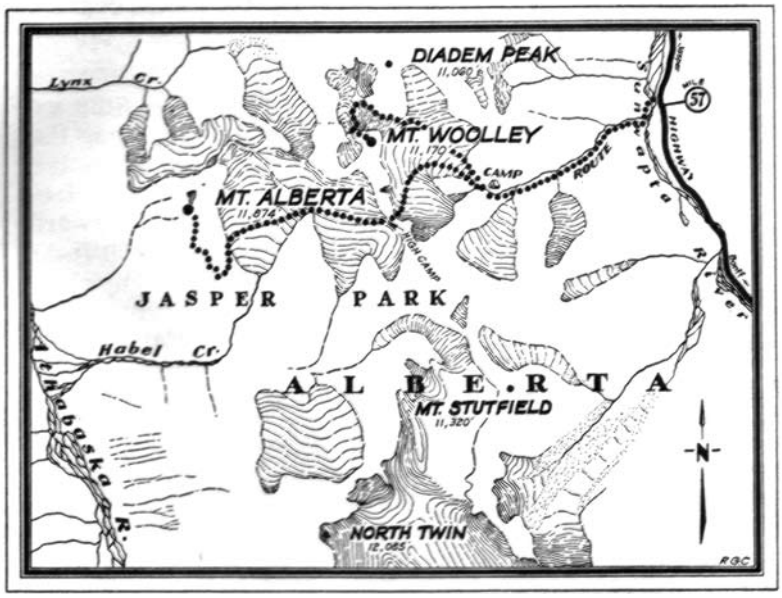
2 Shorter descriptions of the climb will be found in notes by Mr. Howard Palmer, *Appalachia,* XVI, 408 (1926) and *Alpine Journal,* XXXVII, 316 (1925). A letter by Mr. Maki to V. A. Fynn, *Alpine Journal,* XXXVII, 374 (1925), gives additional information.

3 Copies are now in the files of both the Alpine Club of Canada and the American Alpine Club.

attempts have been made by this route, a practicable one for backpacking. The first party so to use this approach was composed of Henry S. Hall Jr., Rex Gibson and Bradley B. Gilman in 1938. [4]

John Oberlin and the writer became interested in the mountain a few years ago, John being particularly active in accumulating information and photographs. Finally, during the last week in July, 1948, with a choice of two or three climbs available, we decided to make an attempt on Alberta, though it must be admitted we were not very optimistic about our chances of success. For one thing, rainy weather had kept us confined in Jasper for several days and the partially blue sky under which we were setting forth was accepted with reservations.

We checked out with the park warden, Mr. Ed. Brennan, at Poboktan Creek on July 28 and in the early afternoon of the same day, with full packs, forded the branched channels of the Sunwapta River approximately 200 yards north of mile post 57 on the highway. Then, making use of accurate descriptions furnished by Rex Gibson and Henry S. Hall Jr., we crossed to the south side of the tributary creek whose canyon and waterfalls are so prominently visible from the



highway. Here we found the well-trodden but very steep game trail which follows along the very brink of the gravelly cliffs south of the tributary stream.

After following this stream for about two miles we climbed through an enormous jumble of moraines coming down from the left and turned northwestward up onto a grassy slope, then continued up beside a series of small waterfalls. Camp was made at 7:00 p.m. above the waterfalls close to a small patch of dwarf trees near the stream. The tent was pitched not far from a large boulder which was overhanging on nearly all sides. It provided partial shelter from the cold rain which, not unexpectedly, was now falling.

The following morning we found ourselves enveloped in fog with a more-or-less steady drizzle falling. There was no apparent advantage in getting up so we remained in bed until hunger finally drove us out. Yielding to the changed wind direction, we moved our fireplace 120 degrees around the boulder and cooked a late breakfast, mostly over hot smoke.

4 *American Alpine Journal,* III, 366 (1939).

In the afternoon it cleared partially and at 3:30 we moved off to establish a higher camp, continuing along the stream by which we had camped. Above a rise in the valley floor, we gained the glacier of the Woolley-Diadem amphitheater, and followed a curving course westward over easy ice, finally reaching the rock saddle (9,300 feet) 1.2 miles south and slightly east of Mt. Woolley. The scree slope leading up to this saddle is laborious. With a heavy pack, one assumes a pace and posture advantageous for fossil hunting. Numerous specimens of trilobites were observed, though they were usually small.

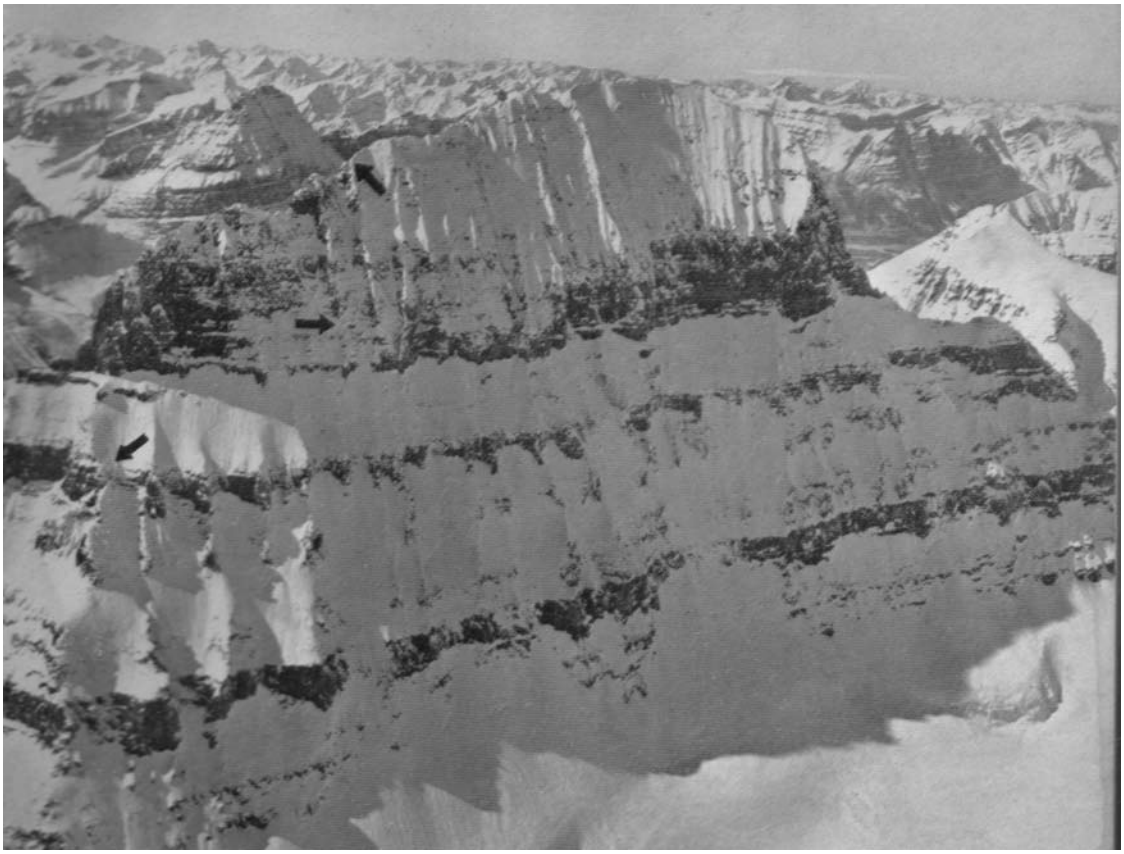
The weather had become threatening again and a cold wind was blowing through the saddle. Here we had our first view of Alberta. Due west of us, across two miles of glacier, the peak towered up into the clouds like a great black wall. It was a chilly and ominous looking prospect. We continued down the talus slope west of the saddle and set up camp on a prominent flat bench of black rock, partially snow-covered, about 400 feet below the saddle. Because of the wind we found it difficult to keep the tent down on the smooth rock slabs and were eventually forced to construct a sizable wind-break of rocks on the south side of the tent. An adequate supply of water was available 100 yards south of camp, at the lower end of a large snowfield.

The following morning, July 30, was cold but the sky was generally clear. Originally, John and I, as a result of a study of various photographs, had planned to attempt the peak from the northwest. However, in Jasper a few days before, Rex Gibson had convinced us that the southeastern approach was a much better one. We left camp at 4:40 A.M. and quickly disposed of the two-mile jaunt across the glacier toward the southeast slopes. Then, on a small moraine, we followed along the lower edge of a peninsula of snow which extends southward from the glacier and lies against the lower cliffs of Alberta proper. Just beyond the tip of the peninsula we turned steeply up over broken, scree-covered ledges and passed left of the base of the large buttress directly above. We then made a climbing traverse on talus along the base of the rock wall on our right, the edge of a snowfield gradually converging in from our left as we climbed. We came to a break in the rock wall, turned up it, and then continued, following an eastward course up debris-littered ledges and gullies onto the talus shelf above the first cliff band (as seen from the east), thus completing, on rock, a sort of S-shaped course.

Above us was the second band of cliffs. We worked northward at first, then left and more steeply upward over shattered rock stair-steps, keeping always left (south) of a long couloir. All the while, continuing a practice begun far below, we were building route-marking cairns at intervals, placed for visibility from above. In addition, we frequently encountered existing cairns, usually not visible from below. These encouraged us considerably. They seemed to be built according to two distinct styles of architecture: one a loose heaping of rocks, the other a neat stacking into well-balanced columns. We attempted to construct ours in conformity with the latter principle.

The upper portion of the second cliff band was surmounted by climbing up a steep nose between two gullies which converged upward. A sheer, smooth wall was just to the right of us. This brought us to the top of a partially detached spur from which we crossed, over a narrow gap, to the talus bench beyond. This inclined bench is a prominent feature on the southeast slopes of the mountain and lies directly under the tremendous, black upper cliffs.

All morning the view southward had been growing more impressive. In that direction were the great out-post peaks of the Columbia Icefield, among them Mt. Columbia and the North Twin, second and third highest peaks in the Canadian Rockies. From below at sunrise we had watched the illumination of the North Twin in rose and golden colors. As we climbed higher, first Mt. Columbia, then the South Twin had come into sight. Now from our high vantage point, we had a



East Face Of Mt. Alberta In March. *Photo Harry Rowed*

Lowest arrow: pt. At which upper talus bench was reached.
Middle arrow: lower end of slanting ledge leading into couloir. Top arrow: point where crest of ridge was gained.

The Gap In The Summit Ridge Of Mt. Alberta. *Photo Fred D. Ayres*

Mt. Alberta. *Photo Fred D. Ayres.*

(A night was spent at point marked x)

commanding view of the whole scene in the full light of mid-morning. This array of peaks rising above the headwaters of the Athabaska has been called by some perhaps the mightiest that the Rockies can show.

We turned again to our problem. Earlier in the morning, while crossing the glacier, we had noted on the southern portion of the summit ridge of Alberta, two broad notches and two corresponding south-facing steps. Both of the latter had appeared quite steep and our decision now was to attempt to reach the summit ridge north of the steps if possible. Accordingly we began to work our way northward on the yellow talus bench and at the same time upward. We passed from yellow to black rock and then continued between two icy patches of snow and on past the base of a rounded black buttress. From here we moved upward and northward along the face of the wall, more or less in two-dimensional stair-step fashion, over a series of ledges which were convex outward and fairly widely spaced. Eventually we reached the upper of two very long, parallel, horizontal ledges, one about 20 or 30 feet above the other. Each was about five feet wide, slanted out and down, and was covered with new snow. These two ledges extend, with numerous interruptions, for 500 yards or more along the lower southern portion of the black wall as seen from the east. They are in fact members of the lower part of a system of such ledges breaking the otherwise virtually impregnable defenses of the wall. Without a coating of snow these ledges would be not at all obvious from the saddle south of Mt. Woolley.

We advanced along the upper ledge, critically viewing a smooth, shallow, and steeply inclined trough above us. It extended upward toward evil-looking black ribs which appeared to loop back and forth high above. I started up this trough on an exploratory skirmish while John looked on dubiously. After 20 feet I encountered a cairn, built in the loosely heaped style. To me this appeared an argument for continuing farther. John, however, insisted that we first explore northward along the ledge. 1 took another look at the trough above me and came down without overly much persuasion. Before long the upper ledge became too narrow for comfort. We cautiously retraced our steps to a point where we could climb down to the lower and slightly more commodious ledge and followed it northward to the south edge of a huge couloir. Here our ledge was cut off completely, though it continued beyond the couloir. John remarked that the portion of the couloir below us looked something like a giant elevator shaft. The drop-off to the glacier was almost unbroken because the broad talus shelves were no longer below us.

With some difficulty we climbed up a thirty-foot high spur which rose above us and roped up on the little platform at its top. The wisdom of John's counsel regarding a further search along the ledges was now obvious. From here, as far as we could see upward, the route was considerably easier than the one in my trough. At the top of the spur on which we stood, we discovered to our surprise an old sling rope. It was arranged for roping down into the couloir and not down onto the ledge which we had been following. Also, we observed with some misgivings the fog which was beginning to form next to the cliffs high above.

From where we stood on the platform, a slanting ledge, almost covered by new snow, led upward toward the back of the couloir. We followed this for about 100 feet, then continued up and slightly left over rotten and quite steep rock, to a more broken area where we were able to traverse to our right into a chimney, nearly full of snow, which constituted the back of the couloir.

We followed this narrow, rather straight-walled trough for 300 feet or more. The snow in it was, for the most part, in good condition, probably offering better and more secure climbing than would have the bare rock. At one spot, presumably the habitat of a small waterfall in warmer weather, John, here leading, broke through an icy crust and dropped to his hips into the air space behind.

He struggled out, making decisive remarks on the obstinacy of the trap, and we continued. At the top of the 300-foot pitch the trough expanded and we came onto a sizable snow patch where the angle eased off a few degrees. We crossed to the north wall of the couloir and, feeling for little icy shelves under the snow, here thin, we approached the rock rib bounding the couloir on the north. John reached the crest of the rib via an icy gully, whereas I chose a rock pitch immediately right of the gully. Neither variant was wholly satisfactory as a climbing route.

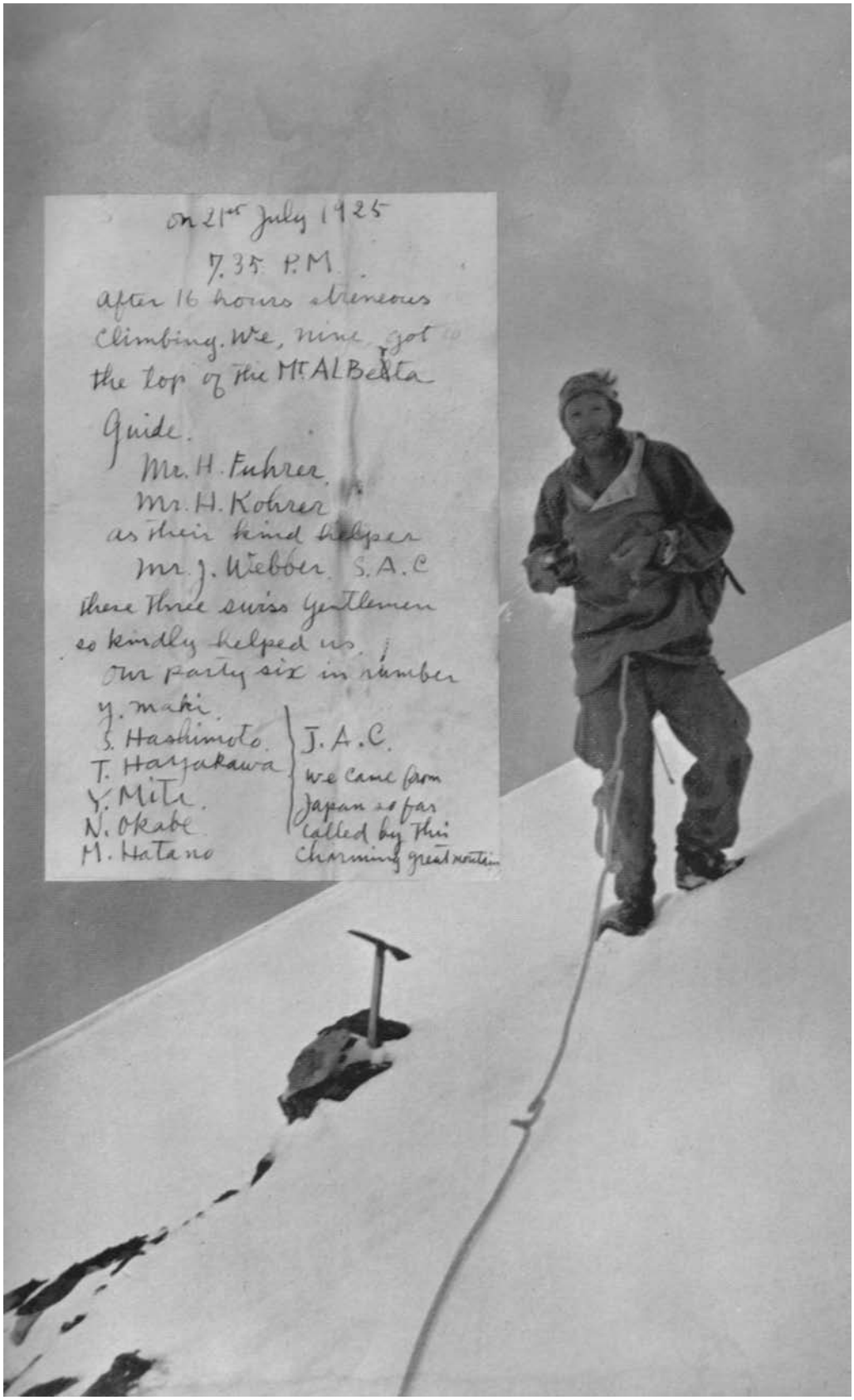
Initially the rib was very steep but it gradually merged into a broader area where, in the words of Jean Weber, "the grade was quite agreeable to the body's craving to be at intervals at ease in a straight-up human-like position." We here entered the cloud zone and soon after arrived on the crest of the summit ridge just above the northern of the two steps as we had hoped. The time was 4:05 p.m.

All day long we had been waiting for the moment when we could stand up on the ridge and make a quick dash along it to the summit. The view which greeted us was disheartening. As far as we could see through the fog the ridge was dangerously narrow, with precipitous drops on both sides, and consisted of a series of little notches and shattered pinnacles. This was going to require time. As we moved along the crest, traversing, circumventing and straddling the pinnacles, the amount of snow and ice increased. We soon passed a small, square-shaped platform, deep in snow on its east side, the only such refuge on the entire ridge and probably the bivouac spot of the 1925 party. It was becoming windy and cold with occasional whirling flurries of snow. Eventually we passed two successive snow crests, each of which we had hoped would be the summit.

Suddenly we were brought up short by something we had seen from the glacier but had forgotten—a 60-foot-deep gap in the ridge. From below it had appeared insignificant, but from here it assumed new proportions. The near side of the gap was a snow-covered ice slope, very steep and having, in the fog, an indeterminate amount of exposure. The fragile snow-saddle below, with its delicately curving crest, appeared to offer no secure belay whatever for the last man down nor for the first man up on returning. Just beyond and dimly visible was a snow crest which appeared most certainly to be the summit. Rather than turn back here, we decided on a rather desperate procedure. We drove one of our axes all the way into the hard snow a short distance back from the rim of the gap, and, using a 150-foot nylon rappel line over the axe, roped down into the snow saddle. I was delighted to have the security the fixed rope offered because, half way down, the veneer of snow over the ice was only four or five inches thick. We hitched our way across the saddle horse-back fashion, shaving off the beautifully formed crest of snow ahead of us. The ends of the rappel rope were knotted together and packed securely into the snow. With only one axe between the two of us, we had no desire for our lifeline to be blown out of reach by the wind! For 20 feet, the far side of the gap was steep but not icy. Beyond this the grade lessened and the ridge mercifully became a little broader, though we had to keep well to the left of the crest because of large cornices.

We arrived expectantly on our goal, the little snow summit, only to see another and higher one materialize out of the fog ahead. Then, as we stood, the mist thinned momentarily and revealed, beyond the nearer crest, still more of the white ridge undulating gently up to a second and still higher snow summit. We experienced all the emotions characteristic of such a situation. However, on proceeding, we were relieved to find that the ridge became relatively easy and also that the fog had made the distances appear greater than they actually were.

Without warning, John, who was ahead, let out two unintelligible and piercing yells, which gave me quite a fright since it was my axe which was back at the gap. However it developed that his shouts had only been "The axe! The axe!" I moved up a few steps and saw what was causing his



The Ice-Axe and Record Left By Mr. Maki's Party.
Photos John C. Oberlin, Herb Pownall.

excitement. Not more than 300 feet ahead, projecting out of the snow and dramatically silhouetted, was the axe left by the original party 23 years ago. The summit at last! It had taken us two hours to cover the 600 or more yards of ridge behind us.

We reached the axe at 6:15 p.m. It was standing in the top of a cairn which was all but completely buried in snow. The axe, far from being silver, was of standard Swiss manufacture, though weather beaten by long exposure. On the head, bright against the rusty steel, were the initials "M. T. H." in flashing gold letters.[5] If the axe were new and shining when placed in the cairn, it must almost have looked like polished silver. The record was inside an inverted and very rusty tin can, and was in a remarkably good state of preservation considering the length of time it had been there.

We decided to take both the axe and record down with us in the belief that such historic articles should be preserved in a museum. A notation was made on our own record stating that we were removing both items. They were subsequently given to the museum of the American Alpine Club in New York.

We remained on the summit a total of only 15 minutes, then returned along the ridge, retrieving our rappel line and axe at the gap. While we were still on the ridge the fog cleared almost completely in the south and west, revealing spectacular views that had been hidden from us for so long. First to appear was Mt. King Edward in the south, with glimpses of icefields and peaks beyond. Then, so far below us as to seem almost unreal, we saw the channels of the Athabaska River coursing over the wide gravel flats of the valley floor in a chain of a thousand intricately braided links. The downward sweep on this side of the mountain can only be described as terrific. It amounts to over 7,000 feet in a horizontal distance of two and a half miles.

On the left, the view was still obscured by a great banner of fog which was streaming outward and upward from the ridge. Quite suddenly, almost on the northwestern horizon, the sun broke through the clouds and I saw, projected on the fog banner at the left, the ghostly shadow of myself surrounded by large concentric haloes in colors brilliant as any rainbow. Extending outward from me through the thin mist was a column of shadow which appeared to converge and form my image. The Spectre of the Brocken! I had seen it before but never like this. I waved and so did the spectre, the shadow band between our arms sweeping through the fog in perfect unison. At the same time John, some 40 feet ahead, was being held spell-bound by a similar vision. He, of course, saw only his own image as I was seeing mine.

We continued along the ridge, picking our way carefully. The apparition on my left imitated me, meticulously executing every movement as I did. Then a cloud drifted before the sun and the brilliant figure faded, only to reappear a minute or two later in hues more dazzling than ever. Finally the colors grew dim for the last time, the sun disappeared, and we were left with our race against gathering darkness.

At 7:45 p.m. we turned off the ridge and started down the east wall, following the same route which we had used during the ascent. By 9:00 p.m., after two rappels and a bit of climbing, we had descended only 300 feet. We halted on a little ledge 4 feet long and 2 feet wide and prepared to spend the night since we could not safely go farther in semi-darkness. Fortunately the sky was clearing rapidly and there seemed no imminent danger of storm. We put on dry socks and heavy mittens, as well as every other item of clothing we had with us. An ample lunch cheered us considerably and we settled down after roping ourselves to the mountain as a precaution against dozing off.

5 Mr. Yuko Maki (now living in Tokyo), in a letter to T. C. Oberlin dated December 7, 1948, mentions that these initials are those of Marquis Moni Tatsu Hosokawa who was the patron of the Japanese expedition.

The night was long and there was not much divertissement. At infrequent intervals salutes boomed from the ice cliffs of the North Twin, as they had been doing ever since our arrival in the area. About midnight an arch of pale green light appeared in the northeastern sky and we hopefully waited for a display of the aurora borealis but nothing happened. The moon came up and climbed at its prescribed angle above the frigid landscape, though infinitely slowly. We shivered. Eventually a brilliant yellow sun broke over the horizon, but the light it supplied was the coldest we had seen recently.

Our cramped muscles were too jumpy for climbing. We remained on our perch for another hour until the sun's rays had perceptible warmth. The sky was almost cloud less. In the early morning the rocks were icy. Later, the rapidly melting snow began to send countless rivulets of water down the face of the black wall. The snow itself became mushy and treacherous. We had no intention of climbing down under these conditions and resorted to rappels for almost the entire extent of the upper cliffs. The general thaw was loosening the masonry and we had to be continually on the alert for falling rocks which were coming down from the wall with alarming frequency. Some of them fell from great height with no warning sound except a vicious hum as they went by, which hardly could be regarded as a warning. During the descent we made a total of eleven rappels, six of them 100 feet or more in length. Five were from pitons, the remaining six from sling ropes. No pitons were used during the ascent.

On the lower slopes of the mountain, under a balmy sun and free of the danger of falling rocks, we descended the ledges, gullies and talus slopes in sleepy fashion. After a slow, two-mile climb up the glacier we reached our tent at 5:30 p.m. We had left it practically 37 hours ago.

In conclusion the writer wishes to thank Major Gibson for his hard-won but generously-given information regarding the general climbing route. Rex would have been a member of the party had not rainy weather postponed the date of departure beyond his available time. John and I were fortunate in having reasonably good weather while we were actually on the mountain and in finding snow conditions about as good as they are likely to be on Alberta. Our predecessors of recent years were much less favored in this respect.

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MT. WOOLLEY BY A NEW ROUTE

BY DAVID WESSEL

Mt. Woolley[1] shares with Diadem Peak the glacial head of Diadem Creek, which spills into the Sunwapta River at about mile 58 on the Jasper-Banff highway. It is part of an uplift which swings north from the Columbia Icefields and effectively hides stupendous Mt. Alberta from all but a hardy few. This range is cleft by a pass between Piton Peak and Mt. Woolley, which gives access from the upper Diadem Creek basin to a glacier at the base of Mt. Alberta. Several parties have gone to Alberta by this route so that by now it is almost the "standard" approach. The trek begins with a hip-deep, pressure-bucking ford of the Sunwapta. Then it climbs on goat trails through a couple of miles of bush, lies alongside the stream for more miles, and jounces steeply on a huge morainal pile. Finally, mighty backpacking efforts are rewarded with the arrival at an exquisite timberline alp which provides a small but excellent campsite—complete with running water. If the peaks surrounding this valley have received little attention from climbers it is only because of their relative inaccessibility, and the dominance of Mt. Alberta. They are all worthy climbs in their own right.

After the Lloyd George Expedition, which is described in the *Canadian Alpine Journal,* 1948, a number of the members had gone from Jasper to establish a camp on Diadem Creek. The purpose of the camp was to investigate the climbing condition of Mt. Alberta. The members of this reconnaissance foray were Mr. and Mrs. F. S. Smythe, N. E. Odell, and Graham Macphee, all of England, and H. S. Hall, John Ross and the writer.

On August 12 the camp was well established, but miserable stormy weather prevented any far-flung activity. It was decided that, providing the weather broke on the morrow, Smythe, Odell, and Hall would go to the pass to have a look at Alberta, while John and I made a try at Woolley. The weather at daybreak on the 13th was doubtful, but at about 8:00 a.m. the sun sparkled through clearing skies and we made ready for our expeditions. The first party began climbing toward the pass while John and I started upstream. A short walk amongst scree and boulders brought us to the first patch of snowfield, which led us gradually upward to the base of the icefall which tumbles between Diadem and Woolley. While roping up we spent a bit of time investigating a large snow-choked schrund. This climb differed from most in the Canadian Rockies in that practically the whole route could be determined from camp. There could be seen from below a narrow snow couloir running between the icefall and rocky buttresses of Diadem. Obviously the most practicable route would be to follow this gully or the rocks tangent to it. This we proceeded to do, after leaving the lower snowfield. To get into the couloir we hurried nervously over a bridge choked with blue ice blocks dropped from over-hanging ice cliffs. Then came about 2,000 feet of alternate step-kicking in hard snow and scrambling on the rotten rock so familiar to climbers in this region. The gradient was approximately 45 degrees, which would have afforded rapid ascent if it were not for the frequent necessity for detouring to the rocks to avoid undue exposure from threatening icefalls. At one place I slipped from my hand and foot holds on wet rock. This mishap convinced us that falling ice was the lesser danger and we continued thereafter in the gully until we reached an easy snowfield stretching to the Diadem-Woolley col. We arrived at the 10,500-foot col in early afternoon and debated whether to continue to the original objective or to be satisfied

1 For map see page 12.

One Of The Twin Summits Of Mt. Woolley. *Photo Dave Wessel.*

with the nearer, easier Diadem summit. The reason for our concern was that the weather had again worsened and clouds began to surround us.

However, we decided to continue to Woolley, taking in the other on the return trip, if possible. The ridge was technically easy but wind peppered with stinging snow made each step an effort. Near the summit one pitch of some 30 feet became decidedly interesting, for we had to cut steps in a steep wall of ice. This was very slow going because I insisted upon chopping bucket steps for my army Bramanis. The summit proved to be twin crests of packed snow which corniced abruptly over a sheer rock wall sweeping 3,000 feet to the floor of our valley. Upon attaining the highest point at 3:30 p.m. we yodelled lustily into the void and received faint answering yells from the pass far below. On an out jutting scree pile not far from the summit a tiny cairn was found, and in it was a peach can label with the 1936 record of ascent. No trace was found of the Japanese. Before we left the chilly summit a breach in the cloud gave us a look at Mt. Alberta. It resembled a Gothic cathedral whose every buttress and gutter was plastered with ice and snow. My memory of the previous year's climb on it sent a special chill through me as I gazed at its forbidding aspect.

The journey back to the col was unexciting except for the ice pitch. Increasing storm and the late hour prompted us to forget Diadem and to hustle down to the couloir. The descent of this was a torturous repetition of the ascent : careful step-kicking in snow with occasional detours to the rocks. In one especially bad place, as John was negotiating a tricky ledge, a basketball-sized stone hurtled out of nowhere and narrowly missed him as it roared down the gully, Needless to say, we hurried as fast as proper precaution would permit. It was with immense relief that we once again regained the lower snowfield. By way of contrast, the walk back to camp over snow, morainal debris, and grassy slopes was pure delight.

The others of the party had seen enough of Alberta to be convinced of the impossibility of climbing it this year, and after a wet night we retreated to Jasper.

Our ascent of 11,170-foot Mt. Woolley is the third recorded one. In 1925 the Japanese who conquered Alberta climbed Woolley, and again in 1936 it was ascended by Cromwell and North. The distinguishing feature of our climb is that it utilized a new route. And a sporting route it is—on an impressive mountain.

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FIRST ASCENTS AT THE HEAD OF AMERY CREEK

BY DON M. WOODS

When John Oberlin, Ron Davis and I returned from the first ascent of Mt. Oppy down the Alexandra River in 1947, we cast longing eyes at the three virgin summits at the head of Amery Creek. This stream flows into the Alexandra from the south about five miles from its confluence with the North Saskatchewan River. The creek drains glaciers and snowfields on Mt. Amery, first climbed in 1929 by L. S. Amery, Edward Feuz and Brian Meredith. It also drains several glaciers on Mts. Monchy, Hooge, and Willerval, across Amery Creek to the west of Mt. Amery.

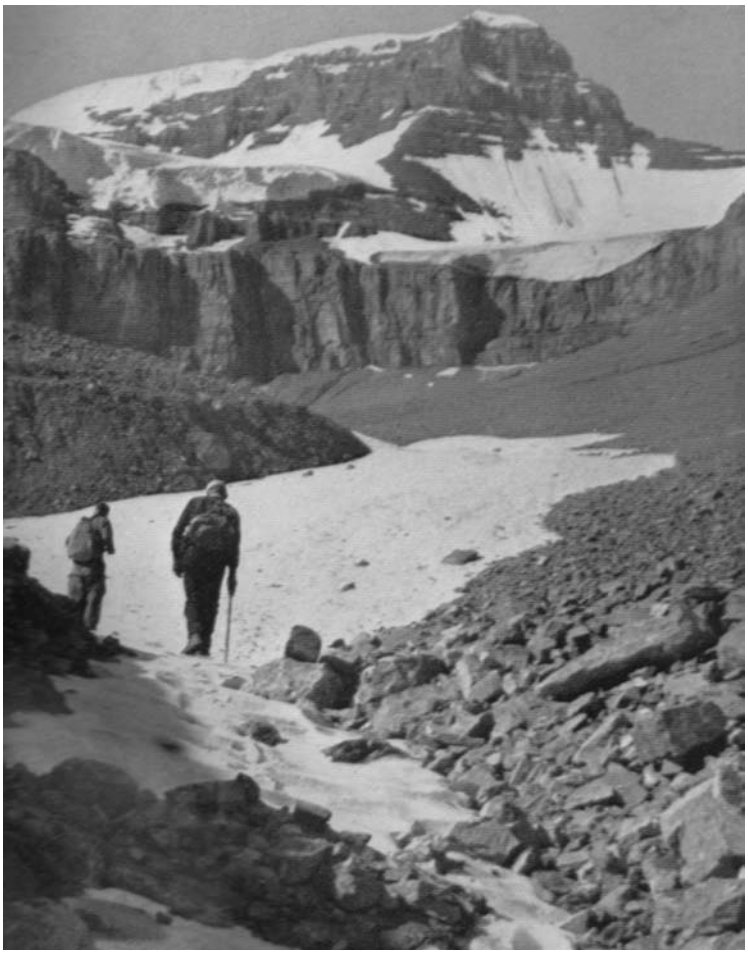
The first ten days of July in 1948 found Fred Ayres, Wallace Degen, and myself, up the Fryatt Creek Valley. The weather was terrible. Five days in a high camp at the base of Brussels Peak were ruined by rain. We were turned back by storms on three attempted climbs, one on Brussels, another on Lowell, and a third on Fryatt. One fine day afforded Fred and myself a delightful trip past lower Fryatt Lake, above the falls in Fryatt Creek, and up to the upper lake at the base of Mt. Belanger. In ten days we made only one summit, Mt. Christie, which we had also climbed the year before. This was my worst climbing experience in eleven climbing seasons in Canada.

Fred and I then drove to the Columbia Icefields campground, and established an overnight camp under the Snow Dome. Under beautifully clear skies we made ascents of Mt. Columbia and Snow Dome on skis. The weather had finally cleared for our efforts.

John Oberlin now joined us for our trip up Amery Creek. I spent an hour at the A.C.C. camp near Peyto Glacier and hurried back to join John and Fred. We camped at the public shelter two miles above Graveyard. Next morning, July 19, we were up at six o'clock and made up our packs for our four-day trip. Leaving our cars alongside the road at Graveyard, we made the fairly easy crossing of the 23 channels of the North Saskatchewan. We then followed the north bank of the Alexandra to a point about one-half mile above the mouth of Amery Creek, where we waded across the river. There were 17 channels of silt-laden water, swift and icy cold due to its glacial sources. Five or six channels were quite deep and required great care with our 55-pound packs. As I was following the other two across the deepest channel, I suddenly stepped into water up to my armpits. My pack almost carried me under. One pocket of the pack filled with water. My camera on a shoulder strap went under water and my exposure meter in a shirt pocket was thoroughly soaked.

I managed to struggle across and stopped to survey the damage. The exposure meter was filled with water, and I supposed ruined. However, two days later, after it had dried out completely, it was all right and worked perfectly the remainder of the summer. I had a 36-exposure roll of Kodachrome film in my camera with 16 exposures taken. This exposed film was a total loss, but the remaining 20 exposures in the protected cartridge were later exposed with good success. Imagine my surprise when I looked into the water-soaked pocket of my pack and found a goodly supply of tea brewed by the muddy water from tea bags in the pocket. There was plenty for a tea party but probably not very palatable. A pocket compass was ruined. A 20-year old match case, once water-proof, was now filled with well-soaked matches, but they were dried out and later worked very well. I took off my clothes to dry, except my jeans which I had taken off earlier and carried on top of my pack.

John had gone on ahead to scout a crossing of one more deep and quiet water channel. Fred helped me with my drying operations. Once again on the way, we finally reached the opposite river



Mt. Monchy. Ayres And Woods In Foreground. *Photo John C. Oberlin.*

Mt. Willerval From Flank Of Mt. Monchy. *Photo John C. Oberlin.*

bank and after climbing over a wooded ridge, were at the muddy glacial waters of Amery Creek. We were much surprised at its size, probably as large as Cataract Brook that drains Lake O'Hara.

Following the west bank of the creek, sometimes along the edge but often being forced into the dense bush by steep banks, we had heavy bushwhacking through windfalls and up steep rocky slopes. We passed two long gravel slides where we had to travel next to the water.: The mud of the cliffs was cemented into a solid mass on which it was very difficult to gain footholds. Finally we came to gravel flats of the upper creek and had much easier travelling. Some time was spent searching for a suitable tent spot, and the final choice looked anything but promising. After some construction work, however, we had a good campsite, with a large rock right next to the stream for a cook table. Our hope for clear water for drinking did not materialize and we had to use glacial water.

It was now 7:15 p.m. Our elevation was estimated at 6,000 feet. We felt we were pioneers, as we were certain that no one had preceded us into this valley. After a good supper we enjoyed a fine rest.

We were up at 4:30 next morning and away by 6:00. Continuing up the valley of Amery Creek, we followed the west bank as we had done the day before. Soon we came to a medial moraine in the upper cirque and continued to the right. Now it seemed desirable to climb this moraine to study our possible route. Ahead we were completely surrounded by high cliffs of the cirque at the head of the creek valley. Several hanging glaciers rested on the ledges above these cliff walls with a dozen or more waterfalls pouring from the top of the wall. Most of these fell free for several hundreds of feet. We had hoped to find a break somewhere in the cliff that would allow an upward advance, but there was none to be seen.

Our decision was to continue up 2,000 feet of very steep talus with rocks and limestone powder cemented together by the natural cement. This ascent required two full hours of very tiring effort. Near the top of the slope John and I heard shouting from Fred, who was ahead, to look out for falling rocks. We then had several rock bombardments from large rocks breaking loose from a melting snow slope above us. They caused us many minutes of anxiety. Finally we reached the ledges that lead around to the left to one of the hanging glaciers. These ledges were about 450 feet in length and in one spot narrowed to about one foot in width, with a long drop to the talus below. About two-thirds of the way across, the ledge we were following was nearly cut off by a broad couloir. Here we had to move cautiously to the next ledge above. A thin covering of fine gravel and sand on the ledges did not add to one's assurance. When around the corner of Mt. Willerval we could drop down on easier ledges and talus slopes to the hanging glacier. Here there were ice drips in a crevasse that made an enjoyable lunch stop.

It was now a very short and easy jaunt across this glacier and up a snow slope onto scree-covered, easy ledges. We were now on Mt. Monchy. We circled left and upward onto a large icefield above the ice cliffs of the hanging glacier beyond the one we had crossed. This is the glacier on the left as seen from the amphitheatre below the cirque wall. Continuing on this icefield, passing many ice cliffs, we crossed a broad snow ridge coming down from Mt. Hooge. Here the ice cliff ended.

We now turned half-right up the snow slope and zigzagged through many crevasses. The final crevasse was crossed over the center one of three snow bridges onto the south ridge of Hooge. Contouring around Hooge to the saddle between this peak and Monchy, we decided to climb Monchy first, reaching the summit, 10,530 feet, about 4:00 p.m. As there was no cairn, we built one and deposited our record. Retracing our steps to the saddle and continuing on we reached the

summit of Hooge, 10,550 feet, half an hour later. Another cairn was built. These two summits are really two points on one long ridge and should not be considered two separate summits. A splendid view greeted us. To the south the white pyramid of Forbes stood out prominently. When I had climbed it from the A.C.C. camp at Glacier Lake in 1940 the summit pyramid was practically bare rock. To the right of Forbes was our first ascent of 1940 which we had christened "Rosita Peak" after the English writer, Rosita Forbes. Also looming up at close range were the five Lyells, Farbus, Alexandra, and our conquest of last year, Oppy.

Our original plan was to continue on around the several miles of ridge for a second ascent of Amery, 10,943 feet, spend the night somewhere along the ridge and climb unclimbed Willerval, 10,420 feet, as we descended the next day. However, a storm was now coming in over the Lyells and we thought it would be foolish to attempt a night out with no protection anywhere on the ridge. So we descended as we had climbed, taking much care at the upper crevasse and along the ledges above the talus slope. Our descent of the talus was made in short order and we were soon into the brushy timber. Camp was reached about 9:00 p.m. We were pleased to find no bear damage.

Next morning we descended to the Alexandra and found our channel crossings much easier early in the day. The long trek along the Alexandra was soon behind us and once more we crossed the North Saskatchewan to the cars. We immediately reported our safe return to Park Warden Bill Black.

Another Alexandra exploratory trip was over. It was the third for John and the second for Fred and myself. There was still an extra day's provisions and we could have made an attempt on Willerval, following our same route up the talus slope and the ledges to the hanging glacier. From here it is only an easy jaunt to the Monchy-Willerval col. From this spot on we did not know what to expect. But as we simply could not talk ourselves into another climb of that horrible talus slope, we left the first ascent of Willerval to another party. It might be more easily reached from the next creek valley to the west, Ridges Creek, but this would involve several more miles of travel up the Alexandra, which is not easy travel. I don't know whether Ridges Creek would be any easier to follow than Amery Creek.

And so three weeks of Canadian climbing were over. The weather gods had been most unkind the first ten days, but had relented and had given us excellent weather on the Columbia Icefield and in the Amery Creek valley. Ever since I had seen the Columbia Icefield from the summit of Brazeau in 1930,1 had wanted to reach this broad expanse of ice. This summer, that 18-year old ambition was realized. We had seen rugged country along the Amery Creek valley. And so we returned to our homes in three different states to await another summer's climbing.

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CONQUERING BRUSSELS PEAK

BY RAY GARNER

The name "Brussels" owes its origin to an epic story of the First World War, according to the scant information we had been able to gather, an heroic Captain Fryatt rescued many allied personnel by a series of gallant crossings of the English Channel in his vessel, the Brussels. Fryatt was later captured and executed by the Germans. Today, Mt. Fryatt dominates the Canadian Rockies area just west of the Banff-Jasper Highway, about 22 miles south of Jasper. As the black tower just south of Fryatt looked like a ship from certain angles, it was named after Fryatt's vessel. But to us it will always be "That Old Black Devil".

In 1947 when my wife and I were making a series of films in the Jasper area, we saw Brussels many times from the highway. Its position and topography alone presented a challenge, but the real challenge lay in the stories of the attempts to climb it—some of the very finest British, Canadian, and American mountaineers had come to grips with the mountain. In addition to reported attempts, there must have been scores of others. Frank Wells, packer and outfitter at Athabaska Falls, told us that he had been packing parties in to Brussels for over twenty years.

Here was a challenge to quicken the pulse of any mountaineer—here was a story worth photographing. We decided to make a 16mm film called "First Ascent," to be used for lecturing purposes. The Harmon Foundation of New York City agreed to finance the project.

In early July of 1948 we left Phoenix and drove up to the Tetons in Wyoming to pick up two members of the Kachinas (Kachina Mountain Club of Phoenix, Arizona) who were just finishing their climbing program. Here we were greeted with the tragic news of Win Akin's death on Nez Perce. (See the A.A.C. Accident Report for 1948.) Ed George and Ben Pedrick had intended to go with us to Canada, but Ben had been with Win on Nez Perce, and he decided to go back to Phoenix with Win's parents.

We needed a third climber for our film (my wife, Virginia, would do some of the shooting but would not appear in the film). Jack "Jiggs" Lewis of Glencoe, Illinois had planned to spend the summer guiding for Paul Petzoldt and Glenn Exum in the Tetons. Jiggs jumped at the invitation to join our party. We left the Tetons on July 14.

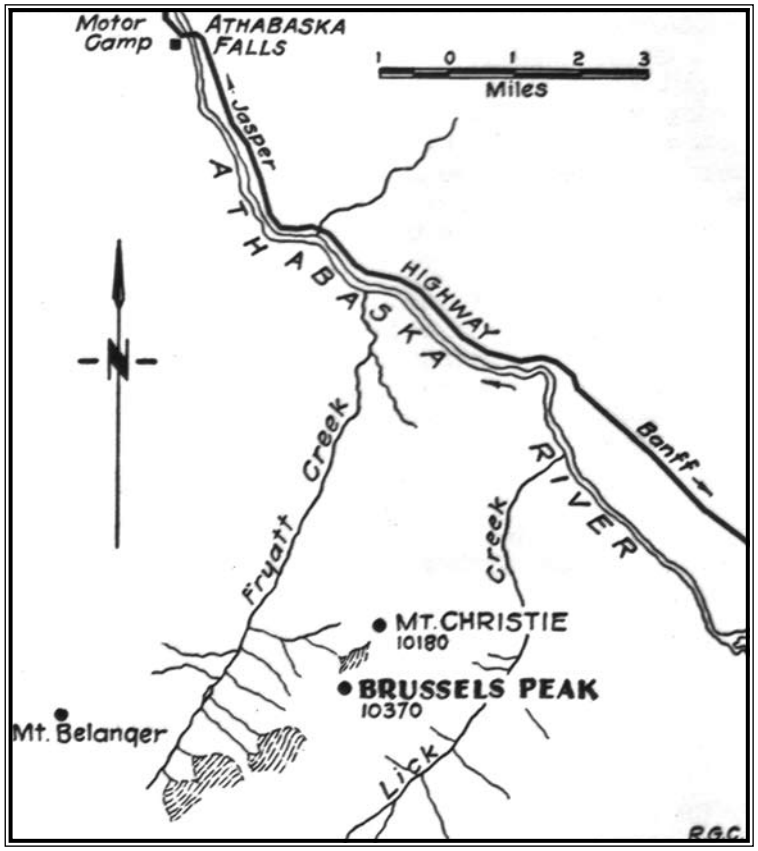
On the 16th we reached Cottonwood Camp near Jasper. We learned that Fred Ayres and Don Woods had been in to Brussels, but had had bad weather. We also heard that Fred Beckey and party were still in at the peak. Our hearts sank. We had read many accounts of Beckey's climbs, so we figured that our mountain—and our film— were gone. However, Beckey's party finally came out and the mountain was still unclimbed. We were just about to sigh with relief when we heard that John and Ruth Mendenhall had been up Fryatt Creek for a week—with Brussels as their objective! It looked very much as if we'd have to change the title of our film.

On July 18 we packed into the old A.C.C. camp in Fryatt canyon. We four (Ed George, Jiggs Lewis, Virginia, and myself) walked in carrying the movie camera (EK Cine-Special) and accessories, plus clothing and some food. The bulk of the food, and all of the climbing and camping equipment, rode in on two pack horses. We were prepared for a long siege with the mountain.

The next morning we started up toward our objective, carrying all climbing and camera equipment. Before reaching the base of the mountain Jiggs and I took all four loads in two tremendously heavy packs. Virginia and Ed went back to the A.C.C. base camp to bring up the camping equipment. We met the Mendenhalls at "Lake Fickle" (so named by us because of its tide-

like rise and fall). John and Ruth had reached the base of the first "step", "but could not find a safe belay point to justify climbing the black chimney to the left (east). At long last we could relax; the mountain was ours—for the taking.

Jiggs and I went on to the Christie-Brussels saddle. We left the movie and climbing gear in a cache near the stone windbreak (erected by Ayres and Woods last year). Then we descended to Lake Fickle to find Ed had pitched a tent and had supper cooking. Virginia had gone down to the A.C.C. camp again after carrying up two loads of gear. Fortunately, the Mendenhalls had warned us of the vagaries of Fickle so we moved the tent a good 12 feet higher than the platform where Eddie had pitched it. After supper Ed descended to the A.C.C. camp.



The next morning Jiggs and I left the lake at eight o'clock. We reached the saddle shelter in two and one half hours. It was a beautiful warm sunny day. We traversed the first portion of the northeast ridge by walking the snow atop the glacier up and into the second broad chimney. This chimney of shale and loose boulders brought us to a sloping shelf where we changed from bramanis to sneakers.

Here we roped up and climbed a narrow chimney 40 feet to a notch on the ridge proper. We found an old sling rope around a boulder at this point.

We placed a tamp-in ring bolt for protection. (This method was developed by Ben Pedrick of the Kachinas. A hole, one-half inch in diameter, and about one inch deep, is drilled with a spiral type steel drill. This goes in much faster than a star drill. Then the lead sheathed tamp is set in place with a special tamp tool. A five-sixteenths eye-bolt is then screwed into the steel core of the tamp. Four of these bolts were placed at various points along our route—for protection only. No direct aid was used.) Jiggs led up a nearly vertical face, about 15 feet, to the base of a narrow chimney.

He continued on another 35 feet and emerged on the summit of one of the main pinnacles of the ridge. Here he found a sound piton in place and worked a secure belay through a carabiner.

It was little more than a scramble along the top of this ridge to the base of the first "step". However, the exposure and looseness of the rock made it quite sporting. At one point it was necessary to step across a yawning void to the shoulder of a delicately balanced pinnacle. At another the way leads across a split cat-walk with a drop of several hundred feet on either side. We climbed to the accompaniment of falling rock. When we reached the base of the first "step" we found the rock quite firm.

From all the information we had been able to gather this was as far as previous parties had reached. Mendenhall spoke of the black chimney on the left (east). This apparently would go for about 80 feet—but it was blocked by huge chockstones further up. If good climbers, over the years, had been unable to find a safe way up this chimney it was only logical to look for an entirely different route. The face on the right (northwest) was vertical, seemingly overhanging in places, but the rock was as firm as any we had ever climbed on. This might prove to be the key to the mountain.

We placed a tamp-in for belay near the base of this pitch. I led out on a diagonal traverse to a small ledge about 40 feet from the starting point. An insecure piton gave some degree of protection while I drilled a hole for another tamp-in. Anchored to this tamp, I belayed Jiggs up to the small ledge where we both sat and rested. The ledge was barely large enough to support us, and the exposure made us feel like flies on a wall.

We tried a courte-echelle up the slightly overhanging brow above this ledge, but I was still unable to reach a secure handhold. With Jiggs belaying through the tamp I finally was able to by-pass the overhang to the right. I continued up and found a narrow chimney which led up another 40 feet before it was stopped by a chockstone. I belayed Jiggs as he climbed up to this point. Then I worked out to the right, entered another vertical chimney, and so reached the broad platform at the top of the first "step", a total of 130 feet from the base. We now stood higher on the mountain than anyone had ever been before. Above us, apparently less than a rope length, were the pinnacles of the summit ridge. (Later, on actual measurement, this proved to be a good 200 feet!)

It was now past 5:00 p.m. We could go on and finish the climb (Jiggs had found a possible crack on the left) but we decided against it. We didn't have enough nylon to leave a fixed rope here and would have to climb it a second time for the movie.

On the descent we left a fixed rope the length of the first "step" (had to tie an extra 60 feet to our 120 so it would reach). Further down we left another fixed rope from the old piton on the ridge to the sloping ledge where we had left our bramanis.

Later in the evening we reached Lake Fickle to find that Virginia and Ed had packed up more equipment and established camp for all four of us there.

The 21st was a day of rest. The weather was glorious. Ever since, we have regretted wasting it. In the afternoon Jiggs and Ed went down to the A.C.C. camp again and brought up air-mattresses and more food.

At 5:00 a.m. on the 22nd all four of us started up to the saddle camp, carrying sleeping-bags, two air-mattresses, food and a poncho. We reached the saddle shelter at 8:00 a.m. Virginia remained on the saddle—four would have been too many on the rope. She watched the entire climb through binoculars. Ed, Jiggs, and myself—lugging all the photographic equipment—retraced our route of the 20th up to the base of the first "step" and took a few movie shots.

The face climb, which I had led two days previously now proved too much for me even

Below The Brussels-Christie Col.
Photo Virginia Garner.

The Saddle Shelter.
Photo Virginia Garner.

Ray Garner And Jiggs Lewis.
Photo Virginia Garner.

with a fixed rope! I got up to the small ledge where the tamp was placed but couldn't negotiate the overhang. So steep was the angle of the face that my feet wouldn't remain in contact with the rock when I tried to go up hand over hand. Jiggs joined me on the small ledge and caught me when I fell back three times. Then he took over and went up on the sheer strength of his arms.

Belayed from above by Jiggs I hoisted up the heavy camera pack, and then brought Ed up to the ledge. Jiggs again belayed me as I worked to the top of the first "step" dragging the camera pack all the way. Then Ed joined us.

The skies had clouded over. We were not able to get any movies of this portion of the climb. We planned to take the camera to the summit and get some shots on the descent—weather permitting.

We climbed around the base of the second "step" to the left (east). Here we could see the crack that Jiggs had found on the 20th. I went up about 10 feet, placed a piton, and then dropped back to the ledge. Jiggs started up the narrow crack. He placed another piton a few feet higher. Meanwhile a storm was gathering. It began to rain.

Now the section of the cliff containing the crack bellied out into a slight overhang. Jiggs made a wonderful lead past this overhang—using every muscle of his body plus what we like to call the "flesh-crawl" technique. For several seconds, as he rounded the bulge, his legs stuck out into the air. When he finally grunted past it, he drilled a hole and placed a tamp for security.

Jiggs then continued up a chimney for another 30 feet. Here he found a belay point and was able to protect me as I climbed up. We pulled the camera pack up past the overhang and tied it securely to the tamp.

When I reached Jiggs there wasn't enough room for both of us on the ledge, so he continued up another 20 feet. It was raining quite heavily now. As I started to join him a bolt of lightning struck with terrifying suddenness. Eddie, 60 feet below, felt his beard and woolen hat tingle with the current. Another bolt struck—all too close for comfort. I scrambled up to Jiggs and we divested ourselves of pitons, carabiner, drills, and hammers. Hung all this iron on a rope and lowered it a safe distance.

Jiggs had a crack to squeeze into, but there was no room for me. I had to stand out on the sloping ledge in the rain—completely exposed to the lightning. It struck again —much too close for comfort. Jiggs stayed in the crack, but I climbed out onto the ridge (right) and up over a block which put me about 20 feet above him.

We stayed here about half an hour. The lightning stopped momentarily, but the rain continued. I was just about to call to Jiggs to join me when the rock I was leaning against began to buzz with electricity. I quickly moved up another 30 feet and crouched under a shallow overhang. We were scared—and that's an understatement!

Now we had to make a difficult decision. Prudence demanded an immediate retreat (but we wouldn't be where we were if we were prudent). Bad weather in the Canadian Rockies commonly lasts a week or more in mid-summer. Through rifts in the clouds I could see the beginning of the summit ridge a short way above. It seemed to be an easy scramble to our goal. We would be hours on the retreat, anyhow, so we decided to take a little extra time and make a dash for the summit.

I called to Jiggs to come up. While he was pulling up the iron I heard him call out in dismay. I soon learned that all of the pitons and carabiner had fallen! This put us on a spot. We would need the pitons for rappelling. None of the boulders on this ridge would safely hold a rappel sling.

Fortunately, Jiggs was still in verbal contact with Eddie, who was able to fasten some spare pitons and carabiner to the rope. As Jiggs drew them up they wedged tightly in a crack. Jiggs

could not dislodge them from above. The rain had turned to sleet, making our problem all the more difficult. Eddie solved it for us—by climbing up and dislodging the iron by hand. Then he climbed back down to his ledge and voluntarily gave up his chance of reaching the summit. Ed knew that two could move twice as fast as three—and time meant everything now.

By the time Jiggs reached my ledge all precipitation had stopped and we thought we might get a break in the weather. Two more short pitches (which would have been very easy under dry conditions) brought us to the top of the first pinnacle of the summit ridge. About 100 feet further on rose another pinnacle—still higher. We had to exercise great care here, because of the wet rock, and because we were both tingling with the excitement of probable victory. From the top of this second pinnacle we saw the summit, still 100 yards distant—but we knew it was ours.

Pinnacle three was composed of fantastically balanced blocks of rock. These could not be surmounted with the slightest guarantee of their staying in place. We descended some 15 feet to the right and traversed on a horizontal ledge. The fourth pinnacle was quite easy. From here it was but a short walk to the highest point. We reached the summit at 5:00 p.m.—nine hours from our camp on the col.

The summit itself was not a rock pinnacle, but a curving mound of loose shale (which looked as if it had just slid out from the rear of a dump truck), a very unspectacular summit for a very spectacular mountain.

For Jiggs there were two reasons for rejoicing—this was also his twenty-first birthday! We had little time for celebrating, however. Another storm was rapidly sweeping in from the west. We hurriedly threw up a small cairn, placed the record of our climb in a plastic water-proof match case, and began the retreat just as the second storm descended upon us.

We climbed down to the place where I had heard the rock buzzing and placed a piton. A short rappel brought us to the ledge where Jiggs had waited out the electrical storm. The wind was howling around us. We were thoroughly soaked and very cold. It began to snow. It was very difficult to place pitons with our numbed and bleeding fingers, cut by the sharp rocks. We finally managed to put in two and had just enough sling rope left to carry a loop over the edge of the ledge by tying two 120-foot nylons together.

Jiggs went down first. Just above the bulge he stopped, and hung on by one hand as he recovered the camera pack. This was quite a feat in the cold and wet. This 100-foot rappel, plus a 20-foot traverse, brought us to the top of the first "step".

Here we found Ed in terrible shape. He had waited for us on an exposed ledge where there was no protection from the elements, and not enough room to exercise and maintain bodily warmth. He was blue with the cold—and vibrating like a model T. He looked like a pneumonia case for sure.

At this point we had our sling already prepared—the one we had used for the fixed rope on the 20th. The distance to the base of the first "step" was 130 feet. It would be impossible to recover the ropes if we used two 120's. We decided to sacrifice one of them and tied an extra 60-footer to it and rappelled down to the ridge.

I went last, carrying the camera pack. The wet rope and heavy pack fouled me up, and I slid past the ridge about 30 feet to the right. Ed had to use all of his strength to pull me back. This worked wonders for Ed—from this point on he took care of me, and so forgot his own condition. I was able to climb up 10 feet and untie the extra 60 feet of nylon—abandoning the 120. This will mark our route to the summit for future climbers.

The journey down that terrible ridge, in the cold, and wet, and gathering darkness, was a nightmare. When we reached the place where the first fixed rope had been we didn't have the energy

left to fuss with a double rope rappel. We slid down a single fixed rope—abandoning another 120 feet of nylon. At the base of this rappel we changed back to our bramanis and scrambled down the wide chimney to the snow. We reached our saddle camp at 9:30 p.m.

Virginia had hot boullion waiting for us, but had been unable to keep the sleeping-bags dry. We spent a wild night in wet bags, under a small leaky poncho—all four of us wedged between the narrow walls of the shelter.

At dawn on the 23rd a watery sun greeted us. As this soon disappeared behind a new bank of storm clouds, we started down, leaving the cameras and some food in a cache. We intended to make one more attempt to shoot our film.

We reached Lake Fickle at 10:00 a.m. The mountain had had its revenge. The entire little valley was flooded —just the very top of our tent showed above the surface of the water! All of Virginia's exposed still film was on the floor of that tent. Fortunately, the other tent was up high on the bank, together with the remainder of our food supply. We were able to dry out some of our things over a fire before it started to rain again that same evening. It continued throughout the night and all of the next day.

At dawn on the 25th all four of us again climbed up to the col. Here we found that what had been rain at Lake Fickle was snow at this altitude. We had difficulty digging out our equipment from the cache. Despite a chilling wind and snow on all the ledges, Jiggs went on ahead and climbed up to the point on the ridge where we had left the last nylon. He recovered it—Jiggs can't abide waste. We watched him through holes in the clouds. While waiting we packed up all the equipment that had been left in the cache—cameras, climbing irons, and food. As soon as Jiggs arrived we started down. It had grown extremely cold and another storm was threatening.

At Lake Fickle we added all the sleeping-bags, clothing, and the tents to our packs, continued right on down to the A.C.C. camp and ate all the remaining food in a tremendous feast that night. The next morning we shouldered light packs for the 12-mile hike out to the highway, leaving all the heavy equipment to be picked up the next day by pack train.

As we drew away from Brussels we kept looking back over our shoulders—half expecting it to turn into a volcano and deluge us with lava! It had already hit us with just about everything a mountain could throw.

We had climbed our mountain. We had conquered the old black devil under very difficult conditions—but we had not made our film. None of us has any desire to climb it again; we used up all our luck the first time.

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EARLY EXPLORERS OF THE WEST

BY ELIZABETH PARKER

Earl Of Southesk

The Earl of Southesk spent the month of September, 1859, in the Rockies on a hunting expedition. He seems to have entered the mountains by the Brazeau Valley, but, owing to his imperfect map, it is difficult to identify his route. He was a faithful diarist and carried some favorite plays of Shakespeare with him, though not in handy volumes at that date. Southesk would read by sunlight or firelight and would write down his criticisms for our behoof. On September 1 his imposing company halted for dinner in the foothills "amid noble scenery"; and while his men smoked the post-prandial pipe, he "had a pleasant hour with *Macbeth.*"

A picturesque caravan it was, for the noble sportsman had an eye for color. I shall use his words as much as possible while condensing his description of the somewhat showy company, one by one, as they came into view on a trail at the turn of a hill. M'Kay, big and broad-chested, dark and heavily bearded, wearing a buff coat and black hat, astride a brown horse, looked like a Spanish cavalier of old. Matheson, tall and straight and merry, on a small dun pony and wearing a blue cap, gay with ribbons, over his long, fair hair, a belt of scarlet cloth across his breast, was the picture of a "troubadour riding to the tournament." Munro, tall and strong, but lightly framed, wore canvas hunting-shirt, leather belt and cross-belt of embroidered cloth. McBeath, tall and grave and dark, bearded and mustached, with military belt and rifleman's sword, looked like an ex-Life Guardsman, the martial likeness emphasized by his coal-black horse and red saddleblanket. Kline, wiry and active, riding a white mountain horse, which few could catch when loose on the plains, wore red and silver brocade on his breast, and a wide white hat with blue streamers waving in his long, black curly hair. Duncan, a sober Scot, came next in grey shooting-suit and flannel shirt. Toma, in leather, was the brave Iroquois canoeist, slow in movement, with massive limbs, swarthy face, and small black eyes. Antoine, stout and rotund, with olive skin and long black hair, in leather shirt, carrying a curious little rifle and in his belt a large hatchet, was long past youth but an active, hardy hunter. La Grace, an old man with parchment skin, aquiline nose, long wild hair, piercing black eyes and thin mocking lips, was the "character" of the company. He wore a purple cotton shirt, tight wrinkled trousers, white blanket, a cap with peak and ears, and streamers of scarlet cloth beneath a battered eagle feather. La Grace led the horses when the others drove them; wakened when they slept, drinking strong tea at dead of night; went off alone at meal-time and killed queer little animals with stones. A quaint old jester he, who after the heaviest day's travel, enlivened the bivouac by various devices: scalp-dances around a kettle, Cree war songs, wrestling, or jokes in broken English.

Lastly, the leader of the expedition described himself, in a cream buckskin hunting shirt, well fringed, grey knicker-bockers fastened with green braid, wide "Yankee hat" banded with green ribbon, field-glasses hanging from shoulder, leather belt, hunting knife sheathed in embroidered skin, tobacco pouch (Indian fire-bag) of the same pattern, his charger a little black Hercules, and across the saddle, his sheathed rifle.

Such was the mounted company with a pack train following, of heavily laden horses, that entered the Rockies on that early September day in 1859. On the 2nd of the month, they were well into the hills and counted eighteen bighorn in one herd on a mountainside. Southesk, M'Kay and

Antoine rode off and climbed in pursuit, but the swift sheep disappeared over the cliffs. Soon a goat appeared, but they missed again and had to be content with humbler quarry, though probably more tender eating. Thus, in camp, they dined on "delicious siffleur" which tasted on the tongue like "very delicate mutton or the fat of sucking pig." The next day it was porcupine and a bird killed with a stone, probably a fool hen; but before the day was done, Antoine shot a sheep.

On September 4, with his dog, Southesk climbed a mountain at the head of a short tributary valley and there built a cairn, six feet high. The mountain was afterwards named Southesk's Cairn; and the tributary stream, Southesk River. You will find it marked on a government map this day. He was now in a happy hunting ground; and for days the hunters followed the chase, climbing, stalking, killing, moving the camp forward into that magnificent alpine country about the Forks of the Saskatchewan. In those days the sportsman in the mountains was a law unto himself. Looking back after sixteen years, Southesk dwells upon a conscience-stricken entry in that diary: "Yesterday's shooting successful, especially as regards fine heads; and a man who travels thousands of miles for such trophies may be excused for taking part in one day's rather needless slaughter. After all, not more than twelve killed and a few wounded out of a large, very large, herd which perhaps may never again be alarmed by the sight of man." The older man's reflections suggest a haunted memory: "Still, there is something repugnant in carrying death and anguish on so large a scale amongst beautiful, inoffensive animals. One thinks too little of the killing of small game, but in shooting large game, the butchery comes more home, one sees so vividly the fear, the wounds, the suffering." He concludes that one need not grow morbid over it since "no thinking will ever bring one to the root of the matter." Ever more rigid game laws will look to that, my masters. To-day, these shy, wild bighorn will come down from their high, hidden pastures to meet the traveller on the very road itself. But the traveller must be a mountain pilgrim, not a hunter.

Southesk relished the flesh of these animals as much as he prized their heads and horns. The entry on September 9 has it that a snowstorm raged all night and day, clearing towards evening. The men were happy in their big tent, singing jolly songs; the Earl was comfortable in his, a big fire blazing before its open foldskirts. He divided the time between great meals of mountain mutton and pipes of good tobacco, reading *Titus Andronicus* and into the journal go his comments on the play.

On September 10, while the men were exploring the trail, Southesk essayed another mountain, getting up to the foot of its chief cliff. No easy chair, he says, is so restful to a man, weary with tramping, as the back of a horse. And many a traveller on mountain trails will agree with him. While on their progress, camp by camp, towards the Kootenay Plains of the Upper Saskatchewan, they camped opposite the massive mountain ever since known as Mt. Dalhousie, named by Southesk for his friend the Earl of Dalhousie. The journal is enthusiastic over the grandeur of the greater alpine mountains, the cloud effects, the moonlight, the aurora, and a meteor falling from the sky and floating southwards.

By the middle of September the going was very bad and there was rain. After a hard day, Southesk and Antoine climbed for goats which they had seen from the valley but failed in their quarry and descended the cliffs in rain and darkness. Every day the caravan moved on by valley and pass, the leader of the expedition making note of the mountain landscape, especially the greater alpine peaks, as they came into view. On September 17 they were but half-a-day's journey from the plains. The diary tells how they crossed the shoulder of a mountain, and camped: "Ate three pounds of fried sheep and read the *Merchant of Venice*." The next day they camped on Kootenay Plains, "some fifty acres bare of trees and covered with short prairie grass," which was excellent

pasture for their horses. They crossed the river on rafts. On the 20th, they found the Bow River trail which they followed through the forest, seeing traces of recent travellers. "We supposed them to have been Americans going to the Columbia, said to be not more than three days' march away." They halted on account of their sick guide. Toma made a candle out of sheep fat run into a mould made of cartridge paper. It burned well, giving a clear flame almost like that from wax. It was a somewhat weary march up to Bow Pass which is the height of land between the sources of the Saskatchewan and Bow rivers. On the pass, which is open moor, it was dreary going, a drizzling rain hiding all the mountains. They camped by the stream that runs into the Bow, saw bears and partridges and, for the first time, saw the lovely larch of the Rockies on the upper timberline. Its fringe was now pale yellow, a striking contrast to the dark evergreen forest. The weather cleared and there was much climbing for game, both sheep and goat. Moving down the Bow Valley, they met a Stony Indian who turned back with them, and they camped near his encampment of four families. Here Southesk found that his men had, during their progress while he was off hunting, wasted most of the pemmican and also the fresh meat. It was a large company to feed and there was left provision for two days only. Nevertheless he ate goat philosophically and read Romeo and Juliet critically. He was impressed with his Indian neighbours singing hymns at bedtime, and pronounced them Christians and excellent, religious people.

On September 26, they had moved down Bow Valley as far as the site of Hector's camp, where they found the inscription on a tree: "Exploring expedition, August 23, 1859. Hector." Here they had considerable commerce with the Stonies, buying moose and horses for barter. A good Buffalo runner, was pressed upon Southesk as a gift in gratitude for his writing out sentences from the New Testament, which his man M'Kay translated into Stony Indian. The Indian children played with the young horses just as they played with their dogs.

On September 29 they halted at the foot of Mt. Cascade, after passing a fine herd of goats on the way. The camp is described as in "a hollow, sheltered by bushes near the foot of the 'mount where the water falls', an isolated rocky mount, in no way remarkable except that a small stream runs down its face and loses itself in the earth." A natural verdict from a traveller who had so lately left a region of such splendor. Passing Mt. Murchison on the way to Bow Pass his comment had been: "It rises to a height of 15,789 feet, considerably surpassing Mont Blanc." He was wrong by over 4,500 feet, but the mountain is an imposing one.

At the Cascade camp, Southesk received a letter in Cree syllables from an encampment down the valley, the news of his coming having been carried by a Stony messenger. The letter read, "We thank God for sending us such a great man. We send our compliments to him. We will receive him as a brother."

The next day the caravan was on the march towards Old Bow Fort. Entries in the diary after the last day's journey in the mountains are timely to-day. The Earl deplores the ruin of "magnificent forests that ages had matured. Fire everywhere, the axe everywhere, the barking-knife and the bill-hook—joint ravishers with the storm, the lightning and the flood—all pulling down Nature's handiwork. And who builds up anything in its stead ?" He deplores also the ruthless slaughter of buffalo and deer and goat and other game by the Indians: "Such waste will soon bring its bitter punishment."

They arrived at Old Bow Fort by midday. "The ruins of Old Bow Fort stand on a high bank overhanging the river which is here very rapid and about 50 yards wide." Thus ended the Earl of Southesk's journeys in the Rockies.

The Emigrants

In early chronicles of the Rocky Mountains, reference is sometimes made to "the Emigrants" who figured in an ill-starred expedition in 1862. The first detachment reached Tete Jaune Cache and there divided, one section to seek the headwaters of the Thompson, and the other to make the voyage by raft on the Fraser. After many accidents and much suffering, the Fraser party reached the mouth of the Quesnelle, having lost but one man. The Thompson party went through the forest until they reached the river where they abandoned their horses, killed their oxen, dried the meat, and built rafts. The place of bivouac received the name of Slaughter Camp and became a landmark for later travellers.

The rafts leading—there were sixty souls in the party-—were sucked in by the rapids and many were drowned. Warned by the fate of those ahead, the rest made for the shore and cut a toilsome portage through the heavy timber past the rapids, built more rafts and finally reached Kamloops in an exhausted condition.

Another party of five men attempted navigation on the Fraser in the fall of the same year. Their names are preserved as the three brothers Rennie, Helstone and Wright, It is a tale of terror best told briefly. Below some rapids, Shuswap Indians found their canoes, bottoms upward, which had been lashed together to shoot the rapids. According to Milton and Cheadle, two Rennies reached shore, arid the other three reached a rock in midstream, where they spent two bitterly cold nights and days without food. A rope being at last passed to the rock, they were hauled ashore, but were not fit to travel. The two Rennies cut firewood, left most of the grub for them, and started to seek help at Fort George. But they were twenty-eight days in getting there, and in wretched plight. Indians sent out for the three men returned without reaching them on account of the deep snow. Other Indians later found Helstone and Wright alive, having killed and eaten Rennie, all but his legs. They savagely drew revolvers and the Indians fled. The next spring, 1863, these Indians guided a party of miners to the spot, but what they found was too horrible for repetition in this chronicle.[1]

1 Lack of space prevents inclusion of the last two of Mrs. Parker's historical articles. These will be published in the next issue of the Journal.

SWITZERLAND, 1947

BY P. JENKINS AND A. ROLLESON

Climbing in Switzerland has many of the aspects of a rest-cure to those whose only mountaineering experience has been in the Canadian Rockies. In the Alps there is first of all virtually no supply problem: your base is a comfortable pension or a hotel where all your physical needs are supplied; your mountain nights are spent in old-established huts with hot drinks laid on (and sometimes fresh goats-milk) and blankets, and advice about the weather. Your routes are planned and followed by your guide who relieves you of all responsibility, heaves you up difficult spots and carries all emergency equipment, and even carries your rucksack when you get tired. Even the rock is a holiday—solid, grey granite or firm, slate slabs. Once you are in Switzerland nothing can go wrong but the weather.

The Swiss are of course long practised and very skilful at ensuring that the climber gets his climbing with the minimum of lost time and effort. We were gratifyingly conscious during the whole of our stay that everyone was trying to smooth our path and get us into the mountains and up them, since that was where we wanted to go, as fast as possible. It started when we arrived in Geneva with three pairs of unnailed boots, a broken-down car, and short one ice-axe and a supply of crampons. We went to Mr. Tricouni, who immediately produced a solution to the nail problem and organized his bootmaker to get the work done in record time. The other equipment came out of a supply left by John and Elisabeth Brett in 1939 and generously made available to us. So thirty-six hours after arrival we started off in a mended car with everything we needed.

Expensive? Yes and no. Travelling and staying in hotels can be done fairly cheaply with experience and care. Guides' fees vary with the climb and are a very large part of the expense, but nobody but a fool or expert would climb without a guide in Switzerland—and nobody who has not climbed with a Swiss guide can realise the skill, strength and good fellowship which are apparently the universal attributes of that profession.

The Swiss are not watchmakers for nothing. One thing which impressed us all was the importance of time and the seriousness with which it is measured and respected in Switzerland. Trains, buses and departures from huts are precise to the second: distances in the mountains are not spoken of in kilometres but in terms of the time it takes to cover them. There is no question of anything happening either too early or too late: everything happens right on the dot. One of us had a revealing experience in this regard. She had arranged with a guide to start out on a climb at 3:00 a.m., and the day before went into the hotel office to arrange about breakfast. It was rather a large hotel in Saas Fee and when asked what time she was to leave she thought perhaps she should be on the safe side, in case something went wrong, and said the time was 2:45. "Ah," said the man, "in that case you will be wakened at 2:00 a.m. and breakfast will be ready for you at 2:20." All this happened exactly to the second, and at 2:40 our climber was given her bag of lunch and helped into her rucksack. As the clock reached 10 seconds before 2:45 the hotel man asked severely who the guide was, and 15 seconds later became very agitated and expressed consternation and dismay at the thought that a guide could be late for an appointment. Our friend realised the guide's unparalleled disgrace if this idea were permitted to continue and confessed that her appointment was really for 3:00 a.m. "But why", asked the hotel men, "did you say 2:45 ?" There was no possible answer to that which could have made sense to the precise Swiss mind without conveying also a frightful insult. The untrusting

foreigner mumbled something about having made a mistake and hung about shamefacedly for another 14 ½ minutes.

We had the good fortune to arrive in Switzerland at the beginning of one of the driest summers in her history, and only one of the five climbs which we did jointly or separately, and none of the walks and other excursions, was marred by imperfect weather. We spent our first ten days in the Bernina Pass area, south of Pontresina in the Canton du Grison, five of them warming up and getting acclimatized. Bare, open slopes at a height of 7,000 feet made this a perfect walking district and an endless source of botanical interest—and where else today but in Switzerland would they employ a gendarme with a gun at the entrance to a remote valley to examine the packs of returning excursionists to make sure they contained no forbidden flowers?

Then three of us, Peggy Jenkins and Patrick and Alma Rolleston, climbed Piz Palu on a day of breathless stillness and brilliant sunshine in which, as we plodded up the snow slopes in the unrelieved light, the phrase "White Hell" came often to mind. Three days later Peggy and Alma did Piz Bernina, a much longer and more difficult climb, starting in starlight at 2:00 a.m. from the Boval Hut up the Diavolezza Glacier, again in perfect weather. Later on we drove to Saas-Fee in the Valais, and there Peggy did two climbs in the Mischabel Group: Nadelhorn, and the Lenzspitze-Nadelhorn traverse, one of the best rock climbs of the district.

Saas-Fee, divided from the Zermatt valley by the immense wall of the Mischabel Group, is really a climbers' paradise, and we thought that, combined with Zermatt, it would be an ideal centre for the A.C.C. Swiss tour, whenever that can be arranged. The climbing is varied, and excursions of all grades of difficulty can be made in one day from the village. For other longer climbs there are strategically placed huts, wonderfully well equipped at heights up to 10,000 feet, which make a 4,000-metre peak a comparatively easy day. Hut life, incidentally, deserves an article of its own. We shall only say here that you have to learn to be quite compact, and to arrange your life according to an accepted climbers' code. The unfailing friendliness and cordiality of the Swiss prevented our ignorance in these matters from leaving a trace of ill-feeling.

We came away with two firmly fixed convictions as to getting the most out of a climbing expedition to Switzerland: firstly, the importance of training; and secondly the desirability of staying in one district if time is limited.

The importance of training in the Alps is impossible to over-emphasize. The guides can do almost anything (they say they could take a cow to the top of the Matter-horn if required) but obviously the sort of climbing where the guide does everything is not much fun. The apparent ease with which climbs are accomplished every fine day throughout the summer over all the well-known routes may be a little misleading, because you are apt to forget how very high some of these mountains are, and how subject to sudden changes in weather that could be disastrous for a party without the necessary reserves of strength. We found that a week at Berninahauser gave us only just enough time for training and acclimatizing ourselves, after which we could do two good climbs three days apart without being overtired, although it must be admitted that we did not feel exactly fresh on returning from the Piz Bernina climb. Incidentally, the importance of a slow start to the day and frequent stops for snacks was borne in on us again on that particular climb.

Make one place your climbing centre and stick to it if your time is limited—we think that is the best advice for those who wish to get all the possible climbing out of the time at their disposal. None of the precious fine days are then lost in moving, and no time spent packing and unpacking and getting oriented. Two adjacent valleys like the ones in which Zermatt and Saas-Fee are situated provide enough variety for any taste, and would keep the most energetic climber

happily occupied for weeks. Thus you get to know something of the district so that guideless climbs could be undertaken.

These observations are offered for what they may be worth to those who contemplate joining the A.C.C. trip to Switzerland—in the near future, let us hope. Whenever the expedition can be arranged, the Club will meet with the greatest possible co-operation from the Swiss. In passing through Geneva, we called on Monsieur Egmond d'Arcis, president of the International Alpine Clubs Association, and found him to be intensely interested in the proposed trip and ready to help in arranging the details and suggesting programs. We spoke then as though it would be taking place in the summer of 1948, and it was that prospect which gave us some cheer as we sadly left Geneva for the drive back through France on the way to England.

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A COAST RANGE PIONEER

BY W. A. DON MUNDAY

William Downie in his book, *Hunting for Gold,* claimed that his friend Alex McDonald made the first crossing of the Coast Range from Bute Inlet by way of Homathko River, but gave no date or details. Downie and McDonald had turned back at the mouth of Waddington Canyon in 1861.[1] Downie's claim was made late in life. Alfred Waddington, the man most interested in such a route through the Coast Range, certainly knew of no such exploration by McDonald. Waddington sent out a party under Thomas Price late in 1861 to explore beyond where Downie and McDonald had turned back. They reported they had been within sight of the bunch-grass country which stretches along the inner slopes of the range.

Waddington therefore sent out H. 0. Tiedemann, a civil engineer, from Victoria in the spring of 1862 to report on the feasibility of building a wagon road from Bute Inlet to Fort Alexandria on the Fraser River to serve the Cariboo gold fields. Tiedemann's report to Waddington follows :

Friday, May 16, 1862. Started in a Canoe from Victoria with 4 men and 3 Indians, for Bute Inlet to explore a trail to Fort Alexandria, with the ultimate view to make a Wagonroad, from a Point on the Homathko River, where Mr. Price the year before left off. Where he did see the plains and bunch-grass, from a Hill and also reported the existence of an Indian Trail along the River and an easy comfortable Trail to the Plains. Also I was instructed to pay attention to the navigation of the Homathko, for small crafts, [sic] to these point [sic]. By rounding Clover Point our Canoe split were obliged to land in Foul Bay to have same repaired.

Foul Bay and Clover Point are now within the limits of the city of Victoria.

May 17. Started early reached Saltspring Island, about 5 o'clock [sic] in the afternoon. Weather beautiful, no wind for sailing.

May 18. Reached Nanaimo, here one Indian deserted us. May 19. Reached Texada Isand. Weather beautiful, no wind.

May 20. Reached Savary Island, had again to repair the Canoe leaks very badly.

May 21. High North Wind, started late in consequence of it; camped on a [sic] Island, near Bute Inlet.

May 22. Camped on left hand shore of Bute Inlet.

May 23. Rained last night, cloudy all day, arrived at the Company Loghouse, at the proposed Town about 1 oclock [sic] in P.M. Here the reign of the Muscitos [sic] commences. The flats from the Townsite is swampy and subject to the overflow of the Homathko and High Tide. The Mountains are high and steep and are still covered halfway down with Snow. Heard now and then the thunder of falling avalanches, rained in the night, slept outside on account of the Muscitos.

May 24. Rained the greatest part of the day. Opposite to the Townsite is an Indian village, had the Canoe repaired by Indians. Our 2 Indians deserted us here also, did not like the appearance of the River, (high water) and were afraid of the interior Indians, so we were left to ourselfs [sic]. In consequence to lighten our Canoe we left half of the Provisions with the Indians, and started 5 of us up the River, sailed most of the time, made about 15 miles that day, camped on a sandbar, between driftwood. Muscitos very troublesome, no sleep. The River is very muddy.

May 25. The navigation of the River is getting very dangerous had to walk most of the time to the waist in Water, which is like ice, and cut Trees down, to have a free passage for the line by which we were draging [sic] the Canoe up Stream. The Current is very strong. It rained the whole day besides, wet from above and below. The River is full of flats and bars also dams of driftwood. Camped about 3 miles above Waddingtons [sic] Glacier on the east shore of the River.

1 *C.A.J.,* 1941, Early Explorations in the Coast Mountains,

Heakamie Glacier From Homathko River *Photo A.R. Munday.*

At a point north of the mouth of Heakamie Creek. Mt. Jeaquhan at right.

Tiedemann Completed The Waddington Trail

through the canyon for C.P.R. Surveyors in 1875 by bridgework at bases of the cliffs, but floods soon destroyed it as shown.

Photo C. Horetzky. Courtesy Vancouver Public Library.

Waddington's Glacier in 1862 was what is now known as Heakamie Glacier which Downie had discovered descending to about 200 feet above sea level from the huge Homathko Snowfield. Tiedemann had considerably overestimated the distance travelled on the 24th. Difficulties of travel are described in *C.A.J.*, 1941, pp. 74-79 by William Downie, and *C.A.J.,* 1926-27, pp. 124-128. "Exploration in the Coast Range."

May 26. Reached McDonald Peak, a high sharp conical Mountain, nearly all the prominent Peaks of the Coast range have this peculiar form and I noticed, by some which were broken or caved in to be hollow, as if they had serft [sic] for one time as a ventilator of the lower department.

I am at a loss to understand the latter half of this description unless Tiedemann refers to glacial cirques.

Had this day hard work and heavy pulling to get the heavy Canoe over the Rapids. Buryied [sic] again a part of our provisions to lighten the Canoe. The River is full of large and high Dams occasioned by Driftwood.

Beavers are also in large Numbers here, and are continually building dams and houses and by so doing they force the River his course.

May 27. Weather fine. Had again a hard day of it, under great difficulties, and hard work, we managed to cross a number of long Rapids, in most cases created by Dams of Driftwood, met Trees of enormous size; made small progress and finally crossed near the ferry on the Homathco River. May 28. Did succeed to reach the Indian village marked on my Sketch map, camped about 2 ½ miles, below of same. The navigation is getting more troublesome, on account of number of Channels, besides had to cross a number of large Mountain stream, [sic] under the greatest difficulties, as they are very rapid and broad. Went up to the Indian village and found same deserted. From this Village we should get our guide according to instructions, to show us the Trail leading to the Plains or fort Alexandria and according to Report of Mr. Price. Concluded as we found no Indians, and the Canoe too heavy to drag along to haul the same up, on a small flat in Bush, buryied [sic] the rest of our Provisions, and hung up the Blankets on large trees, to secure the same against Indians and animals. Each of us packed as much Provisions as he could carry besides his other things. From here according to Report and Instructions we would find everything smooth and pleasant. May 29. Stopped the whole day in Camp, to finish the preparation for our journey, baked bread, etc. I tried with our hunter to find the Trail had no success, no sign of it, climbed high mountains that we where [sic] yet far off the Bunchgrass and Plains.

May 30. Started early in the morning, each of us heavily loaded, tried again back and forward to find the Trail, which such exist, leading over the frightful Mountains which we did see before us, at last we reached the top of one of the same, and behold so far as the Eye could reach, nothing else as Peak after Peak, thousands of feet in height and clad in perpetual snow, was to be seen, below us a dark chasm, in perpendicular Walls of Granite; the Homathco River. After the Survey of the Country, which convinced me that I was only halfway through the Coastrange [sic] I concluded to go back to the River and follow the same if possible. Descended a steep Ravine down to the River, followed the same climbing over Bluffs, or sliding down the same on large pine branches taken between our legs, sometimes 90 feet in once, for a mile or so we had to find our way between large Boulders, crawling sometimes under the same etc., in the best way we could to get along; till we reacht [sic] a small level place covered with trees, and to my astonishment here we found the camping ground of Mr. Price from the 13th of October 1861, written on blazed trees, his and all the other mens name, also from here he did see the plains and Bunchgrass, from this place he returned to Victoria. Probably he took the snowclad Peaks for Bunchgrass in his dream. Camped on the same ground. The River is still broad but more full of Driftwood.

May 31. Continued to follow the River, the same work over again as yesterday; finally we were stopped by a large fall of the River and the perpendicular Walls of the Canon, could not see the other end. Snow in the middle of the said Canon, the water of the River is very smooth and still. The walls of the said Canon are varying from 500-1000 feet, in height. Returned partly the way which we came yesterday, trying to find an easier access, but met everywhere solid Walls of Granite; it was a continuous climbing on hands and knees. To get over one of the perpendicular Walls we were obliged to keep upwards on a slanting Crevice in the wall about 1 foot in width, like snakes pushing our axes and guns before us, the least move of our Packs on the Shoulder would have

sent him down 800 feet deep to the River; the first man had the advantage to have a firm hold on the Grass, but that help was entirely gone for the last man finely [sic] we reached the top, which took us the whole day. Went down about 100 feet to a kind of hollow, with water in it and camped for the night. On this track by which we reached the top of this mountain, which forms the Canon below, it is impossible to make a Trail; but viewing the country from the top, I thought by commencing farther south and more in a westerly direction through large gaps, a Trail might be made but of a very steep grade, from the top of this mountain the course of the river was plainly visible, and not the least sign of the north branch of the Homathco River. The general course of the South branch is easterly.

June 1. Early in the morning commenced to descend the mountain with the intention to return to the river, as I noticed the river kept throughout the same width and the mountain did appear to be more broken. The rock everywhere is hard and smooth, at a depth of about 800 feet we came to a small round lake about one mile in circumference, from this lake we had a splendid view of the rivers joining from all sides the Homathco also noticed the extent of the perpendicular walls of the Canon which must be over one mile, the least, from the Lake the descent was comparatively easy, as we were following a creek finally we reached the flat and came to a large valley covered with boulders of white granite and white quaryrous [sic] sand—the upper end of this Valley was closed up by a high Glacier from under which a large river did escape. The water of the river is perfectly white and thick like milk, forded the first-branch very easy, rested for a while on a bar, till Tom the fisherman who carried our provisions, should come up, finally I tried the second branch, but by lifting my foot to step over a boulder, and as I was nearly to the arms in water, the current very strong, my pole slipped off, and down I went into the river, by great exertion I succeeded in reaching the other shore holding on to the branch of a tree, before I reached the junction of the two rivers which are joining the Homathco about 3 miles below. Tom went back, frightened very much seeing me struggling in the current, and getting in a deeper place than he expected, he dropped the provisions to save himself. He reached the shore and joined us afterward by crossing the river on a tree which the McNiel's cut down for him. This River I called "Tiedemann's river." Camped for the rest of the day. We tried hard to find the bundle with our provisions and the only cooking kettle which we had but did not succeed. June 2. We concluded to go on and trust to Providence. Started very early, crossed a small range of hills, and there we encountered again a river with steep and perpendicular walls went for some miles up the river [west branch of the Homathko] to find a crossing, did not succeed, finally we tried farther below to ford the river, by holding on jointly to a pole, but we could not stem the current, had to give it up, lost the whole day by trying to cross this river; camped on the same place.

June 3. Made a raft of dry Cedar pieces, as we had no rope. I cut my tent in small strips and made a kind of rope from it, with this we succeeded to cross the river; climbed a very high mountain which divides the east Homathco from this northern branch; camped again on the beach of the last branch, or as I took it, the main branch.

June 4. On account of the high state of the water in the river we could not get around the bluffs, and were obliged partly to retrace our track to get over these bluffs which is rather troublesome as the slope of the mountain consists of angular debris, every year broken down from the perpendicular walls above. It is a most singular fact, that the gap thro' which the river runs, preserves throughout a uniform width, of the same width as Bute Inlet, it appears to be a continuation of it. The tops of the mountains broken down to a certain level, to a uniform perpendicular wall, the level differs only thro' the height of the mountain. Land gaps run out gradually beyond the Big Lake [Tatlayoko Lake] till it reaches the water shed of the plains; [This last statement is an interpolation based on later knowledge.] descended the hill down to the river again, and camped on a flat well timbered. Shot a grouse this morning, divided it in 5 parts, each man boiling his in his drinking cup, to have some soup, and our last bread was also divided. Rained the whole day.

June 5. Rained thro' the whole night and day, miserable, cold, travelled gradually over snow lying on the slope of the mountains great trouble to cross streams. Had for dinner the bark of a fir tree and for supper the fifth part of a squirrel; camped again on level ground near the river.

The bark eaten probably was the inner bark of *Tsuga heterophylla,* Western Hemlock, formerly known as Hemlock Fir. It is very astringent and the Indians preferred to eat it with eulachon oil.

June 6. Started off early without anything to eat through the whole day; crossed many mountain streams, the snow is still deep, in some places in small gulches 10 and 15 feet deep. The mountains still very high; camped on a green; some distance above the river.

June 7. Weather cloudy, but no rain, went down to the river, followed the same, but to avoid a bluff had to climb over a hill again. Crossed a large stream coming from the west Hill & Stream full of snow yet; shot again a grouse made a supper of it.

June 8. Weather fine but feel very hungry, encountered a stream whose course is nearly [from] due north [Nude Creek]; and Homathco nearly magnetic north. [Variation is about 25° east.] The mountains getting more open and less wooded. Two men are hunting higher up on the hills. Stopped at this north stream to await the return of the hunters. Towards evening they returned with a small goat, which was immediately cut in pieces and in long strips to dry them over the fire, to preserve the meat better for packing.

June 9. From the junction of this mouth—and Homathco, the formation of the mountains is slaty intercepted by some quarry [sic] view of some magnitude, did slide or climb down a gulch worn out in qurry, [sic] did not observe any gold; were too hungry for that, but no doubt it does exist as I observed the slate is full of Ironpyrite and also the quarry [sic] which is the best guide to ascertain if the quarry [sic] will contain gold. [Possibly "quarry" means "quartz."] From here a good waggon road could be made, as the mountains get lower and lower, and losing gradually their steepness. The slate is soft and splits easily. The river widens here considerably, and is navigable, and also full of driftwood.

June 10. Camped near the river on a flat; rained the whole night; The course of the river is nearly due north, [magnetic], and very winding, but free of driftwood; a splendid sheet of water.

The Hills getting lower with wider spaces and flats between; the tops only are covered with snow. Everywhere I observed quarry gravel, the Soil or gravel occasionally of a deep red colour. Camped early on a beautiful flat on the river. Every one of us has the diarrhea.

June 11. Started early as we can walk only slowly about 3 miles from our last night's camp, the river passes tho' a canon about ½ a mile long, went around it; not very steep hill and all slate; after this the river resumed its usual width. Made this day about 10 miles in a straight line, found two Lakes one on each side of the river, and opposite to each, lying about 200 feet above the river. Crossed beautiful Valleys, splendid grass. Good country for a waggon road. Weather very warm and musquitos in millions; feel very hungry and weak, nothing to eat except a bit of that dried goat meat. Prior [sic] I did not give any distance, as by climbing the whole day we found ourselves only a short distance from our last nights' camp.

June 12. Weather fine in the morning; heavy thunderstorm in the afternoon. 2 miles from our Camp found a river coming from the east, [Nostetuko Creek] nearly of the size of the Homathco, at the junction of the two rivers is a flat, and I thought I could see some Indian huts, but the distance is great and as I had lost my glasses & instruments in that Glacier river, I am uncertain; about 4 miles farther we coming from the west came to a river about 100 feet wide [Ottarasko or Feeney Creek], followed same for some distance to find some convenient place for crossing, but did not succeed, returned and finally effected a crossing 1 mile above the junction. After climbing a hill we discovered a large lake, right ahead of us, [Tatlayoko Lake, fourteen and a half miles long] from this lake we were looking out all the time, hoping to find some Indians at it. The Homathco escapes in a very winding course from this Lake over a large bar of gravel. Climbed up a hill to examine the territory and found that it gradually assumed an even rolling appearance, thought just to keep our western side, and follow the lake also on its western shore. By returning to the camp the men reported having discovered a Trail and as we had found often along the river Indian fishing lands & this decided me to cross the Homathco and if possible follow the trail. Crossed one arm of the river on a bridge with rails; made by the Indians leading to the main branch, and there the trail ceased; we tried to cross the river but did not succeed.

June 13. Tried again to cross the river which is here very rapid, travelled 4 miles up and down the same to find a place. Crossed finally the same, by holding all of us to a pole, under great risk to lose our lives; found the opposite shore rocky, and followed a kind of trail leading to the lake, followed the same for some distance and had to return, as the shore gets steep and runs out in perpendicular bluffs; Concluded to build a raft of dry cedar trees; our last morsel of dried goat meat was divided. Rained all night.

June 14. Rainy, cloudy day; finished raft in the afternoon, and made about 4 miles with it; had nothing to eat. The eastern shore of the lake is rocky. Camped on a small flat near a small shallow, fought the mosquitoes to get some old berries from the last year.

June 15. Heavy rain through the night, George and William went out hunting along the shore, made that day about 11 miles; had a sail made of one of Men's blankets. Towards evening the hunters returned empty, did not even see a grouse; this country is bare of game; had in the forenoon heavy cold S.E. wind; cleared up in the afternoon; camped on a flat; were dreaming of nothing else but splendid dinners; felt very hungry.

June 16. Weather fine; started again with the raft; George the hunter who went along the shore, if possible to shoot something, no matter what, called out that he had found a trail, we abandoned the raft and followed the same afterwards, it was a well beaten trail, with still fresh horse marks on it; we reached that afternoon the head of the Lake. One of the McNiel's fired a gun shot at a brace of ducks, but missed, but still that shot saved us. Then an Indian came out of the bush to see who was firing that shot. He took us to his hut, and had immediately two kinds of small fish boiled, which we found splendid; we made in the best enquiries of their age, and how long they have been, lying on the Ground in the sun. The old Indian informed us that on the other side of the mountains towards west, did exist a good Trail, but did not go further than to Tiedemann's glacier or to the Canon; he also informed us to take some meat with us, as the country to Alexandria was entirely destitute of it. The hills getting now low, with pleasant valleys between.

June 17. Stayed in camp George and 2 Indians went out to hunt, to have some meat to take with us, but returned late in the evening empty, did not find anything; one Indian hurt his knee very badly by falling from a rock.

June 18. Started with 2 Indians and a small amount of dried fish for Alexandria.

Travelling from 15 to 30 miles a day, Tiedemann reached Fort Alexandria, the Hudson's Bay Co. post on the Fraser River, seven days later. One day from the post Tom and Henry McNiel had to be left behind, and horses sent back for them. But after about a week to recover Henry McNeill (as Waddington spells it) led the party back to Bute Inlet by way of the west branch of the Homathko—of which route they had been told at Tatlayoko Lake. Tiedemann stayed in Alexandria waiting further instructions from Waddington.

Modern conditions of travel along the east branch of the Homathko are described in "New Ways to Waddington," by Ferris Neave, *C.A.J.,* 1933, pp. 33-46.

Hermann Otto Tiedemann, civil engineer and architect, was born in Berlin and came to Victoria in 1858. He designed the old Legislative buildings in Victoria. Just when his connection with Waddington's road to the Cariboo ended is not clear. He wanted to carry the road around the cliff faces by timbers anchored to the rock at one end and supported at the other with posts standing in the river— he did not seem to foresee what driftwood would do to such a structure. In 1874 he did complete the Waddington road through the canyon by using rock-filled cribs to carry bridging, but high water carried it away that summer. The reports of the "Royal Commission on the C.P.R., 1888," suggest that he was commonly known as "Tide-man," a two-syllabled word instead of the Teutonic three.

The original of Tiedemann's report is in the Provincial Archives, Victoria, B.C., and the foregoing copy is due to the kindness of Willard E. Ireland, Provincial Archivist.

PIGEON SPIRE FROM THE NORTH

BY FRED BECKEY

Three of us from the Seattle Mountaineers, Ralph Widrig, Joe Hieb, and I, were discussing new Bugaboo routes while finishing dinner at timberline under the shadow of Snowpatch Spire. We were anxious to enjoy some steep, solid granite in a region that obviously tantalizes the climber, after most discouraging experiences with vertical scree on reconnaissances of Brussels Peak and the tower of Eiffel.

Pictures and reports of the sheer 1,500-foot north face of Pigeon Spire had helped to lure us into this land of granite peaks and my favorite tree, the larch. The morning of July 17 found us clambering through the icefall spilling east from the Warren névé between Snowpatch and Pigeon where I remember chopping steps across and up some rotten ice ribs. Soon our proposed route, the only one thinkable, came into full view. A great rock couloir, well adorned with verglas, split the cliffs west of the little pinnacle low on the north arête, leading to a large ice patch. Above that, the face promised no continuous route, but we decided to try anyhow, feeling the challenge of exploratory climbing. As we came to the bergschrund beneath the couloir at 11:30 it became all the more evident that a grim battle with great difficulties was about to begin. To minimize weight and yet lose no efficiency, we left our crampons, one axe, and Hieb's boots here for, if successful, we planned to circle back via the conventional route. Thus throughout the climb I would wear Bramani rubber-cleated boots, Hieb, tennis shoes and Widrig, nailed boots on the ice and tennis shoes on the rock.

Due to very unstable bridging snow, I had to crawl over the schrund before kicking steps a rope-length up a 50-degree slope to a belay point. On the next lead I continued to the upper limit of the ice, chopping a few steps, and worked up the left side of the couloir to a belay stance over rock that could hardly be considered as easy. Hieb then took the lead, crossing a vertical rib on a fingertip ledge, and dropping to a platform near mid-gully. We quickly followed and then studied the horrible looking pitches of the upper couloir. The appearance of two big overhangs, thatched with verglas and rotten snow, and dripping with water from the ice patch, all but kept us from continuing.

The next 120-foot lead was incredibly difficult. Hieb slowly worked up minute cracks at the right wall of the couloir, frequently placing pitons, and using one of these for aid on an absolutely holdless pitch, as we watched admiringly with chattering teeth, for brisk wind in the shadow increased the chill. Widrig came up and took the lead over snowy rock. Then a vertical face required pitons and tension, taking him beneath the dripping, glazed overhang.

After donning felt pullovers he placed a safety piton with some difficulty to one side and advanced to a rather debatable foothold on the edge of the recess. A route to the right of the overhang was rendered useless because of rotten rock and higher up, by the absence of holds or cracks. It had to be the overhang or nothing. From an awkward position he pounded a high angle piton to the hilt while water ran down his arm, used a sling to maximize his height, and groped around on the glazed rock for an opportune handhold. He found nothing but iced slab, so with the hammer chipped off numerous ice cakes and segments of rotten snow, the fragments hurtling past me, almost 200 feet vertically below. He then found a higher crack and pounded another piton. After he had inserted a sling I shouted to Hieb to give tension, as Widrig was out of his sight. I watched him rise on the sling, chip off more verglas, locate a "thank God" handhold beneath a

snow blotch and insert a piton from which he could tension around a huge, overhanging, glazed bulge. Just at the end of his rope he reached a belay ledge. He shouted that the next pitch looked better, giving us more hope, for above that, we recalled having seen the ice patch from the glacier. I came up to Hieb's minute belay stance largely on tension, wishing I had sneakers, and removed the iron. Hieb then continued, taking the next lead. After muscling up a vertical flake, he wormed up a very difficult wall that once bulged into an overhang. Pitons were required for safety; in fact we wondered that he did not need tension. Some time later, with numb fingers and wet clothes, we consolidated at the base of the ice patch, happy to be out of the great couloir. I took the lead, finding the going more treacherous than we had anticipated. Seeing no glare ice, we had left crampons below to save weight. But beneath several inches of soft snow, all was steep, blue ice. After finding that the fringing slab led nowhere, I worked a delicate lead to a belay stance at a rock snag on the ice edge, once placing a piton, and trusting largely to the superficial snow. As the next two rope-lengths became even more precarious, I had to chop steps. Hieb attempted to climb the rock; then I worked 50 feet further up the ice and found a feasible rock exit on its left side. A short scramble along the north arête led to the top of the ice patch.

Toward the summit a vertical face on its east side, above a snowpatch to our left, showed no weakness. Not being anxious to spend the night searching for the route with flashlights, we looked elsewhere. Just above us rose a 140-foot, 70-degree slab that had appeared justly impossible from below. But it was cleft by a deep two-foot crack which Hieb navigated, either stemming or using the right edge as a layback hold. Halfway up he rested, placing a safety piton, for the lead was both extremely touchy and exposed. From the crest of the arête he belayed up Widrig, who gave him a shoulder stand to swarm up a holdless ten-foot step beyond the crack. Even with the shoulder this called for perfect balance and pressure climbing.

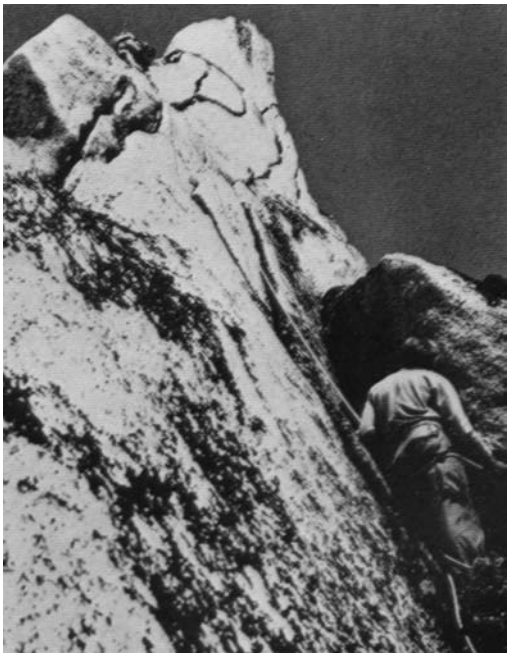
Now we felt better, for only an ice patch separated us from the easy summit rocks used by the regular route after its traverse from the south summit. Hieb belayed me as Widrig changed back to boots for the third time. First came a rock scramble; then for two rope-lengths I cut steps for one foot only, often relying on the axe pick, for time was running short.

At seven o'clock from the summit, we looked with interest toward the Howser group and its icy south tower. To the north, gleaming in the late sunlight, Snowpatch stood almost in line with Bugaboo. Beneath broken clouds, the Battle Range, Sir Donald, the Goodsirs, as well as the high Purcells to the south stood out amid the ranges. Over the Septets hovered a streaky cumulonimbus that fortunately had missed us. But as it was getting late, we forgot about the scenery and hurried down the regular route, traversed beneath the west face to our cache, and rambled to camp via the Bugaboo-Snowpatch col.

In the morning we started up the rocks of Snowpatch, but hurried back to camp when clouds showed evil intentions. Telescopic surveys of the peak showed us why so many climbers lacked the courage to try it, for the upper face bewilders route finders. Two days later as the weather improved, we made the climb in five and one-half hours from the east col, enjoying the fine rock immensely. Two of the most difficult pitches, the overhanging traverse and the slab beneath the quartzite vein, were additionally bothersome because of wet rock. Flowering moss, growing in many steep cracks, lent color to the climb. During a long summit siesta we gazed at the north face of Pigeon, somewhat glad that was all behind now. At dusk, a porcupine made the mistake of wandering into camp, allowing us to add variety to the diet.

On July 21 we moved camp almost to the summit of Crescent, climbing all six summits. Widrig and Hieb made the first ascent of the short, but difficult southeast (the lowest) tower, while

The New Route On North Face Of Pigeon Spire.
Photo R. Widrig.



On Gendarme Of Bugaboo Spire.
Photo J. Hich.

I climbed to the end of the exposed sill at 8,500 feet on Bugaboo's north face to seek a summit route. Although the upper portion of the face offered hope, the middle section showed only near-vertical downslab. We did not have the time to work on such a doubtful problem. The following day we moved camp to the moraine beneath Snowpatch, climbing to the far summit of Bugaboo in 2 hours 20 minutes from the Snowpatch-Bugaboo col. While leading the gendarme pitch I wondered why Kain didn't use sneakers. The placing of one solid angle piton in a slanting crack just before reaching the crossing point is a better protection than poorly placed iron we found.

The next day dawned darkly, but as it was our last we hurried up Marmolata between storms. We thought of climbing the north face, but followed the regular east ridge upon seeing it was short, rotten, and uninteresting. Before nightfall we hiked to the road in a rain. But in the morning we found our hiking was not finished: a washout had kept the jeep nine miles down the road.

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PEYTO LAKE CAMP

BY HELENE G. BOEING

As one of the newest and greenest but most enthusiastic members of the Alpine Club of Canada, I have been asked to write an account of the 1948 summer camp.

After spending the greater part of every year sitting behind a desk in one of Chicago's loop buildings, I like to become an adventurer for at least two weeks every summer. This year I wanted to get into the fabulous Canadian Rockies. I had been thinking about the Alpine Club since reading an article about it a year ago in the New York Times. However, at any mention of mountain climbing, my Chicago friends would throw up their hands in horror and say, "Why, mountain climbing is dangerous, and people who climb mountains are peculiar!" But after correspondence with Mr. Wilson, the Club's Secretary, I felt encouraged and decided to laugh at the admonitions of my friends. I said I would go, and set about acquiring that interesting paraphernalia needed in the mountains—climbing boots, ice-axe, snow glasses, parkas, moccasins, and even knickers, as I was determined at least to look like a real climber.

I left Banff for camp with a group from the Club House on Sunday morning and arrived at Base Camp on the Banff-Jasper Highway just north of Bow Lake at about noon. There we met many more of the early arrivals. We had lunch at Base Camp and after having our dunnage weighed for the pack train, started out for the main camp.

There was a five-mile trail into camp, and, according to the prospectus, it was to be a well-defined trail through forest and over an open slope, across the gravel flats and over a wooded hump to the campsite. I hiked in with two Canadian girls who were novices like myself. We missed that well-defined trail and found ourselves high on the cliffs following animal trails. The whole valley lay below us like a map, and, remembering our prospectus, we could see just where we were supposed to be but could see no way of getting down there. There was beautiful Peyto Lake at one end of the valley, that unbelievable turquoise blue of glacial lakes, surrounded by dark, heavy forest and fed by the milky-white glacial stream which spread over the gravel flats in spidery rivulets. At the other end of the valley was Peyto Glacier, hanging between two mighty peaks. Below us was that dark wooded hump on the white gravel flats which we knew must be the campsite.

We were excited and happy as we came into camp that night and glad we had brought cameras and plenty of film. Even on this first day we had seen elk, moose, Rocky Mountain goats, and bighorn along the Banff-Jasper Highway, as well as beautiful Alpine flowers and unbelievably gorgeous mountain scenery.

Camp looked like a little Indian settlement, with its red bell tents that reminded one of tepees. It was situated in a clearing just south of the wooded hump, out of sight of Peyto Lake, but within easy distance of a circle of many fine peaks. We soon established ourselves in our tents and after exploring the dining tents, tea tent, cook tent, and office tent, decided that this was luxurious living, in spite of the wilderness. And best of all no postcards, no newspapers and no radios! Our only contact with civilization for two weeks was to be Jimmy Simpson's daily visit with the pack train. Meals were served in enameled tin dishes at pine-log tables with pine-log benches, but one merely had to wait for that welcome bell to ring, sit down and be served by good-natured camp boys! And Ken Jones' delicious cooking soon changed our city appetites to those of lumberjacks, and our manners too, I'm afraid.

Social activities in camp centered, as they always do at Alpine Camps, around the tea tent and the evening campfire. The serving of afternoon tea was not entirely an unexpected luxury

in this wilderness camp, as it was a custom I had recalled having encountered in other trips to Canada's north country, and one whose merits cannot be overestimated. What luxury it was to return, exhausted from a long day's climb, and drop in at the tea tent, be served by the volunteers of the day, and compare notes on the day's activities in the mountains. And it was the afternoon social gathering too for those who had been taking it easy around camp or had gone on shorter climbs or picnics.

But the big social event of each day was the evening campfire. We usually started out by singing Alpine songs and, after a day's climbing, it would be difficult not to fall under the spell of the mountains in this beautiful setting. Reports were usually made of the climbs of the day, but highlights of the campfire entertainments were the interesting talks and lectures given by members of the Club. Mr. Sampson told the history and origin of names of the surrounding peaks and glaciers. Mr. Rans reported on the condition of the Club huts. Captain McCarthy gave again his fascinating account of the first ascent of Mt. Logan. We had all been looking forward to this and by the attention given him it was hard to believe that many had previously heard his account of the trip.

On Sunday we attended a Church service held at our campfire spot—a most inspiring setting, with its backdrop of Peyto Peak and the falls. A memorial service was given at Sunday night's campfire for the members of the Club who had died since last year's camp and Mr. Sampson's eloquence made this occasion an impressive one for us all, including even those who had not known the members for whom the service was being held.

The evening's entertainment occasionally took on a lighter vein, as when Henry Kingman kept us laughing with his "Ole" stories in Scandinavian dialect from northern Minnesota, and when the many-versed songs were sung by the Vancouver section. And the unrehearsed skit put on one night under the able direction of Mr. Walter Read, the Club's veteran actor! Mr. Sampson had unmercifully chosen me to be the leading lady, and Mr. Read chose the two unsuspecting leading men, George, "the husband" and Dick, "the lover", while Mr. Sampson, himself, played the policeman.

A spirit of fun and good fellowship pervaded the entire Camp. Peggy Wylie and Bea deLacy complained one day of the lack of privacy in their tent as the entrance opened right on to the main thoroughfare of Camp. They returned from campfire one night and found a big tarpaulin rigged up before their tent, with a sign saying "Ring down the curtain—there's no show tonight." And we presented Mr. Sampson with his own personal flag one night at camp-fire, to be flown in future above his tent.

Dr. Riley was an innovation at Peyto Lake, as the Alpine Club's first official Camp Doctor, and though the Camp's safety standard was nearly perfect (I say nearly, with my head hanging as I later helped to destroy an otherwise perfect record) he was invaluable in caring for and helping us prevent those bugaboos of the mountain climber—blistered feet and sunburned faces. Even these were kept at a minimum.

We were fortunate in having fine weather during most of the two weeks, having only a few days of rain, not enough to ruin many climbs, or to dampen any spirits. A vigorous climbing program was begun the first day and continued throughout Camp. Most of the peaks were reached by going up over Peyto Glacier. The most popular peaks were Peyto, Portal, Mt. Baker, Mt. Rhonda, Mt. Thompson, and Trapper.

One party went up Portal and came back with tales of some very jagged rocks. For evidence, there were several cases of torn trousers which attested to the fact that in spots the journey had not

been entirely comfortable. Several elaborate patches appeared, the prettiest being Mr. Ho's, made from woolen socks of contrasting color.

Mistaya Mountain was an interesting climb, made by crossing the cliffs southwest of camp and reaching the mountain by skirting Caldron Lake. A longer trip was made by one group, including the very active Harvard men, to Ayesha Peak in Yoho Park. A first ascent was made of one of the main peaks of Dolomite Mountain, opposite Bow Lake, by a party led by Major Rex Gibson. And Don and Phyl Munday led a first ascent up the precipitous, icebound, north face of Mt. Thompson. Several trips were made to Mt. Athabaska, giant of the Columbia Ice Fields, the climbers leaving at dawn and returning to camp by midnight.

The high cliffs on either side of the valley provided fine and interesting rock climbing and several groups of experienced climbers scaled the cliffs opposite camp, which they named Caldron Cliffs. A rock-climbing school was held on the cliffs back of camp, and several mountaineering and snow schools were also provided for beginners. There were many pleasant hikes in the beautiful high meadows and to the lovely group of falls at the cliffs below Peyto Peak.

Although climbing was, of course, the one big common interest, it was not surprising to find among these lovers of the outdoors such hobbies as painting, photography, or study of wild flowers, wildlife, and mountain country. We admired the beautiful water colors of Connie Bonner, the sketches of Dr. Riley and others, the many superb pictures of the photography competition, and the Munday's fine flower prints. It made one long to paint, to become more expert in photography, and to learn more of the flora and fauna of this fascinating country. Those of us who made trips to Base Camp always hoped for a covetous glimpse at the indescribably beautiful water-colors of Fred Brigden, the famous Canadian artist.

Of my own personal experiences on the mountain heights, there were several trips that stand out particularly in my memory. Caldron Lake trip was my first climb—it was really only a picnic, but I remember it as my introduction to Peyto Glacier. Till then glaciers had just been parts of beautiful but distant scenery. We crossed the scree slopes at the base of Peyto and ate on the high, treeless alplands covered with exquisite alpine flowers, identified for us by Phyl Munday, our guide, as moss campion, dryas, bladderwort, heather, gentian, and many others. Caldron Lake was in a barren-looking valley and of a green color, very unlike the blue-green of Peyto. The trip was a pleasant one and we, who were beginners, came back already feeling a new confidence on the rocky slopes, ice and snow, and signed up for the next day's mountaineering school with Major Rex Gibson.

On this trip we really became well acquainted with the glacier, peering into its roaring moulins, crossing its bottomless blue crevasses, climbing with ropes and crampons among giant blue séracs, glissading thrillingly down its steep snow slopes, and admiring the dazzlingly brilliant icefield of clean, white ice and snow for miles in every direction, broken only by the surrounding circle of dark peaks.

It was on Peyto Peak that I made my qualifying climb. Bea deLacy had taken on the gargantuan task of graduating six beginners that day, for which we greatly admired her. She had the expert assistance of guides Werner Moser, a new member from Switzerland, and Yitkon Ho. The trip was completed without mishap although I've a feeling several of us would admit to having our hearts in our mouths for a few moments while crossing that narrow ledge and climbing up the rock pinnacle at Peyto's summit, especially when a dislodged rock started a roaring avalanche directly below us some hundreds of feet. The view was superb and I got some lovely shots with Werner in the foreground, belaying the next person right over the edge of space. There were six happy people

and, I believe, three somewhat relieved ones, as we came into camp that night.

In many ways my most memorable trip was the one I made the day before I left camp—a circle tour of the glaciers, up Bow and down Peyto. We hiked out to Base Camp and from there to Bow Lake, taking our time and stopping on the alplands overlooking Bow Lake for lunch. It was after two when we roped and started over Bow Glacier. It was steep and Kay Day had to cut ice steps all the way up, which made the going slow. By the time we reached the top, we were in the midst of a snowstorm and there was a covering of fresh snow over the icefield. We stopped about six o'clock, to eat the last of our sandwiches and chocolate bars, and then continued on our way. When we were about halfway across the icefield the snow stopped, the clouds broke, and we saw one of the most beautiful sunsets we had ever seen. The sky was still dark gray, contrasting sharply with the clean, white snow, and the sun glanced off the peaks in the west in brilliant silver and gold rays, giving an unreal light to the whole desolately beautiful scene. The rocks in the east looked bronze and a brilliant rainbow completed the scene. We seven, alone on that enormous, desolate icefield, stopped to marvel at this display and forgot how wet and cold we were.

We started off again and reached the bottom of Peyto Glacier after ten, with just barely enough light left in the sky to see. It would be hard to believe, after a day so packed with adventure, that anyone would stumble on a rock in the dark, not far from Camp, and break an ankle. It would be hard to believe, yet that is exactly what I did, and I had to be carried into Camp by Kay Day and Sydney Vallance. But after the wonderful experiences I'd had in the last two weeks, it would take more than a broken ankle to dampen my enthusiasm for the Alpine Club and for the mountains and climbing. I've fallen under the spell and this year is going to be a long one waiting for next year's camp in the Freshfields.

When my Chicago friends say now that Helene has finally found a vacation rough enough for her, I smile to myself. They have never seen these lovely alpine meadows, carpeted with delicate flowers and landscaped with beautiful firs and pines. They have never had the thrill of trudging over a desolately beautiful gray-white icefield, and they didn't see the sunset I saw, one sunset in a lifetime.

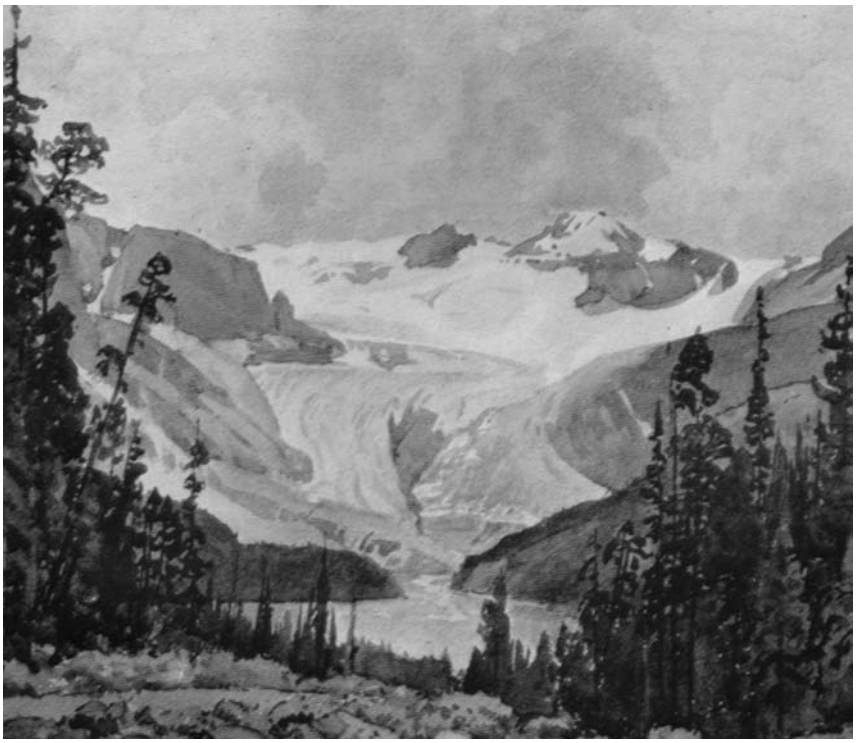
MT. THOMPSON BY NORTH FACE

BY W. A. D. MUNDAY

Sight of an icefall always sets my ice-axe tingling, and my wife shares the same delight. When we saw the north face of Mt. Thompson from eight or ten miles away on the Banff-Jasper highway we told each other, "That's the way to climb Thompson." Admittedly, it is a casual way to reconnoiter a route.

Sheet 17 of the A. B. C. Boundary Service omits this glacier on the north face of Thompson. It lies to the eastward of the north-westerly rock spur of the mountain. Avalanches poorly nourish the flattish broad lower glacier which, lost beneath moraines, seemingly no longer quite unites with Peyto Glacier. But a small upper snowfield sends down a narrow and really steep column of ice to give the glacier one touch of dignity.

My rope included Phyl (my wife) and Dave Bidwell. Lynwood Erskine led the second rope with Roger Clapp, Peter Jackson and the Club's almost official movie-maker, Len Chatwin. Of course the presence of a camera-man meant that the party was not under my control all the time. This, somebody said, "was in the interests of good, clean entertainment."



Peyto Lake Campsite From Lookout Point.
Photo Brigdens Limited.

From The Painting By F.H. Brigden R.C.A.O.S.A.

At Peyto Lake Camp. *Photo H.G. Boeing*

Kneeling L. To R.: Mr. Vallance, Mr. Sampson,
Mr. Richardson; Standing, L. To R.: Capt. Maccarthy, Lady Wheeler,
Sir Oliver Wheeler, Mr. Sanson, Mr. Wilson, Mrs. Richardson.

Phyl and I did not wear crampons. I do not think that as things turned out we lost an important amount of time due to this—probably less than due to the fact that the writer found himself not fully recovered from a recent illness.

We started up near the true right of the icefall and headed up at a steep diagonal into the central bulge. The second rope ascended close to the cliff where there might be too much rock-fall a little later. Possibly their route was more practical, but I had come to climb ice, and I think Len's blandishments helped persuade them because following us would have yielded Len few picture-making positions.

A novel feature of the climb was the presence of patches of sticky ice. A moderate blow sufficed to bury the pick full length, where it stuck and had to be twisted loose. Such ice had to be pecked out in small bits. I do not recall ever cutting steps in ice of such complex structure. Rarely could two successive steps be cut by blows directed from the same angle if one were to avoid risk of the step flaking off. To increase the difficulty, we had to exploit a narrow cleft, and its walls restricted free play with the axe.

The second section of the icefall offered even steeper and much more exposed climbing. Given time, a resolute party could master most of it, but towards its brow were sneering lips which might know what they sneered about. We worked left round an ice shoulder and while crossing a crevasse came under fire of a stone chute which earlier in the day we had agreed was one place to keep clear of. I was amazed Phyl was unhurt by a sizable rock which snatched at the elbow of her shirt.

An enticing corridor now led off to our right, but Phyl and I did not like the "feel" of what lay mostly hidden above. The alternative was to traverse the black, nearly vertical wall of the stone chute and gain the rocks. It meant mounting a punctured but just adequate snow bridge over a big pot-bellied cavern to get footing on the wall.

A line of fracture in the ice cliff aided in rapid cutting of steps across it. When I got across on to the rocks and discovered the pile of debris resting on steep melting ice, I urged my companions to waste no seconds below such a hazard. Four hours had elapsed since we roped.

The route to the summit from above the snow basin was almost entirely broken rock. We descended the westerly face. One member nearly blacked out when he lay down and gulped water from a pool in the snow on the glacier. Dr. G. C. Riley, the camp doctor, attributed this partly to shock and partly due to lack of salt in the body. Dr. Riley emphasized the benefit of taking salt tablets at the same time one drank snow water. We followed the usual route down Peyto Glacier to the Club camp.

PORTAL PEAK

BY ALAN MELVILLE

Six of us arose reluctantly at 5:00 a.m. on Monday, July 19, thus clearly demonstrating the magic of the mountains. Normally, a portable derrick, or national emergency, is required to accomplish this feat. Before long, groups of sleepy climbers gathered in a tent which had a large sign at the door. Heavy black letters read "Cook-tent—Keep Out."

Having consumed a hearty breakfast, we felt a little better and decided that perhaps we could stagger off up that insignificant mountain after all. The weather looked promising. So we gathered up our climbing necessities and started off for Portal Peak.

Palmer & Thorington's Climber's Guide says Portal Peak is 9,552 feet and is ascended via Bow Glacier and easy southwest scree slopes. We decided to tackle the mountain via Peyto Glacier and the northwest arête. From the map contours, this appeared simple. The mountain attracted us, not so much because of climbing possibilities, but because we felt it would provide a fine viewpoint.

As the hour was early we made short work of a three-mile hike across the now familiar Peyto Glacier to the Wapta Icefield. The glacier was in excellent shape with firm walking and very little snow covering the ever present crevasses. We had an early lunch at the foot of the southeast scree slopes of Mt. Thompson and it was here that we found out that limeade powder and mosquito repellent is not an ideal thirst quencher. The directions on the repellent bottle said something about melting plastics, but nothing about what it would do inside a stomach and after all, there were no mosquitoes!

Here also we were treated to our first—and somewhat disquieting view of Portal Peak. The "easy scree slope" up the southwest slopes was nowhere to be seen. The northwest arête was a series of steps, straight along, then straight up—a logical proposition for a centipede with suction cups, provided that he exercised due care and diligence—but not for us mortals. The rock also looked pretty rotten, and we wondered what held the mountain up in the air. The map had cruelly deceived us.

The west face consisted of a steep scree slope ending in rocky cliffs and towers. On the south arête, we could see a gendarme which looked very like "Oscar" the penguin in the comic strip "Bugs Bunny." We climbed the scree, which was fairly firm, to the south arête at a point well below Oscar and followed this to the foot of the cliffs. We traversed back to the west face and ascended a couloir consisting of sloping slabs of rock liberally sprinkled with scree. We reached Oscar without dislodging any rocks on the last man and paused to study the route and take in the scenery. And it was truly breath-taking in its grandeur. Immediately below us lay the huge Wapta icefield out of which rise many prominent peaks, including Ayesha, climbed by Herman Genschoreck and his party just a few days previously. Many other friends were visible, including Baker, Trapper, Rhondda and of course St. Nicholas just across the Bow Glacier. Further peaks stood out in all directions.

Fifteen hundred feet below us lay the icefalls of the Bow Glacier and we were thrilled to see four little black dots making their way through the falls. It was Tom Marston and his party. They had set out from camp twenty minutes before us to climb Bow Glacier, round the base of Portal Peak and descend Peyto Glacier to camp.

After a short route reconnaissance we decided to try the southeast face for the summit, there being no apparently easy route. We traversed this face, working upward along narrow ledges. Fortunately, we were all thin, but at one place, the face developed a corporation just over the narrow ledge we were traversing. A little care was necessary here to avoid dropping in on Tom Marston with a couple of very brief stopovers! In fact we were very careful, feeling that this was no time for social calls. On completing the traverse, we attained the summit on good climbing rock via the east arête.

There was not much room on the top, which was composed of rotten brownish rock. There was, however, a fine cairn which was built by D. Duncan and L. Hudson, who made the first ascent in 1926. Their record was practically illegible, as they evidently had no can and placed their notes under a rock. No party has registered since. As we had no can either, we left our notes under the same rock and they were taken care of by Kay Day and his party, who climbed this interesting peak on the following day.

We looked over the edge of the northwest arête and confirmed our suspicions. It was all cliffs and rotten rock. Even the col, itself, looked dangerous. A quick glance to the south revealed a large storm front piling up and St. Nicholas flying a flag. We therefore started down immediately, following our route up. The party belayed each other down to Oscar, the gendarme, and un-roped there. We proceeded down the scree slopes in close column to avoid injury from possible dislodged stones. There was a very real danger of this in the couloir.

Upon arriving at the Wapta icefield, we had a bite to eat and joined forces with Tom's party which had evidently had a very fine trip. We also put on storm clothing in readiness for Jupiter Pluvius, who, observing this precautionary measure, immediately withdrew, leaving a clear sky and hot sun.

There was a great deal of water on the glacier on the return trip and Tom Marston enquired whether the party had strayed from the route and was traversing Peyto Lake in error.

Tired, but happy, we reached camp at 6:30 p.m. and hastened to do justice to an extremely excellent hot dinner after a fine climb up Portal Peak.

THE TRAPPER TRAVERSE

BY ALAN MELVILLE

Each one of the seven of us opened a doubtful eye and cocked it at the sky, for it was 6:00 a.m. on the morning of July 15, and we[1] planned to traverse Mt. Trapper, 9,790 feet. Evidently the weather man wasn't making any rash promises. However, as nothing violent appeared to be in the immediate offing, we staggered out of our sleeping-bags, propped open the other eye and proceeded to attack vast quantities of Ken Jones' porridge to fortify us against a 2½-mile walk up the Peyto Glacier. We then laid away considerable quantities of flap-jacks, bacon and coffee to ensure sufficient energy to do a little climbing, for we planned to traverse both the Trapper Peaks.

Having checked film, ropes, lunch and snow-glasses, etc., we set off at 7:15 a.m. for the tongue of Peyto Glacier. It was not long before we set foot on the ice where we paused for a moment to remove extra clothing and view a torrent of muddy silt-laden water pouring out from under the bottom of the glacier. It was difficult to realize that this very water contributed to the striking green of Peyto Lake.

We proceeded with some caution up the glacier, which is quite steep at the bottom. Well nailed boots paid dividends in the form of some security against sudden and painful contacts between ice and the more tender portions of the anatomy.

We noted, as we climbed, the rapid recession of the ice as shown by the moraines and more recently by indicators, placed in the ice and on the rock walls to measure flow and recession.

Ample reward for our efforts was obtained by the increasing view and the ever changing conditions of the ice. Small round holes, known as "mills", or "moulins", which provide surface drainage right to the bottom of the glacier, were given respectful and not too intimate attention. They gave us some idea of the great depth of the ice. Some two or three days later, I stood at the foot of this glacier and watched between forty and fifty people making their way up the ice to the peaks beyond. Doubtless this was the largest human trek up this little travelled glacier. Our official photographer, Len Chatwin filmed the event.

1 Sylvia Lash, Patsy Miller, G. Capes, Mallory Lash, W. Lash, P. Mathews. A. Melville (guide).

As we climbed, we were rewarded on our left by an unrestricted view of the spectacular hanging glacier on Mt. Thompson. Straight ahead lay the beautiful ridges of Mt. Rhondda, covered with a fresh layer of snow. Just to the right of us lay Mt. Peyto with the two peaks of Trapper appearing just behind it. Glancing back we were afforded a fine view of the three peaks of Mt. Patterson and directly below us, Peyto Lake and the campsite, with Observation Peak in the background.

By 11:00 a.m. we reached the Baker-Trapper col, having made wary progress over the upper portion of the glacier which was full of narrow crevasses. Some of these crevasses were hidden with a few inches of covering snow and more than one climber made interesting but undesirable tours a rope-length down into the depths. These tours were usually accompanied by muffled reports from below on the condition of the ice and other things.

After removing ropes, we tackled the scree slopes of the smaller peak of Trapper. The scree, loose at first, firmed up nicely as we climbed and we stopped often to view Mt. Baker, just across the col to the south. We felt sure that no other point could possibly afford such a view of this 10,449-foot peak, with its beautifully symmetrical lines and its fields of snow and ice. We gained the summit of "Little Trapper" at 12:00 a.m. and stopped there over an hour for lunch and picture-taking. There was no cairn on this little peak, and no sign of any previous occupation could be found. We wondered whether others had preceded us.

After a short study of the main peak of Trapper, we descended with little difficulty from our viewpoint and immediately started up its steep scree slopes. Upon gaining the summit ridge we were doubly rewarded, first by a sharp ridge of good climbing rock and secondly by magnificent views in all directions. The whole panorama of the Rockies, in all its magnificence, stood out with remarkable clarity for our inspection. We crossed the ridge to the cairn which contained the names of H. S. Kingman, J. M. Thorington and C. Kain who made the first ascent of this peak in 1933. No parties have registered at the cairn since that date.

After a three-quarter-hour rest, we reluctantly started down. To complete our traverse, we descended a steep snow slope on the northeast face of Trapper, working our way down to our right after a short exploratory traverse into glare ice to our left. We soon regained Peyto Glacier. We wasted no time returning to camp which was reached at 6:30, nicely coinciding with the supper gong. Great justice was done to this well-earned meal by seven sun-tanned veterans of the Trapper traverse, after a fine climb from Peyto Lake Camp.

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MAPS

BY E. O. WHEELER

Maps are an almost indispensable adjunct to the mountaineer who wishes to make the most of a short holiday. The explorer must perforce do without maps, or at best with very general or sketchy maps, and to him the other side of the picture shows—the necessity for making a map.

There are thus, as always, two sides to the picture; the one represents the point of view of the map user, the other that of the map maker. The former likes an accurate, up to date and easily readable portrayal of the country over which he intends to operate; the latter wishes to record the country over which he has travelled with the least possible delay to his movements and (not least) with no more straws added to his back-breaking pack than are really essential.

The point of view of the professional surveyor is different again; he seeks to depict the topography of the area he is required to survey in the most accurate and clear manner that the money available, and hence the time available, will permit. To him, one kind of topography is like another and how he travels, where he goes and what he sees is purely incidental to his profession. His job is to make a map.

There are good maps and bad maps, good sketches and bad sketches; an expert will assess very closely the "worth" of a map or sketch even without seeing the country it depicts. Sketchy work—or "fudging"—is very readily detectable, merely by examining the line-work of the map.

This faculty is much used in war by Intelligence and Survey Officers in respect of maps captured from the enemy or otherwise "acquired". An accurate assessment of the value of such maps is essential to the military forces who will make use of them. It frequently falls to the lot of a Survey Officer in war to duplicate captured enemy maps—and quickly. This is a problem that is beyond the scope of these notes, one requiring considerable knowledge of map reproduction methods and technique and one that, in war, causes map reproduction experts very severe headaches.

To produce a multi-colored map even under peace time conditions requires much labour not only on the publication side but also in respect of drawing; quite an inoffensive looking colored map may require as many as ten separate printings to complete—that is, may have to pass through the printing machines ten times. One need not ask why multi-colored maps are expensive, since each separate printing is likely also to require a separate drawing together with ancillary drawings such as "color-guides".

So much by way of introduction. Now let us consider what the map user wants, almost certainly more than the map maker is able to give him when time, money and the various other factors concerned have operated quite apart from the factor of skill on the map maker's part.

The user likes to know, first of all, just where he is on the earth's surface. It is not much use to say that "This is a map of Mt. Snooks (*circa* 15,000 feet)" if the reader of the map has not the very faintest idea whether Mt. Snooks is in the Arctic or the Sahara. Placing on the earth's surface can be achieved very easily by one (or both) of two methods—a notation on the map of the latitude and longitude of one of its corners, or of some point on it such as Mt. Snooks; or/and a small inset showing readily recognizable features such, for instance, as Banff, the line of the Canadian Pacific Railway, the Jasper Highway etc. It is easy, for instance, to locate our very pleasant campsite of last year at Peyto Lake on a little inset map copied from any atlas or geographical map that happens to be handy while making the main theme of our map the tent lay-out of the camp, or the mountain lay-out of the graduating climbs—or any other theme that the map sets out to develop or illustrate.

The second thing a map user wants to know is, where is north; that is, what is the orientation of the map. If he is a user who himself does sketching he will also want to know where is *magnetic north* in relation to true north. In western Canada, the magnetic declination[1] (as correctly called; sometimes called magnetic variation) is considerable; and it varies from year to year. Round about the Freshfields, the magnetic compass will point about 25 degrees east of true north; this is a considerable discrepancy but unfortunately one that is unavoidable due to the relative position of the north pole of the earth, and the "magnetic pole" to which the compass points.

It is therefore well to make clear on any map what the divergence is between true and magnetic north and, since the divergence alters from year to year, to date the map.

It is conventional, but not essential, to place the top of the map towards true north—hence the expressions "up north", "down south". To play safe, it is wise to show a true north point and to state definitely what the magnetic declination is at the time the map was made, and how much it is believed to be altering annually.

Of course, it is easy to apply the correction the wrong way! ,But that is the map user's business; he must keep his head clear when thinking which side of true north his compass points. Failure to do so may well result in being entirely lost on a snowfield, in fog.

We need not consider that other north, "grid north", that is one of the headaches of the military map maker and user.

Thirdly, a map user likes to know what is the scale of the map, and he likes to have a scale drawn on the map from which he can measure distances by means of a pair of dividers or a strip of paper. The drawn scale should therefore be long enough to permit a single measurement covering at least the majority of distances the user will like to measure.

There are other reasons, connected with the shrinkage and distortion of paper, which make a drawn scale desirable but these only apply where very precise measurements are necessary. The main thing is to say what the scale is; this can be done by saying "One inch to a mile", or "4 miles to an inch" or (in the latter case) more briefly "¼-inch scale."

The user also likes to know what is the contour interval (if any contours) or at what intervals "form lines" (approximate contours) purport to be drawn. Form lines are used primarily to indicate the shape of topographical features on the map but should nevertheless be spaced at approximately even vertical intervals, like contours. They may be drawn more heavily on one side of a hill than on the other to assist in bringing up relief, conventionally usually on the assumption that the light is coming from north and west even though this is often at variance with the facts in the northern hemisphere.

Anyone who is going to use the map seriously will like to know on what material and data it is based and when, and by whom made. This should be recorded in the form of a note or index under some such heading as "Sources of Information". If it is an original survey, the method of survey should be stated. For instance, "Prismatic compass sketch survey by so and so during July-August 1948"; glaciers may change in form very considerably in a matter of a few years, as did the Illecillewaet Glacier between 1902 and 1910 or thereabouts. To date a map is essential.

1 The divergence between true and magnetic north is correctly called the "Magnetic declination", the change in declination that is constantly occurring due to the movement of the north magnetic pole relative to the earth's north pole being correctly called the "magnetic variation". During the war however, many maps were published using "variation" to mean "declination" because the latter was a scientific term not known to all whereas the term "variation" was used colloquially to mean "declination" and known to all. This was unfortunate but— against considerable resistance from scientists—had to be adopted for military maps used by the Allies.

Furthermore, if a map is properly annotated as I have indicated above, it becomes reasonably easy for an expert at least to "compile" several such maps into a composite whole, thus making use of all information that exists about any particular area, irrespective of the scale on which the original maps have been published.

A point that is often overlooked by map makers is that the user does not want to have to keep turning the map this way and that to read the names on it; names should be legible mainly from the "south" aspect with a minimum of turning about to read names following streams and the like. A name should never appear upside down when viewing the map from the bottom, that is, the south in a conventionally oriented map with top at north.

It is a good idea, too, to make a dot on the map to indicate the point to which a height or a mountain name refers; much confusion may be saved thereby, but make the dots firm and definite, and stick to a pattern in the way you place names, heights or other references to the dots. And do not use inverted commas or any other punctuation marks, apostrophes or what not, ever, on any map. They merely confuse.

Incidentally, an ordinary typewriter provides a very good medium for applying names to a map; with a clean black ribbon or (perhaps better) with a clean carbon over the map, names reproduce well when published by whatever means.

This brings us to the publication, or "reproduction", side of the work. I use the term "reproduction" to include enlargement or reduction, often done photographically to make a map fit a page in a publication such as our Journal. Reduction or enlargement (usually reduction is required) is a specialist job; the specialist should be consulted as to requirements. It makes a much nicer finished map if the original drawing is made to a larger scale than the finished publication, because shaky lines are minimized in shakiness and any drawing errors are reduced in proportion to the reduction in scale of the drawing vis-a-vis the final publication scale. On the other hand, to reduce a drawing for publication costs more and takes longer; it may usually be better to draw the final map on the scale you want it reproduced; consult your Editor.

The publication of maps is an expert job. I have mentioned earlier that to produce a single map in multiple colors, as many as ten printings may be required. How many depends on the method used for publication and on the skill with which the necessary drawing or drawings of the map have been prepared by the map maker. Usually, a sketch map will be reproduced in a single color only, black.

The essentials in preparing a map for reproduction are to draw it on smooth, unblemished, unwatermarked paper of as even a texture as possible; and to make all lines on the drawing photo-opaque. Blue is not an opaque color and hence does not photograph. Blue-black ink therefore is not a good bet. A pure black ink, such as "India" ink, produces far better results and far less head-ache for the publisher. Above all, stick to one color; do not ring the changes. If your map is to be published in colors, it is even so usually necessary to make all the actual drawings in black, good firm black India ink preferred. Without special screening arrangements, costing time and money, a variety of colors on a drawing are a serious problem to the map publisher because the various colors and different preparations of color have different actinic properties. On the other hand, a "color-guide" is essential if a map is to be produced in more than one color, drawn as it will (or should) be wholly in black ink.

From here, we may perhaps be permitted to digress a little in a very brief discussion of the actual making of maps and their "fair-drawing" for publication.

The stages involved are:-

I. Field survey
II. Compilation (sometimes, not always)
III. Fair-drawing
IV. Reproduction (including any necessary reduction or enlargement).

I. The field survey may be any of, or a combination of, several methods. In the first place, the field survey must be based on the best "framework" available. This may be an existing map, triangulation and/or traverse carried out *in situ,* or what are known as "astro-fixes"; the latter not usually so good for small surveys because fixing position and direction from the sun or stars is an expert's job and even experts frequently fail in this difficult and complicated problem.

Given the basic framework however, surveys may be carried out in respect of detail by planetable, compass or photographic methods. Photographic methods may be air, ground (perspective) or ground (stereoscopic). Air and ground stereoscopic methods are highly scientific and will not usually concern the ordinary mountaineer, bent on reducing those back-breaking straws to a minimum. He will usually be able to do photo survey only by means of the perspective method, that usually called the "Canadian Method", developed by the late Dr. Deville, Surveyor General of Canada some years ago and now used (often in combination with air survey) in the Rockies and other mountainous areas.

A discussion of planetabling, a science and art in itself, will be out of place here as will a discussion of air survey, also a highly technical and expert job. There are however a few points that the mountaineer taking photos from the ground might remember, to make his photos of the greatest value in making a map.

(a) Know where you are and record it. That is, fix your position and height by the best possible means at your disposal.

(b) To the utmost of your ability, keep your camera level, both "fore and aft" and "sideways"; that is, make each photograph as nearly as possible a true perspective of the terrain you are photographing, as seen by yourself looking straight to your front and with your two eyes in one horizontal plane, the plane of height of your own eyes.

(c) Ensure that one photo of a panorama fully overlaps the next. There must be no gaps; gaps are the devil.

(d) Know, and record, the focal length of your lens.

(e) In each photograph note, and sketch and write down, some prominent point appearing in it; measure the angle to it either from north by means of a compass, not forgetting to state that it is a compass (that is magnetic) bearing or by compass or other means from some well known and well fixed mountain that appears on the map or other datum on which you will base your survey.

This is called an "orient point" and greatly aids in turning your photographs into a map.

To turn them into a map is not difficult, provided you have followed the directions I have outlined. The accuracy of the map will depend entirely upon the precision with which you have observed these directions.

If you do not already know, you can very easily learn the perspective construction necessary to turn such photographs into a map.

II. Compilation, that is the amalgamation of various surveys and maps on various scales, may be necessary to produce the composite map you wish to use. There is a trick, several tricks, in compilation. In the first place, one has to know what is the best means of assembling all surveys and maps to the same scale. Then one has to know how to assess the value of the various surveys or

maps; which to accept on a marginal junction where there is disagreement. The expert compiler will make use of the best survey, discarding those of less merit. In passing it may be said that there is never marginal agreement between surveys; always some discrepancy. The trick is eliminating the discrepancy with least loss in accuracy. Compilation of course is not always necessary; your map may be entirely from a single survey. Kindred problems however always arise in all map making.

III. Field survey notes and sheets are usually not in such a condition that they can be directly reproduced. They are apt to be disfigured by wetting, whether from glacial creeks or plain sweat, by wear and tear, even by porcupines. Some redrawing, call it "fair-drawing", is usually necessary. This fair-drawing should be in a style and on material (paper or whatever it is) that the publisher can use, without further alteration, for the final job of reproduction. It should be done in India ink, on hard smooth paper without watermark or blemish and it should be done with precision; no half measures—a line is a line, make it definite.

IV. Reproduction must be left to the publisher, having first consulted him as to requirements. Never send a map to the publisher without first finding out what he can do or what he proposes to do about it. Having sent it to him, leave him to do his job. Don't bother him with large numbers of corrections at or (above all) after proof stage. It is his business to publish what you sent him, yours to send him, *at the outset,* exactly what you want to be published. If you do a good job, the publisher will too; nothing worries him more than a multitude of last minute corrections and additions, though admittedly there will almost always be some. However carefully a fair-drawing is "examined" before submission to the publisher, there are always a few mistakes overlooked that for some reason or other seem to jump to the eye when the proof is examined; one wonders how one could have been so stupid as not to spot them in the first place.

The resulting good legibility of a well arranged, well drawn and well published map is always very much appreciated by the map user who may frequently have to read his map by candle light or failing daylight or through heavy snow glasses in blinding sunlight. Most maps tend to be overcrowded; this is a pitfall to avoid in making them. A very good motto is "When in doubt, omit."—it is far better to make your important items stand out clearly that to have them lost in a maze of (relatively) unimportant sketch lines or names. It is my personal view that widely spaced names, that is names with a wide space between the letters to cover a long river or long mountain range, are out of place on sketch maps; it is better to repeat the name if necessary. It is also wise to draw a small arrow to indicate the direction of flow of any major stream appearing on the map, of which the direction of flow might be in doubt. The arrow should appear either beside the name of the stream or where it exits from the map, or both.

On the map-reading side, the user should assume (in the absence of certain evidence to the contrary) that every line, every dot on the map is put there for a definite purpose and hence has a definite meaning. The main mistake made by map readers is in reading in too general a fashion which is, in effect, jumping to conclusions that were never made by the map maker.

In using colored maps, it is well to study the color pattern; there will usually be a symbols table on such a map and this is always worth study. By the same token, those who make sketch maps would do well to include a symbols table whenever anything appears that is not readily obvious to a user who may be totally unfamiliar with the country depicted or even with the context of the map; he may be using a map torn, literally, from its context in some publication.

These notes are written in the hope that they may be of some small use both to map makers and map users and may assist each to understand the problems of the other.

THE WIFE HE LEAVES BELOW

BY LYNDA R. WOODS

"Golf Widows" and "Business Widows" have become famous in life and literature, but the "Climbing Widow", many of whom exist in this country and elsewhere in various stages of content or discontent, is still an unpublicized species. I belong to the contented variety of this little known group.

I am married to a devoted, thoroughgoing, dyed-in-the-wool, chronic mountain climbing enthusiast. He spends from one to two months each summer in the high mountains and uses the rest of the year dreaming about and planning the next expedition. For me there is never a dull moment. No sooner have I mended the rips and tears of one summer's trip than I begin laying away items in readiness for the next vacation jaunt. No sooner have I become accustomed to the beauties of a summer's collection of kodachromes than another set makes its appearance with even greater thrills and displays of scenic grandeur. Two emotions vie with each other as I view these: one, genuine admiration of alpine accomplishment and the other, deep green envy that I wasn't on the spot myself. But since it is so much more comfortable to take these enjoyments in my own cozy living room than in a mountain tent on an icefield, or on a wind-blown summit, I yearly become more and more contented.

To understand this contented purr, we must go back. We must go back to the very beginning where on a high mountain top our two spirits brushed shoulders two weeks before we actually met. On the snowy dome which is the summit of Mt. Baker our snow tracks crossed, yet neither knew the other existed. Two weeks later in the dead of night he walked by accident into my mountain camp and I thought he was a bear. (Sometimes I still think I was right.)

Two years later at the Rogers Pass Camp in the Selkirks my affianced, having already won the halo of Robson, "took the high road and I took the low road" but we both loved the mountains together, and the lesser summits we climbed together. One day he scaled Mt. Sir Donald and as my head and shoulders were silhouetted against the sky above the top of Uto Peak I was greeted by a wild "hallo-oo" of welcome from the other summit. That shout made it seem as though we were one party.

There followed the next summer the grandest holiday of all—the honeymoon at Maligne Lake, again with the A.C.C. I stood beside my husband on a full dozen summits and even shared the joys of a first ascent. A year later we celebrated anniversary number one on the top of Mt. Shasta, in California. Its rocky summit had been transformed by a recent sleet storm into a glittering fairy palace made entirely of ice feathers.

One summer later I reached the highest summit which is the secret goal of every woman's heart. I held my firstborn in my arms and when his twelve-day-old eyes seemed to query, "Where's my daddy?" I whispered softly, "He's at Garibaldi—probably on the Table. He's thinking of you on the mountain tops." Three years later I added, "Maybe they'll make Waddington". By now the son was articulate and greeted a bewhiskered creature back from five weeks in the mountains with a shy, "Daddy, is part of THAT a mustache?"

After several summers of camping in lower mountain regions the youngster had ideas such as, "I'll stay—you go WITH daddy." This sage suggestion netted me a glorious week in the Tetons. His childish mind must have been thoroughly bewildered by our constant mountain talk—"Craters of the Moon—air-mattresses—bivouac— Tetons—fly camps—Yellowstone—pitons and carabiners," for we heard, "I'd really like to see Yellowstone but I don't care a rap about the Pitons." Somehow on this Teton trip I was drafted to be head cook for the bivouac parties and thus shared the thrills of the

actual climbers. I learned the joy of ministering to others and for this service I was labeled an "angel" by a dozen drowned rats on Mt. Moran and by weary stragglers from the Grand and Middle Tetons.

But it was on our tenth anniversary at Glacier Lake Camp that I really became "the wife he leaves below".

Having climbed from a lean, lank 125 pounds on my honeymoon to a sturdy "near 200" I staunchly started up the steep moraine which leads to the high camp in the meadows below the Lyell peaks. But I puffed and panted and moved so slowly that a rescue party (Brad Gilman) came to meet me and relieved me of my knapsack filled with camp supplies. I decided not to try a Lyell! but instead spent a glorious day in those flowery meadows. And once again I prepared hot soup and tea for the returning climbers!

Although fording the House and Mistaya rivers on horseback was enough of a thrill for one summer I felt a bit let down when I left camp without a single climb. Kindly Edward Feuz felt the same way and suggested Mt. Athabaska, "only four miles from the road." I think it WOULD have been easy had not a young bear claimed his homestead right behind the Icefield Chalet. He insisted that I had usurped his sleeping spot and literally blew me out of my bag and robbed me of even a semblance of sleep the night before the climb. At the first summit I untied myself from the rope saying, "I can't go a step farther". As I sank down among the boulders, voices of those ahead floated over from the main summit, but even these died away as I fell into a profound sleep. A step and a kindly masculine voice roused me, "Lynda, don't miss that beautiful summit—it's only seventeen minutes from here." "Oh, I'm rested now," I replied with enthusiasm. Just twelve minutes later Don and I stood on that snow white eminence. Wild exultation prompted me to give forth a great shout of joy. I hoped the tourists at the Columbia Icefield Chalet heard me for I had pushed and puffed my flabby weight to the top of a most beautiful peak after nine year's of inaction. Undoubtedly, Nature sensed my elation for the next day she sent great avalanches of snow and ice off the side toward Andromeda, as a fanfare to celebrate my tenth anniversary ascent.

But even this was not enough for my enterprising husband. As we headed south on the Pacific Highway near Kelso, Washington, he looked longingly at the snowy dome of Mt. St. Helens. I needed only that summit to complete the Seattle Mountaineers' "major peaks of Washington". If I made it I would realize a cherished dream begun seventeen years before on my first climb of Mt. Rainier. "Let's" said Don. "There are three of us", for we had an ex-Stanford miler along. We made it with flying colors but not without incident. Astride a high icy pinnacle, on which I was doing a tricky & cheval maneuver, a great realization dawned. Completely scared, as I stood erect on the top of this airy sérac, I mustered all my courage to leap across a yawning deep blue icy cavern to the safety of the solid upper lip of the crevasse. As I sank into the friendly snow, I heard the last man comment as he came up, "Wasn't she a scream on that pinnacle? But she finally made it." "She'll be OK as soon as she's had her cry" came from Don. "She's never done difficult ice work before."

I knew that hereafter I would be "the wife he leaves below" for in the ten years I had devoted to the brood my husband had gone miles ahead of me in his ice technique. An ordinary climbing incident to him struck terror to my heart. I realized that I would never overtake him and that I would have to be satisfied with lower elevations and lesser climbs.

War, that destroyer of human hopes, took an entire series of summers and it was not until 1945 that we headed again for Canadian heights. Lake O'Hara, visited sixteen years before, was our goal. This time we brought our thirteen-year old son to share its joys and beauties. Along with camp duties I explored passes and plateaus and welcomed back the climbing parties which were guided by my husband. Here in that compact little mountain paradise which is O'Hara I completed

a threefold cycle of joy. First I had enjoyed the mountains alone, later with my husband, and now we shared these same joys and thrills with our son.

When I hear the word Bugaboos, memory flashes a rough, wet ride and rugged spires. Basking in mountain sunshine in camp I watched my spouse literally spring from alp to alp on the heights above. Two weeks later in the Little Yoho I again stood on a mountain top on a crystal clear day. From the summit of Mt. President I viewed the peaks my husband and the others had scaled.

I gazed upon a marvelous mountain country and let the silent stillnesses of the heights sink once more into my being. Not only the magnificent panorama but an inward exultation made this ascent memorable. I learned that day that a slower pace will get one to the summits without great fatigue in spite of avoirdupois and that, when needed, former technique and assurances come back automatically.

Maybe the reason I am a contented widow is because I go along whenever a mountain camp is located somewhere near the scene of summer operations. That is the most ideal arrangement of all. But back-packing expeditions do not lend themselves to such arrangements. The summer before last I chose to remain in Spokane while the Alexandra Valley was explored. My brother, however, needed a guide on a motor trip to Jasper. As we proceeded north, I said, "Keep a sharp lookout for any knapsackers or parked cars within the next seven miles." "Ho-ho" laughed the others. "Surely you don't expect to find your husband in these wilds ?" Only two miles farther on I spied a blue car off the highway and to my delight and to the utter amazement of the others it proved to be our own. We pounced upon it. We practically embraced it. We autographed its mud-covered sides and left a facetious overtime parking ticket and some blank checks.

The next morning at the Saskatchewan Bungalow Camp I questioned the station attendant. "Any climbing parties around?" "The Alexandra boys have been in and out. Do you know them?" "One of them is my husband." "Which one?" "The one with the red beard." "Oh, they all have red beards." I tried another angle, "The one with the blue Dodge." "Oh, he had lots of car trouble. I sold him a new tire." How glad I was that I had left those blank checks! Two days later the returning climbers came back to the car and with a shout Don announced, "Fellows, my wife's been here! See those initials!" Once more our two spirits had brushed shoulders in the mountains even though miles separated our persons.

There in a rather elongated nutshell you have some of the joys of the "Climbing Widow." Scattered among these pleasures there are often anxious moments, tedious hours, and even endless days of waiting. The anxious moments and tedious hours come when the party is belated. Long after dark, twinkling flashlights on the heights or a lusty shout lower down assures her all is well. The endless days of waiting come when something has gone wrong but she must wait for details until the party returns. This is the hardest of all and fortunately occurs less frequently.

Of necessity, to be the contented variety, the "Climbing Widow" must possess a staunch heart, unflinching courage, an exaggerated disregard for temporary grime and discomfort, a sense of humor, a great love of mountains, and a firm belief in guardian angels. To be sure, calamity may strike, but it can and does strike at lower levels also, and for its disasters, at any elevation, none of us is ever prepared. Suffice to say that many a great alpinist leaves at home or at some lower camp, a "lady in waiting" who anxiously hopes for his safe return. If she also appreciates the magnificence of the summits and understands the lure of the unknown, which makes men endure hardships, privation and physical discomfort in order to see a bit beyond the horizon, she shares in part the greatness of the climber. She exhibits, too, her own strength of character by accepting his goings and comings with dignity, and with an unspoken prayer forever on her lips.

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SELKIRK COLS AND PASSES

BY STERLING HENDRICKS

Moberly pass was in shadow far below, as packs were put down in the heather of a high alp facing northward toward the Goldstream névé. This was the heart of the Selkirks. Few had come this way in the more than seventy-five years since Moberly and his companions crossed the pass in the heavy snows of mid-winter. We had followed the irregular divide of the Columbia for many miles to the south and still had to cross the glaciers and snow cols of the Sir Sandford region to complete the trip. But, for the moment, the toil of the day and the vicarious pleasures of mountaineering yielded to the transcendent beauty of the mountain pass.

In the travels of three summers, we have traversed almost the full length of the Selkirks and have come to appreciate the passes and high cols of the routes as fully as the firm rocks of the peaks. Perfect campsites are to be found in the park lands of the passes below the mountains of the divides. Slender firs and hemlocks frame the glacier-hung peaks across masses of flowers. A pass, whether approached from above or below, is a threshold to a new scene never more fully appreciated than when crossed slowly on foot.

Our approach to the southern marches was by the jeep road up the Spillimacheen to McMurdo Creek. An easy trail leads up the creek, first in deep timber and then in more open meadows, to within two miles and as many thousand feet of Silent Pass. The pass is broad with gentle slopes gradually steepening towards Silent Mountain on the north. The way in the park land leads beside several small lakes that reflect the more alpine reaches of the Spillimacheen group immediately to the south. At the crest one looks across the deep trench of the Duncan River towards the mountains south of the Battle Range at the head of the long valley of Houston Creek. A striking mountain that came to be known as Nemo stands in the angle between Houston Creek and the Duncan, while ranges fade toward the south to the black pyramid of Templeman in the Badshot group. This is an untravelled region. Camp on the commanding western slope was amid a dense carpet of avalanche lilies with patches of anemones in all stages of development. Despite the peace and beauty of such surroundings at camp an inner urge drives one on to the self-appointed task of climbing. Perhaps there is method here, for as camp is approached again in the evening, it is indeed a haven. A new feeling wells up as one sits in the bright moonlight beside the embers of the campfire and gazes at the snows above. The curse is that the day for moving on comes too quickly.

Silent Pass approaches timberline and from it we planned to descend toward the Beaver-Duncan divide which was close by around a shoulder of Silent Mountain. The way led across easy slopes through thin forest along a series of perfectly preserved sharp lateral moraines of a glacier that once filled the 2,500-feet of the valley below. The descent into the divide is squarely across from Mts. Beaver and Duncan which terminate the Beaver escarpment of the Selkirks. From here one could go northward beyond Silent Mountain along continuous alps with the western view filled with the ever sharpening escarpment, finally culminating in the wall of the Illecillewaet névé and the peak of Sir Donald rising 7,000 feet above the Beaver. The view of Sir Donald from this direction would alone be worth the trip to the Dogtooth hills.

The steep descent into the pass cannot be praised, particularly if the packs are heavy and a relay has to be made. All pleasure faded as we sweated downward, saved from headlong plunges only by the toughness of rhododendrons under direct pull. The divide is a swamp land covered by the floodings of streams from the Duncan Glacier. Camp, made in semi-darkness, was in deep

timber beside a clear water stream north of the swamp-bound lake in the pass. It was later moved across the timber belt to the foot of the recent moraines left by the Beaver Glacier. Here a more open view is to be had of the mountains above the glacier tongues. A photograph made 36 years ago by Holway from this site shows nearby ice almost reaching into the forest, but now the ice is an hour's travel away. The forest has advanced less than 100 yards in this time over the hummocky terminal moraine that bears witness to the precipitous retreat of the ice. Beyond the moraine a meadow covered with fireweed, mimulus, and then willow herb borders the start of the Beaver, the cold waters of which must be waded to climb above.

Swampy meadows covered with deep grass lie to the south on the Duncan side of the pass. We crossed these to the valley up which Holway struggled towards the Battle Range, but did not have the heart, or the feet, to repeat the struggle.

The Beaver can be descended for 80 miles to the railroad at Stony Creek, first through easy bush and rhododendron thicket to the eastern edge of the broad valley. A better plan, however, is to cross the Beaver by the suspension car at the Warden's cabin and climb up between the portals leading to Glacier Circle. The lower forest is free of undergrowth and leads out to a shoulder from which the great expanse of the valley can first be seen to full effect. Blueberry bushes cover the shoulder which gives promise of an easy way above. Actually, one is beguiled into a fiendish tangle of slide alder and matted cedar on a steep hillside. Mountaineers can suffer through all adversities of the moment and in this case the reward is an open boulder field leading to the tip of the Deville Glacier, with an easy ascent to the final level of Glacier Circle.

Glacier Circle is fully appreciated by those who have descended into it from the Illecillewaet névé. The ascent from the Beaver gives an even deeper feeling of a fairyland embedded in the mountains. One can lie for hours on the flat rock beside the stream, gazing still upward towards Mts. Fox and Selwyn. He can capture in part the charm of such distant places by wandering through the open upper meadows with their multicolored paintbrush beneath the north vertical wall down which thin waterfalls blow into mist. In the early morning the lake held behind the lateral moraine of the Deville Glacier reflects the many hues of the rising sun.

The winding climb up the eastern bench of the Illecillewaet névé rises bit by bit the view to the south of the smooth snows above the Deville icefall. At first the Deville Glacier tongue is lost in the deep shadows of early morning, but a rest stop high up reveals its lower stretches with the still persistent Forbes bands. On the Illecillewaet névé one is a mile above the now hidden Beaver Valley. The névé stretches away in great warped surfaces that can almost be set to topological equations. Superimposed on the primary surface of hard snow are sub-patterns of ridges, furrows and hollows, sweeping along and downward toward the Geike Glacier. Sir Donald is a beacon leading towards civilization which is first glimpsed as the old railroad grade far below. Glacier and its fading remains of earlier development is still a fit place to end or to start a long trip over the passes to the south and through the bush to the more remote high regions of the Selkirks.

Dense clouds of mosquitoes in the bush, aching backs beneath seventy-pound packs, and the night at the Beaver-Duncan divide when the tent flooded with cold rain after three days of downpour, were soon forgotten. Last summer, however, the rain was the first welcome as we swung off the train at Flat Creek, the next station to the west of Glacier. Some doubts assailed us as the train vanished in the mists and we turned to seek Billy Durand's cabin at the start of the trail to Bostock Summit. The plan was to traverse the wilderness for 75 miles to the north along the divide of the Columbia's waters, and finally to reach the Columbia on the east at the mouth of Swan Creek. What sort of summer would this be?

We had often wondered why the Sir Sandford region had never been approached from the north fork of the Illecillewaet or Tangier Creek, as it is commonly known, in the days when the region was the goal of so many parties and a wagon road extended to the head of the creek. A previous summer's trip up Swan Creek into the Sir Sandford region and view of the back country from Sir Sandford and Citadel gave assurance that such an approach was reasonable even though a trail now covers only about six miles of the distance.

Plans were elaborate and called for operation of two parties, one moving south and the other north. Supply was to be effected by dropping from an airplane, based at Vernon, B.C., to parties at Tangier Pass and on the Gothic névé above Tabernacle Creek. The parties on the ground were to be lightly loaded ones that had pushed ahead, the southern one later to be joined by the plane passengers. In this way a full month could be spent in the country and the entire way traversed with packs of about 50 pounds. These arrangements, the complete absence of mosquitoes, and the great beauty of the country even by the standards of one accustomed to the Selkirks, made for a perfect trip.

Bostock Summit is accessible to all by a short horse trail from the railway. The summit is a triple divide between Bostock, Mountain and Farm creeks, the last of which is a tributary of Tangier. The pass is confusing upon the first visit due to inaccuracies of the Glacier Sheet. It is just above heavy timber and gives open views of neighboring green ridges and the depths of Mountain Creek. The scene gradually shifts as one crosses the convex arc of the summit above Mountain Creek and finally climbs the low crest above Farm Creek. Farm Creek heads in a high cirque south of the pass crest and flows northwestward in a deep canyon towards the Tangier. From the crest the high snowfields sweeping northward from Fang rock across the Tangier first come into view.

We crossed Bostock Summit in intermittent storm, with wrack around the distant snow peaks, and did not tarry long. This is the usual mood of the mountains and is accepted with easy grace. It brings to mind the passionate tempests of great dramas, of Brand, Peer Gynt, or of a Scottish chieftain on the highland moors. Beyond the summit the old trail has been claimed by bush of four decades. Tangier Creek, however, is only a few hours away, and there the old road is of some use, even though the alder grows by preference in the horse paths. Tangier Pass was reached on the second day after wading through valerian and shoulder high hellebore. Slide alder gradually disappears on the final slopes beneath the pass, its place taken by heather and mosses which were to be our footing for the next month.

Tangier pass is a broad glacial U-shaped defile more than a mile in length, with sentinel groves of trees beckoning across the open crest. The old road that was dug deeply into banks is here well preserved with clear cut fossil horseshoe prints. Grubbings along its way made us wonder if the gold then sought is as precious as the country that we found. The road skirts the western side of a shallow lake in the north end of the valley and then approaches a park land of tall firs on the slope breaking over into Sorcerer Creek.

Five caribou curiously watched our approach to the north end of the pass and a two-year-old black bear inspected camp at suppertime. At such times one feels that man is still close to his stone age ancestors who competed without undue advantage over four-legged animals. The circling plane later dropping its bundles brought back the more modern world. Then it was gone and we were alone with the forest and the mountains.

Cliffs of the steep western slope of the pass are broken by tongues of low bushes leading to a bench that affords easy passage to the glaciers and ridges above. From the bench Sorcerer can first be seen in full as a rocky pyramid forming the eastern abutment of the pass. The climb on

Sir Sandford Glacier South Across Moberly Pass.
Photo A. Peterson.

Fairy Meadow, Swan Creek And The Columbia.
Photo A. Peterson.

Mt. Nemo From Silent Pass. *Photo Arnold Wexler.*

Mt. Martha From The Sorcerer. *Photo Arnold Wexler.*

Bachelor Pass. *Photo Arnold Wexler.*

Sorcerer leads upward over the even eastern slopes. We travelled these slopes of the pass under all the changing conditions of the summer, in the twilight of the morning and the early dark of the evening. We rested on them in the full heat of the sun and hurried on in heavy downpours of warm rain. From the heights the camp on the pass could be seen among the open glades.

After two weeks of climbing in the high country with days off for wandering over the pass land, the time came to push on across the unknown divide territory toward the Sir Sandford region. From the top of Sorcerer and of Holway to the west, a way had been picked out that promised to lead along at levels varying from 6,000 to 9,000 feet.

Three green passes, two glacier passes, and several cols had to be crossed before Fairy meadow at the head of Swan Creek could be gained. All equipment and a week's supply of food did not make for heavy going.

We followed the old trail to the mine workings high above Sorcerer Creek and then struck straight up the slope through low bush that included a luxuriant growth of box like pachystima. There was a bit of a struggle at times but soon the level of Bachelor Pass was reached and the route turned northward toward the pass. A high tarn was passed on the way which could easily be identified as the station for the superb photograph of Mt. Holway in Palmer's book. A wapiti was disturbed by its shores and rapidly climbed the slopes about, despite his grotesque antlers and stiff legs.

A final rise up a talus slope brought the open park land of Bachelor Pass into view. This led to the narrow small depression of the pass. Here a stream flowing down the slope from the north gently divided among the flowers at the crest. First lunch for the day was spread on a glacier-smoothed boulder beside the start of Bachelor Creek, which we stepped across recalling the dangerous passage of other parties lower down.

As decision had been made to stay high on the next part of the journey, the heather slopes were climbed around the shoulder below the glaciers north of the pass. A gradual ascent led to a high snow col in the divide, the serrated appearance of which inspired the name of "Sickle-bar Ridge". When a storm broke on the snowfield near the col, we spread out the large plastic tarpaulin that was carried for general shelter and watched the lightning play around Sorcerer. This delay prevented us from reaching Argentine Pass down the northern slopes of the col before nightfall.

Camp was established in the first wind-swept timber high up on a ledge with just enough room for the three tents. As supper cooked, the full moon came from behind Sorcerer and cast long shadows into Bachelor Creek below. If one travels with full equipment, camp can be made as fancy or emergency dictates.

A downhill stroll is always pleasant in the early morning and the short distance to Argentine Pass was soon covered. The pass, which is at timberline, must have been occupied by a glacier, within the last century, that furrowed the quartzite into long swells. Across the pass a broad ridge leads up, perhaps a thousand feet, to an apex on the divide at the head of the Argentine névé. From this point the way northward along the divide toward Moberly Pass could be seen as an undulating gravel roadway. One hesitates to call upon superlative adjectives, but each finds this passageway still distinct in memory. The width was perhaps only twenty feet between the head of the névé on the east and the break of the plunging western slope. One wanders along near the sky, knowing that a day's travel along the stream draining northward from Argentine Pass could not equal a few hours on the crest.

In the late afternoon the gradual descent toward the alps of Moberly Pass started along a northward draining glacier, with incipient nuns of *nieve penitente* throwing ever lengthening

shadows. Again the high camp is not to be forgotten—while the spot will be there for possibly a few others to find, the moment was ours. I can imagine the winter winds that warned Moberly of the avalanches that could fall from these slopes. The full pots were hardly reminders that Moberly's companions were selected as able to travel uncomplainingly with empty stomachs.

The Columbia on the east is only three days' travel from this camp, provided one knows the intricacies of the way. Half of the distance is over glaciers. There is first a steep descent down open slopes into the heavy timber of the pass, then a little bush, and finally a long climb to the place where alps on the east border the Sir Sandford Glacier south, which marks the beginnings of the snow-fields. An afternoon across two easy snow passes is sufficient time to reach a small platform on the slopes of Azimuth Mountain. This tiny spot is almost suspended in the heavens above the tongue of the Silvertip Glacier, a short distance north of an unexpected clear-water stream. Here one commands the full grandeur of Sir Sandford's northern slopes.

Silvertip Pass at the head of the Silvertip Glacier is only a short stroll northward from the Azimuth camp. It is on the divide leading over into Stitt Creek, a tributary of the westward flowing Goldstream that forms the northern boundary of the Sir Sandford region. The upper basin of Stitt Creek consists of alplands surrounded by unnamed mountains with a low pass on the east connecting with Austerity Creek which flows northward into Windy River. The basin must be a summer haven for goats, who leave their tracks across the pass, and they alone know the wild beauty of the Adamant Range as seen above the tumbling séracs of the Austerity Glacier. The monolithic Black-friars are near the pass and a climb of a few hundred feet up a shoulder of Belvedere brings the western end of the Adamant Range into full view across the mile width of the Austerity Glacier. Holdless granite walls of Turret Mountain rise 3,000 feet almost vertically above the ice directly opposite an equally striking slope of the Black-friars. This scene cannot be matched even in a nightmare.

Slopes of Azimuth Mountain are in morning shadow as one breaks camp and turns his back on the broad snow-fields, to labor up the steep heather slopes to the lowest col of the ridge. A short glissade leads to the level surface of Adamant Glacier in the cirque below the granite spires of the Adamant group. Across the glacier another climb of a thousand feet ends in the sharp V of Thor Pass in the ridge south of the Gothics. Here one turns to view the back country for the last time, trying to fix Sir Sandford in the memory, and then walking out on the level Gothic névé, one sees the peaks of the Rockies across the Columbia.

The way still goes northward through a high col and then down a fading glacier to the green slopes above Fairy meadow. Again one is held spellbound both by the meadow and by the great hanging glaciers on the vertical northern granite walls of the Adamant group. Glaciers still sweep to the north over the low passes at the heads of the eastward flowing creeks that are separated by ridges of yellow metamorphic rock.

Fairy meadow is not without defences. At its outlet, Selkirks. A small lake must once have been held here behind the steep moraine of the Granite Glacier. Streams now thread their way across the flat before plunging down over the break towards the Columbia. Fairy meadow as a site for a climbing camp is superior to all others in the Selkirks, even including the Bugaboos.

Fairy meadow is not without defenses. At its outlet, one looks down the green V-trench of Swan Creek toward the yellow ribbon of the Columbia. The highway is just across the river, but between there is Selkirk bush. Our first trip through this bush took eight days, with heavy relays in a continuous rain. Travelling lightly, one can make the climb in two days and the trip down requires only one day, provided the bush is handled with sufficient abandon. The final

hazard is the Columbia, wide and swift, a hazard that has claimed too great a number of the mountaineers that have come this way.

If you should chance to throw away your natural caution and travel these high routes some summer, you too will hesitate where the waters make their choice before plunging downward. You will come to know the beauty of the landscape that we cannot hope to describe. [1]

1 The map facing page 302 in Howard Palmer's *Mountaineering and Exploration in the Selkirks* shows the passes described.

THE LUCKY FOUR RANGE

BY LEONARD H. TAYLOR

On the holiday weekend of July 1 to July 4,1948, eight members of the Vancouver Section of the Club made a trip into the Lucky Four Range. The eight peaks of this range are from east to west: Foley (7,250 feet), Wahleach commonly called Welch (8,100 feet), The Still, General Stewart (7,000 feet), Baby Munday (7,200 feet), Knight Peak[1] (7,200 feet), Lady Peak and Cheam (6,975 feet). These mountains lie in latitude 49° 10' north between longitudes 121° 35' to 121° 40' west to the northwest of Chilliwack Lake and north of the Chilliwack River Valley, and to the south of Wahleach or Jones Lake and the Fraser River. The road to the lake starts from Restmore Annex on the Cariboo Highway.

The range gets its name from the Lucky Four Copper Mine located on the east side of Mt. Foley. About 1915 the miners built a trail up and along a north and south ridge extending past the east side of Wahleach Lake to Mt. Foley. This ridge is called Timberline Ridge since the upper and southern part of it is above timberline. The trail is variously known as the Stewart Mine Trail or the Timberline Ridge Trail. (Stewart was one of the partners of the Lucky Four Mine). The lower part of the trail around Wahleach Lake has been destroyed by the operations of the Jones Lake Logging Company. However, one of their roads comes within 300 yards of the trail at about the center of the lake and 600 feet above it. This route was reconnoitered by Alan Melville and the writer on several previous trips into the area. Climbers will waste considerable time and effort in trying to follow the trail from the lake to this point if they are not acquainted with the logging roads.

The rugged peaks of this imposing range were visited in 1923 by Don and Phyl Munday and H. C. Lewis, a student geologist at that time. The party of three made the first ascent of Mt. General Stewart after climbing the Stewart Glacier with considerable difficulty. During the quarter century since these pioneer alpinists explored this area, the glaciers have receded quite appreciably and are now comparatively easy to climb. The names of the climbers are still visible in the record at the top of Mt. General Stewart though the date is no longer legible.

In the spring of the following year, the Mundays led a party of six up the Lucky Four Glacier on the east side of Mt. Foley to make another first ascent. This trip was made in deep powder snow and under generally poor weather conditions, and therefore no record was left on the summit.

In July of the same year a party consisting of A. J. O. Cooper, F. H. Smith, and F. A. Spouse climbed Mts. General Stewart, Foley, Wahleach, and The Still.

Mt. Baby Munday was first climbed by Bill Henderson and Bill Dobson of the B.C.M.C. in 1933. Since that time quite a few parties have been in to climb Foley and Wahleach, on the eastern end, and a great many parties have climbed Cheam with some continuing to Lady Peak on the western end of the range. However, since the center four peaks are not quite so accessible, they have been climbed far less frequently. During this trip we found records of two parties which were attempting to traverse the range from east to west.

Dr. Neal M. Carter as leader of this trip made arrangements with the Logging Company for transportation to the lake. We were thus saved six and a half miles of packing up the road. Private vehicles are not allowed on this road and transportation is available only through arrangement with the Jones Lake Logging Co. However, it is not a bad walk. Jones Lake is a well known fishing

1 Knight Peak, named for Ebe R. Knight, one of the early climbers in the western part of the range, is commonly known by the misnomer, Mt. William Knight.

resort which the loggers have protected by leaving a belt of trees around its margin. The road that leads to the Timberline Ridge Trail is the first branch to the left off the main road after passing the trail that leads to the lake cabins. We paid the truck driver one dollar each for the round trip and made arrangements for him to meet us at 4:00 p.m. on Sunday. The first section of the party which reached the end of the road on Wednesday night, June 30, consisted of Neal Carter, Len Chatwin, Kay Day, Jack Marshall, and the writer. Herman Genschorek, Ian Kay, and Ed Morrissey came up the following morning.

We spent the night at the end of the road. In the morning we crossed the gully at the end of the road and continued on the line of the road for about 100 yards to the trail. Timberline Ridge Trail has a fairly constant direction and a steady grade. For the most part it is in surprisingly good condition. However, in some places the supporting bridgework around rock buttresses has fallen away and in others the bushes have encroached upon it. After about three hours of leisurely hiking we reached the side of Timberline Ridge Cabin. The cabin had a gaping hole in the roof when Melville and the writer visited it in 1939 but was still standing in 1945 when Neal Carter and other members of the Club were in. When we were in again in 1946 the cabin had completely collapsed. It was the headquarters for climbing trips in the area and its loss will be most acutely felt by those who now have to pack in tents.

We continued past the cabin site along the trail for another 45 minutes to a camping spot which the author has named Mile High Camp, the altitude being 5,250 feet. This camp is a tree-dotted, heather-covered promontory which juts out from the Timberline Ridge into the Lucky Four—Jones Lake Valley. From here a spectacular view of the whole range is obtained and routes can be chosen for crossing the glaciers.

The other three members of the party arrived at Mile High Camp shortly after we did. Day, Genschorek, Marshall and the writer left camp at 3:00 p.m. to climb Wahleach Mtn. We contoured around the base of Mt. Foley and climbed the glacier to the saddle between Foley and Welch. We rappelled down a 50-foot cliff in order to skirt the prominent subsidiary pinnacle to the east of the mountain, scrambled along some goat tracks below the skyline of the ridge joining the pinnacle to the main peak and were soon climbing the eastern arête of the mountain. The peak was reached at 7:00 p.m. without further difficulty. No record of the previous ascents could be found and we left none.

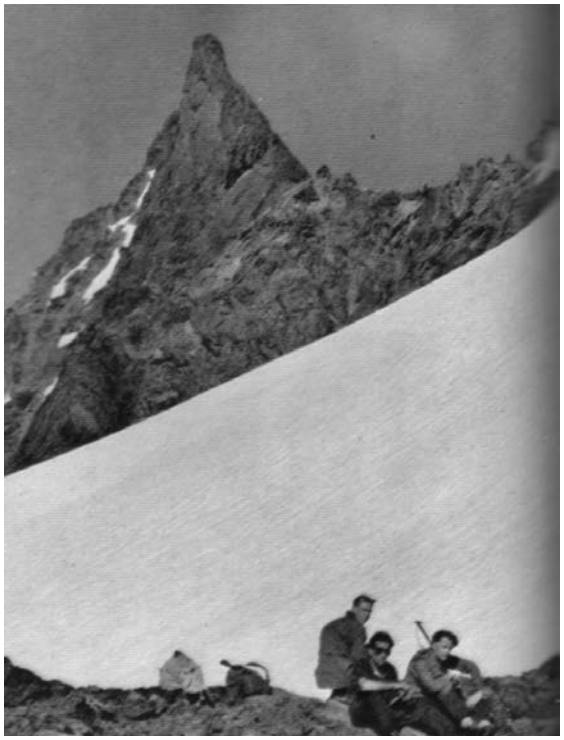
We could see what appeared to be pieces of aluminum glittering about 1,000 feet below on the west side of the peak. Genschorek and the writer climbed down and found the side of the mountain littered with parts of an expired aircraft. Out of sight of the peak we found a large section of fuselage and miscellaneous parts of the Liberator bomber that crashed and burned there in 1945, with the loss of three airmen. Both Carter's 1945 party and our party found a piece of aluminum on the summit, indicating that the plane may have just failed to clear the peak.

We climbed back over the peak to catch up with Marshall and Kay before they got off the main peak. We both had Bramani boots and could travel much more quickly and securely on the rock slabs than the other pair with their edge-nails.

We climbed back up our rope and saw that, had we gone part way up the little pinnacle, we could have reached the peak without the rappel. We had to descend a 200-foot, 45-degree snow slope which was now frozen hard and were, therefore, thankful that we had made good footsteps in it on the way up. We backed down slowly and carefully using a pick belay at every step. We descended the glacier in the fast-waning light and reached Mile High Camp at 11:00 p.m.

On Friday morning, July 2, six of us took a leisurely trip up the Foley Glacier across the Lucky Four Glacier to the southeast arête of Foley. The rock climb was straightforward and we

Mt. Baby Munday From General Stewart.
Photo H. Genschorek.



Mt. Foley From The West.
Photo H. Genschorek.

Mt. Foley, Mt. Wahleach, The Still.
Photo H. Genschorek.

enjoyed an extensive view in all directions from the summit.

We went down via the southeast arête for about 50 yards and then descended southerly down a prominent fault. This fault led through a hole between some large rocks and onto the glacier above the saddle between Foley and Welch. This fault can be used to climb Mt. Foley from the southwest side. Climbers must be very cautious here, however, since the fault acts like a chute for the many loose rocks should they be dislodged. We returned to camp at 5:00 p.m. via the same route used on July 1 to climb Wahleach.

Both these mountains can be climbed in one day in ten to twelve hours from camp either by traversing Foley first, or by climbing both Wahleach and then Foley from the saddle and returning from Foley by either the eastern or western route.

On Saturday morning, July 3, the whole party set off around the Wahleach Glacier at the foot of Wahleach Mountain and The Still. The snow was in good condition for walking and we had little trouble in avoiding the crevasses. We climbed up the Stewart Glacier in between Mt. General Stewart and The Still. The Still is so named by the early miners because the winds continually vaporize as they blow over it. The Stewart Glacier opens out onto a plateau from which General Stewart, Baby Munday, and The Still can be climbed. We stopped for a rest at a high camp made by Bill Henderson and Bill Dobson in 1933.

Half an hour after we left the Camp, all eight of us were on top of General Stewart. While Carter, assisted by Genschorek and the writer, plotted some angles to the surrounding peaks, the other five proceeded up the snow-field to the north of Baby Munday. They went between two of the subsidiary peaks of the mountain and dropped down 100 feet or so to the base of Knight Peak. This mountain is perhaps the most massive of the group, although not difficult to climb. The party visited the wreck of the C.P.A. passenger plane that crashed on the south side of the mountain in 1941.

In the meantime the three map makers had chosen a route up the rugged peak of Baby Munday. We went across the eastern side and up the southern face of the main peak. The rock is none too solid and in one place a few feet below the peak a particularly exposed stretch was encountered. The writer slowly and carefully scaled this obstacle and with the assurance of the rope the peak was soon attained by the other two. This proved to be the third ascent of this pinnacle. On returning to the high camp to meet the others, we surprised a ptarmigan and spent half an hour taking photographs of the bird and the clutch of eggs in her nest.

In spite of the clouds rolling in, Day, Genschorek, and the writer went up The Still while the rest of the party returned to the base camp. We took one hour to ascend via snow slopes from the Stewart-Still col to the western peak of The Still. The top of The Still consists of about four peaks of ragged, loose rock. They are all about the same height in a straight line running east and west. The fog prevented us from seeing which was the higher peak and when we considered the type of rock they were composed of, we didn't care. We hurried back to camp noting that snow blocks falling from Wahleach Mountain had eradicated the tracks of the main party in several places.

Rain set in during the night to cancel the proposed early morning photographic tour up Timberline Ridge. We left Mile High Camp at about noon and in from two to three hours, reached the end of the road, where we dried clothes and ate lunch until it was time to meet our truck. Except for the Sunday's rain, we had enjoyed good weather with enough clouds around to keep down the heat and to provide a background for photographs.

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GLACIER OBSERVATIONS IN THE CANADIAN ROCKIES, 1948

BY W. O. FIELD, JR.

Studies of existing glaciers in the western part of this continent were begun in the 1860's and have been carried on intermittently ever since. Although the behavior of a very small percentage of the glaciers has been actually observed, there is sufficient information about different areas from field measurements, a comparison of photographs, and a study of moraines to determine the general trends during the last half-century and in some cases for several centuries. In recent decades, the prevailing trend has been one of relatively rapid recession which in some instances has been in progress for at least two centuries, in many others only since the 19th century, and in a few exceptional but very significant cases, glaciers have reached a greater length since 1900 than at any time since the Middle Ages. To climax the situation, a very few are still advancing! At first glance, this behavior of different glaciers may seem paradoxical, but from a long-term point of view, some correlation and relationship can be discerned.

Briefly, it appears that we are in the closing stages of a general re-advance of glaciers which has taken place since the Middle Ages and reached its maximum between the early 17th century and the latter part of the 19th century, with a few delayed maxima still occurring— notably in Alaska and perhaps in Patagonia. [1] As Matthes has stated: "Those 300 years therefore comprise really a separate epoch of glacier expansion, a lesser ice age, that was preceded by a warm period of considerable duration." He continues: "That the Cordilleran ranges of North America today bear a far greater load of glacier ice than they bore some 5,000 years ago is no longer open to question. The same is true of Iceland, Scandinavia, and the Alps." "The present recession of the glaciers, which began in the 1850's and which since 1920 has proceeded at an accelerated rate, is merely the latest episode in this 'little ice age'. It may mark the end, or it may not."

These variations in the size of glaciers are primarily the result of climatic changes which cause modifications in the annual rate of snow accumulation in the upper portion of the glaciers, and a change in the annual rate of melting in the areas of dissipation. We do not yet know how to evaluate the factors involved and how to use glacier variation to interpret climatic change except in the most general terms. Matthes has put it this way: ". . . it behooves us to keep a close watch on our glaciers and to measure and photograph them at frequent intervals. They, more vividly than thermometers and snow gauges, tell us what is happening to the climate."[2] "Such measurements, if carried out in concert by many nations in both hemispheres, will in time yield results that, correlated with meteorological records, will throw invaluable light upon the climatic controls under which glaciers grow and again decline . . . This long-time programme clearly will serve not glaciology alone, but all those branches of science that are concerned, directly or indirectly, with the presence and the effects of snow and ice upon the earth to-day and in past times." [3]

Early observers in the Canadian Rockies during the last two decades of the 19th century reported that practically all the glaciers they had seen were receding and it appeared that this had

1 Francois E. Matthes, "Glaciers" in Hydrology, (*Physics of the Earth,* IX), New York and London, 1942, pp. 149-219 and Sigurdur Thorarinsson, "Present Glacier Shrinkage and Eustatic Changes of Sea-Level", *Geografiska Annaler,* XXII, 1940, pp 121-159.

2 Foreword to "Report on the Palisade Glacier Survey", by W. F. Heald, on verso of "Palisade Glacier Map, Sierra Nevada, California", American Alpine Club Research Fund, New York. 1947.

3 *Journal of Glaciology,* I, 2, 1947, p. 44.

been going on despite occasional pauses since the 17th and 18th centuries. Instances of advance, whether temporary or long term were so unusual as to excite special comment. In 1897, Collie and Stutfield reported a glacier in the Sunwapta Valley which was advancing into forest;[4] Wenkchemna Glacier in the Valley of the Ten Peaks was also reported as edging into standing trees in the early years of this century; and a few instances have also been recorded of minor advances which were merely interruptions in the general pattern of retreat.

Almost all the observations which have been made in the Canadian Rockies have been reported in previous issues of this Journal, including an excellent summary in 1931 by one of the most indefatigable observers, Arthur 0. Wheeler, with valuable chapters by J. Monroe Thorington and W. A. D. Munday.[5] In this literature with its impressive amount of information, there exist few references to studies of the terminal moraines marking the maximum extension of the ice during the most recent advances. And yet it would appear that this is of fundamental importance in order to understand the recent behavior of these glaciers, since without it, we do not know when glacier maxima took place in different parts of this area, how many years the present trend of recession has been underway, and how the observed rate of recession in recent years compares with the averages for the period of recession as a whole. Until we know this, we cannot attempt an effective correlation with such meteorological records as exist nor compare the behavior of the glaciers in this area with those in other parts of North America and in other continents.

This line of investigation promised interesting results of value to the long-term programs of The American Geographical Society, the Alpine Club of Canada, the Committee on Glaciers of the Section of Hydrology of the American Geophysical Union, and the Dominion Water and Power Bureau. The 1948 field work was under the sponsorship of the first mentioned and the writer represented the next two organizations as well. Thus every effort was made to achieve maximum co-ordination and co-operation.

From photographs in this Journal and elsewhere, it was obvious that many of the glaciers in the main range of the Rockies are fronted by conspicuous moraines apparently of recent origin, on the outer side of which grow mature trees whose age can probably be measured in hundreds of years. This is very similar to conditions observed lately in Alaska where it has been possible to date recent glacier maxima in different localities. In planning for the initial year of these investigations, the writer was strongly attracted to the Columbia Icefield area for two primary reasons: first, it is the center of the greatest known accumulation of ice in the Rocky Mountain system, and second, it is one of the most accessible icefields on the continent and well suited for the eventual establishment of a research station for detailed studies. From examination of the published records, it appeared that, of its three largest outflowing glaciers, no measurements or precise observations had ever been made of the Columbia Glacier at the head of the Athabaska River; and that in the case of the Athabaska and Saskatchewan Glaciers, although detailed observations had been begun by the Dominion Water and Power Bureau in 1945,[6] the work had been handicapped by the absence of previous surveys and points of reference. The writer, however, had photographed both these glaciers in 1922 and believed that by re-occupying the same positions again in 1948 and comparing other pictures available, a close estimate would be possible as to the net recession since

4 Hugh E. M. Stutfield and J. Norman Collie, *Climbs and Exploration in the Canadian Rockies,* 1903, p. 127 and also *Canadian Alpine Journal,* XI, 1920, p. 131.

5 *Canadian Alpine Journal,* XX, 1931, pp. 120-142. Also see Victor Meek. Glacier Observations in the Canadian Cordillera," *Canadian Geographical Journal,* XXXVII, 5, 1948, pp. 190-209

6 W. T. McFarlane, *Canadian Alpine Journal,* XXIX, 2, 1946, pp. 265-273.

Figure 1

Columbia Glacier From Station 1, July 28, 1948.

Photo W.O. Field

In 1924 the ice reached the recessional moraine in the foreground and nearly up to the trees on the sides of the valley.

Figure 2

Terminus Of The Columbia Glacier From Station 3, July 28, 1948.

Photo W.O. Field

The lateral moraine in the background, marking the recent advance, is over 500 feet above the lake.

Figure 3

Athabaska Glacier From The South Ridge Of Wilcox Mtn., September, 1922.

Figure 4

Lateral Moraine Marking Limit Of Recent Expansion

of Athabaska Glacier, August 8, 1948.

Photos W. O. Field.

Figure 5

Athabaska Glacier From Nearly The Same Position As Top Left Photo, August 6, 1948.

Note the Banff - Jasper highway in the lower part of the picture.

the first decade of this century. It appeared, also, that the date of origin of the terminal moraines could be determined from tree specimens.

The glaciers under discussion were visited on the following dates: Columbia Glacier, July 26 to 28; Saskatchewan Glacier, August 2 to 4; and Athabaska Glacier, August 5 to 7. The outfit for the trip up the Athabaska River to Columbia Glacier was provided by Frank Wells of Jasper, who lives at Athabaska Falls. To him and his assistants, George Wells and Charles" Pearson, we record our sincere appreciation of their untiring efforts and most genial companionship.

THE COLUMBIA ICEFIELD

The Columbia Icefield is not only one of the more interesting in North America, but certainly one of the most accessible. With its outlet glaciers, it covers an area of about 110 square miles, of which fully 50 square miles are above 8,500 feet in the névé or area of accumulation. [7] Its thickness and the character of its floor are as yet unknown; in fact there have been no observations of its structure and motion, nor of the meteorological conditions which prevail on its surface. From the great central ice reservoir lying between Snow Dome, Mt. Castleguard, and Mt. Columbia, three valleys radiate outward through which flow the Columbia Glacier to the northwest, the Athabaska to the northeast, and the Saskatchewan to the east. At other points on the periphery, smaller ice tongues flow into the surrounding valleys and in a number of places ice avalanches over precipices to form regenerated (or reconstructed) glaciers such as Dome Glacier, the glacier at the head of Habel Creek, and the northward flowing glacier between Mts. Columbia and King Edward.

An exact measurement of the present rate of the shrinkage of the icefield would be a very considerable undertaking. However, a clue as to the general trend can be obtained by measuring the changes at the extremities such as the terminal portions of the three main outflowing glaciers where evidence of former expansion and the present rate of ice shrinkage can most easily be studied. If the results are sufficiently significant to arouse the necessary interest, the phase of intensive systematic observations on the icefield can follow. In this report, we are concerned with only the initial phase of the program to determine the general trend of change and to lay the ground work for possible future detailed studies of the actual hydrologic balance or regimen of the Icefield, its thickness and the nature of its rock floor, the external influences above, and in general the physical properties of this tremendous ice mass astride the "Roof of the Rockies". Our first year's efforts were only a beginning, little more than a reconnaissance,—and this report must be viewed in that light. There yet remain great gaps in our information.

COLUMBIA GLACIER

The earliest recorded visit to Columbia Glacier was by Jean Habel in 1901.[8] His photograph,[9] though taken at a distance of several miles, shows the glacier near its maximum position with regard to the terminal moraine and the high ice line in the forest, although the side glacier entering from the basin between Mts. Columbia and King Edward had already shrunk considerably. The next recorded visit was that of Mary T. S. Schaffer in 1907 and her photographs10 show the same general

7 For maps see (a) Interprovincial Boundary Commission: Boundary between Alberta and British Columbia, scale 1:62,500, sheets 21, 22, and 23. Surveyed 191H-1920 ; (b) National Parks of Canada; Jasper Park, Alberta, South Sheet, 1947, and Banff Park, Alberta, 1946 ; scale 1:190,080.

8 *Appalachia,* X, 1, 1902, pp. 28-43.

9 Frontispiece in *Appalachia,* X, 1, 1902.

10 *Old Indian Trails,* New York and London, 1911, p. 83, and *Canadian Alpine Journal,* I, 2, 1908, p. 288.

condition, with the ice not more than a few hundred feet back of its maximum position as indicated by existing terminal moraines. It appears likely that the glacier reached its maximum in the last quarter of the 19th Century; at least we know it had shrunk only a small amount by 1901 and 1907. In 1919, the Interprovincial Boundary Commission mapped this area, and its photographs taken from the vicinity of Warwick Mtn. show the terminus somewhat back of its 1907 position,[11] but the glacier was still full and close to the forest along the margins.

From measurements made in 1948, it is evident that the 1919 terminus was approximately 900 to 1000 feet from the terminal moraine. Howard Palmer visited the glacier with Allen Carpe in 1920[12] and with J. W. A. Hickson in 1924.[13] Some recession, about 250 feet, is evident between 1920 and 1924. In the latter year Palmer took a series of photographs[14] from the same point as that occupied by the writer in 1948 for station 1 (Figure 1). This basis of comparison, due to good fortune rather than good planning on our part, reveals the exact position of the 1924 terminus in relation to the present recessional moraines and the terminus as plotted on our plane table survey. From that we can determine that the 1924 terminus was about 1,300 feet from the outer terminal moraine and 2,700 feet from the 1948 terminus. Palmer's photographs also show that by 1924 the ice had been lowered appreciably since the first decade of the century and the lateral barren zones were beginning to form.

From 1924 to 1948 a number of climbing and skiing parties visited the glacier but no observations or measurements have been recorded. We only know that, while the annual rate of recession from the maximum position (occupied sometime prior to 1900) to 1919 had been less than 50 feet per year, from 1919 to 1948, it was in the order of 100 feet per year.

The terminus is now a narrow tongue of white ice about 400 feet in width, bordered on its west side by the moraine covered portion of the glacier about 1,300 feet wide and apparently semi-stagnant (Figure 2). Between the present terminus and the recessional moraines of the 1919-1924 period is a lake with a maximum length of 3,100 feet and a breadth of 1,700 feet which fills the depression formerly occupied by the ice.

Of even greater significance than the recession of the terminus is the lowering of the ice surface since the period of 'flood' (Figures 1 and 2). At the present terminus in the active ice not covered by moraine, this lowering, measured vertically, has amounted to at least 500 to 600 feet, of which probably fully 400 feet has occurred since 1919. This represents an average of about 14 feet per year. The conspicuous barren zones between the ice and the lateral moraines, formed at the recent maximum expansion, can be traced for fully 2½ miles along the east side of the glacier and somewhat less on the west side under Mt. Columbia. By a rough calculation, it would appear that since the recent maximum, the glacier in its lower 3½ miles has suffered a net loss in the order of 600,000,000 cubic yards of ice. If, as appears likely from the terminal measurements, fully two-thirds of this has occurred since 1919, the glacier has lost in volume the staggering total of some 400,000,000 cubic yards in 29 years, or an average of fully 13,000,000 cubic yards per year. This represents a cube of ice approximately 700 feet on a side, or about 2½ billion gallons of water (sufficient to supply the city of New York for about 2½ average days.) It must be remembered that this is in addition to the normal annual loss by melting which is balanced by the accession of an

11 J. Monroe Thorington, *The Glittering Mountains of Canada,* p. 89 and 98 and *Canadian Alpine Journal,* XIV, 1924, p. 46 and XVI, 1926-1927, p. 36.

12 *Appalachia,* XVI, 3, 1926, P. 262.

13 *Alpine Journal,* XXXVII, 1926, p. 312.

14 American Alpine Club Photographic Collection.

equivalent volume of water deposited in the form of snow in the area of accumulation at the head of the glacier. One might continue indefinitely to speculate on the secondary results of this net loss of ice each year, in terms of the lessened refrigeration of the air above the glacier, the increase in the run-off down the Athabaska River, and the reduction in the reservoir of ice contained in the glacier which provides the principal sources of run-off during the summer months. It would seem unnecessary to point out the need for more intensive and systematic study of this whole problem.

Three photographic and survey stations were established on prominent points of the recessional moraines at Columbia Glacier, each marked with a rock cairn. Station 1 is on the recessional moraine dating from about 1919, near the middle of the valley about 300 feet north of the outlet of the terminal lake and about 40 feet above it (Figure 1). Station 2 is 1,135 feet east northeast of Station 1, near the northeastern end of the same recessional moraine, about 66 feet above the lake. Station 3 is 1,545 feet east of Station 2, directly up the valley and nearly abreast of the 1948 terminus, at an elevation of about 115 feet above the lake (Figure 2).

The side glaciers and former tributaries of the Columbia are also shrinking very noticeably. Comparative data are available for three of these. The glacier which drains the basin between Mts. Columbia and King Edward is formed by avalanching from the edges of the western extension of the Columbia Icefield. It formerly coalesced with the Columbia at the latter's terminus. However, its pattern of recession is different, for in 1907[15] its terminus had already receded some 3,000 feet and since then a further recession of about 1,500 feet accompanied by great vertical shrinking has occurred. The glacier on the south side of the Twins has also shrunk. At about the 9,000-foot level, rock cliffs appearing in Palmer's photograph of 1924[16] have since been extended appreciably. To the east of the main ice fall, cascading from the western base of Snow Dome, is an ice stream which in 1919 contributed a substantial volume of ice to the Columbia at an elevation of 6,500 feet. Now, except for one slender column of ice, it is separated from the Columbia by an exposed rock cliff several hundred feet in height.

ATHABASKA GLACIER

The Athabaska Glacier has been described and photographed many times and in recent years has become extremely easy of access, since the Banff-Jasper Highway passes its terminus.

Detailed measurements were initiated in 1945 by Major W. T. McFarlane of the Dominion Water and Power Bureau,[17] so our main objective in 1948 was simply to locate previous points of reference and to determine the position of the terminal moraine in relation to the present terminus. As at Columbia Glacier, there are well-defined and apparently recently formed terminal and lateral moraines fronted on their outer side by mature trees (Figure 4). These moraines indicate that in the expanded stage Dome and Athabaska glaciers coelesced; Collie's sketch map shows that condition as existing in 1897.[18] The first published photograph of the glacier, so far as we know, is that taken by Mrs. Schaffer in 1908[19] which shows that the Athabaska terminus had receded only about 400 to 500 feet from the terminal moraine. During the next 40 years, recession was to amount to an additional 2,300 to 2,400 feet.

15 Schaffer, *Old Indian Trails,* photo p. 83.

16 *Appalachia,* XVI, 1926-1927, p. 262.

17 McFarlane, ibid, p. 271 and Meek, ibid, p. 209.

18 Collie and Stutfield, ibid, map in back cover.

19 ibid, *Old Indian Trails,* p. 222 and *Canadian Alpine Journal,* I, 2, 1908, p. 290.

In 1919, the Interprovincial Boundary Survey mapped and photographed the glacier [20] and in 1922, the writer took a photograph from the shoulder of Mt. Wilcox (Figure 3). These indicate a recession of perhaps 300 to 400 feet from 1908 to 1919 and 100 to 200 feet from 1919 to 1922. From 1922 to 1948 net recession was approximately 1,750 feet, which in the latter year brought the terminus to a point about 2,700 feet from the recent terminal moraine. The indicated rate of recession previous to 1908 is not known, but it was certainly less than 50 feet per year; from 1908 to 1922 it averaged about 39 feet per year; and from 1922 to 1948 about 67 feet. Data to compute the loss of ice measured vertically is not at hand, but as long as the lateral moraines remain intact, the approximate elevation of the ice surface at the time of maximum expansion can be estimated. Further studies of the trees along the terminal moraine should also reveal the year of the farthest advance.

Dome Glacier, a former tributary, has been separate since before 1919.[21] In that year the terminus was about 1,750 feet from the terminal moraine, and since then recession of a further 850 feet has occurred. The present rate of recession cannot be compared directly with that of Athabaska Glacier because of the moraine cover and other differences in the glacier. However, it seems significant that, as in the case of the former tributary of the Columbia draining from between Mts. Columbia and King Edward, recession prior to 1919 was proportionally far greater than in the case of the trunk glacier. It may well be that these two smaller glaciers reached their maxima earlier and began to recede before the larger glaciers completed their period of advance.

The tributaries of the Athabaska also show great shrinkage in the last few decades. This is conspicuous at elevations between 7,100 and 7,500 feet.

SASKATCHEWAN GLACIER

Saskatchewan Glacier is the only one of these three outflowing ice streams of the Columbia Icefield which does not descend from the névé in an ice fall. The valley glacier portion begins at about the 8,500-foot level on the ice surface and extends about 6 1/4 miles to the terminus at 6,000 feet. Measurements were undertaken by the Dominion Water and Power Bureau in 1945 and 1947,[22] but, as at Athabaska Glacier, no earlier points of reference were available. While no actual measurements ever seem to have been made, the photographic record does reveal the general behavior for at least thirty-six years, and tree specimens obtained by the writer in 1948 extend this back an additional decade.

In 1948, a tree was found along the lateral moraine on the north side of the valley which, though still alive, had been partly pushed over by the ice at the moment of its greatest extension. Sections of this tree were sent to Dr. Donald B. Lawrence of the University of Minnesota who found that "... it was pushed over by ice in 1893 and that the ice must have begun to recede in 1894."[23] A nearby tree was determined to have begun to grow about 1753 indicating that "... the ice had not advanced beyond that position since about 1750."[24] From this, it appears certain that the glacier was more advanced in the early 1890's than for at least a century and a half previously.

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20 Map; ibid, Sheet No. 22 ; Photographs: *Report of the Commission Appointed to Delimit the Boundary between the Provinces of Alberta and British Columbia;* Part II, 1917 to 1921. Office of the Surveyor General, Ottawa, 1924, p. 6 and *Canadian Alpine Journal,* XI, 1920, p. 138.

21 Photo; *Canadian Alpine Journal,* XI, 1920, p. 138.

22 McFarlane. ibid, pp. 271, and Meek, ibid, p. 208.

23 Personal communication dated October 6, 1948.

24 ibid.

The terminal moraine can be dated as about 1893, although the greatest over-all expansion of the whole glacier may have occurred a year or so before or after that. In 1896, W. D. Wilcox saw the glacier from what is now known as Parker Ridge and stated: "The glacier has no terminal moraine, and slopes by a very even grade to a thin knife-like edge, in which it terminates."[25] This suggests a shrinking terminus still in contact with an inconspicuous terminal moraine which does not yet appear as a ridge in front of the ice.

The photographic record available to the writer is a series of views taken from Parker Ridge in 1912 by B. W. Mitchell,[26] in 1919 by A. S. Thomson,[27] in 1922 by the writer (Figure 8),[28] in 1923 by J. M. Thorington,[29] in 1924 by Byron Harmon,[30] and in 1948 by the writer (Figures 7 and 9).

Remnants of the terminal moraine which we may now date as about 1893, could still be seen. Its most advanced position in the valley was approximately 3,575 feet from the 1948 terminus. By comparing the photographs cited above with measurements to certain points of reference, it is possible to estimate the approximate rate of recession. Mitchell's picture in 1912 shows the ice had receded about 400 feet since 1893: From 1912 to 1919, recession amounted to about 400 feet; from 1919 to 1922, 100 to 200 feet. Thereafter there was little net change until 1924. Net recession since 1922 (possibly since 1924) has amounted to about 2,600 feet. The average annual rate of recession since 1893 has been about 65 feet; but during the first 19 years it was around 21 feet, the next ten about 40 feet, and the last 26 about 100 feet. This may still be increasing, for the Dominion Water and Power Bureau measured a recession of 250 feet from 1945 to 1947.[31] Vertical shrinkage, though not yet measured, has been commensurate and can eventually be estimated when the elevation of the lateral moraines above the ice surface and valley floor is computed.

Shrinkage of the glacier in its upper portion is evident from the lateral moraines and the enlargement of the rock cliff on the north side of Mt. Castleguard at an elevation of 8,500 feet. The photographs cited above as taken in 1919, 1922, 1923, and 1924, all show very much the same condition, but since then there has been very extensive emergence of this rock cliff, due primarily to lessened ice flow from the slopes of Mt. Castleguard and also partly perhaps to the lowering of the glacier surface below. A similar change has occurred in all the tributary and small hanging glaciers of this valley, which have all shrunk appreciably in volume. A comparison of the photographs taken from 1919 to 1924 with the 1948 view (Figure 9) will indicate the extent of the change. A comparison of Figures 8 and 9 will also show the reduction in volume during the 1922 to 1948 period of the glacieret, at an elevation of 7,500 to 8,000 feet, on the south side of the valley directly above the present terminus. Despite the fresh snow in the 1922 view, it is obvious that this small, now detached, ice mass has lost about half its volume during that interval.

SUMMARY AND CONCLUSION

There is good evidence to indicate that the Saskatchewan Glacier reached its maximum in 1893 or within a year or two of that date. The other two main outflowing glaciers from the same névé appear to have reached their maxima about the same time, although this must still be confirmed by

25 W. D. Wilcox, The Rockies of Canada, New York and London, 1900, p. 166.
26 American Alpine Club Photographic Collection.
27 Canadian Alpine Journal, XI, 1920, p. 138.
28 Also see Glittering Mountains of Canada, p. 95 and Appalachia, XVI, 2, 1924, p. 149.
29 Glittering Mountains of Canada, p. 99, and Canadian Alpine Journal, XIV, 1924, p. 36.
30 National Geographic Magazine, XLVII, No. 4, 1925, p. 401.
31 Meek, ibid, p. 208.

Figure 6

The Upper Athabaska Valley, July 30, 1948.

Photo W.O. Field.

North and South Twin and the valley of Habel Creek at left; Mt. Columbia at right.

Figure 7

Saskatchewan Glacier From The Survey Station On Parker Ridge.

Photo W.O. Field.

Aug. 4, 1948. Mt. Castleguard at distant right.
(Compare with the illustrations in *C.A.J.,* 1920, Vol. II, P. 138).

Figure 8

Terminus Of Saskatchewan Glacier From Parker Ridge, Sept., 1922.

Photo W.O. Field.

Figure 9

Terminus Of Saskatchewan Glacier, August 4, 1948.

Photo W.O. Field.

Note the same snow patch above the talus slope and the change in the hanging glacier.

further tree counts. The average rate of recession for each glacier has followed a somewhat similar pattern: since 1919, Columbia Glacier has receded an average of about 100 feet a year, and since 1922, the Athabaska and Saskatchewan have receded an average of 67 feet and 100 feet per year, respectively. Previous to this, the rate of observed recession was one-half this rate or less, and if we take 1893 as the year of maximum advance, the averages are 40 feet for Columbia Glacier, 34 feet for the Athabaska, and 33 feet for the Saskatchewan. These are obviously only approximations, but they seem to indicate the general trend of the recession. Obviously more details are needed to relate these maxima to others and to the meteorological record. Studies of the past behavior of these ice masses should be made to determine whether the recent maximum may possibly mark the greatest expansion of the ice in this area since before the "Climatic Optimum", which began about 4000 B.C.[32] We ought to know how the advance of Saskatchewan Glacier in the late 19th century is related to advances of other glaciers in the western mountains which have occurred at an earlier date. For instance how can the behavior of these glaciers be correlated with recent glacier fluctuations in Alaska and northwest Canada? There, some maxima date from the 18th century, while others are late 19th and early 20th, and in a few cases glaciers are still advancing over terrain not covered by ice in at least hundreds of years. One may also ask whether the Columbia Icefield even existed 1000, 3000, or 5000 years ago, and whether it will be there in the year 2000.

As indicated above, the rate of recession since the 1919-1922 period has been extremely rapid and some of the small glaciers are about to disappear entirely, while the larger ones are shrinking to a point where even a change to a more severe climate may not arrest their continued shrinking. If the present rate of annual loss of ice continues for another few decades, the Columbia Icefield may well suffer considerable change and the process of partitioning into separate icefields may set in. New ridges may emerge through the thinning ice cover and the present depressions may deepen and reveal cliffs now covered by ice. If this should occur, the routes from the Saskatchewan and Athabaska Glaciers to Mt. Columbia, the Twins, and Mt. Stutfield may no longer be over continuous snow.

The general recession which has been noted as taking place in the last fifty years suggests that the névé line (also called the firn line or summer snow line on glaciers) has been rising. Since this névé line marks the lower limit of the area of accumulation and the upper limit of the area of ablation, any change in its mean position over a period of years is highly significant and should be the subject of careful investigation. However, there is little comparative data at hand and we can merely record that in early August 1948 the névé line at the head of the Saskatchewan Glacier was north of Mt. Castleguard at an elevation of about 8,300 feet.

While present conditions prevail, it does seem worthwhile to study these phenomena in detail and to initiate a systematic, co-ordinated program of research. It would seem desirable to establish a research station on the edge of the Columbia Icefield at some point such as between Mt. Castleguard and the southern slopes of Snow Dome where at the outset a series of basic observations could be made. We would then begin to find out about the meteorological conditions that prevail, the effects of solar radiation, the annual accumulation of snow, the annual rate of melting, the subsurface characteristics of the icefield, and the rate of flow of at least the surface ice from the center of the névé to the termini of its outflowing glaciers. For such a program, a scientific team could be organized to include a geologist-glaciologist, a geophysicist, a meteorologist, a plant ecologist, and a surveyor. Much of the work could be done in the summer months, from June to September, which

32 E. F. Flint, *Glacial Geology and the Pleistocene Epoch,* New York and London, 1947, p. 487.

coincides with the university vacation period and makes it possible for members of the faculties and student bodies of such institutions to serve in this summer laboratory. Later on a wintering party might be organized. With the highway so near and such excellent bases of operation as the Columbia Icefield Chalet at the foot of the Athabaska and the Saskatchewan Glacier Hut, the area is highly accessible and the problem of supply either by air drop, motor vehicle, sledging, or back-packing is not overwhelming.

Such a program would require specialized techniques which only experienced observers and scientists could undertake. However, there are other ways in which most of us can contribute to this study. First, any dated picture showing a portion of the margin or terminus of a glacier, particularly below the névé line, is of potential interest. Old photographs as well as those taken currently are useful for comparison purposes either with other pictures which exist or with pictures still to be taken. Each picture should be identified as to the features shown, the position from which it was taken, and the exact date to the day and month. Above all, they should be collected in one place and kept for a permanent record. Second, any mountaineer or traveller who goes into areas where glaciers exist can take pictures of them showing the relationship of the ice to the terminal and lateral moraines and nearby vegetation. Such photographs, if taken from the same point as an earlier picture, are of even greater value and permit a very adequate estimate to be made of the change during the interval. The site should be marked by a cairn for identification. Then at any time in future, its exact position can be determined by simple mapping operations and the margins of the ice can be located for different years as shown in the photographs. If, during the last 50 years, one out of every ten mountaineers or other travellers who visited the mountains of Alberta and British Columbia had undertaken such a picture-taking program and made observations of the névé line, the story of glacier variations and the relative behavior of the glaciers in that region would be far better known than is now the case. The piecing together of the evidence from earlier photographs, all taken quite casually, as given in this paper for the Columbia, Athabaska, and Saskatchewan Glaciers, is an example of what can be done with comparatively little effort and no very profound scientific training.

The foregoing report is just a beginning of what we need to know about the behavior of these glaciers. The very detailed and technical studies in the realm of physics, geophysics, hydrology, geomorphology, and micro-climatology require the specialist, but the evidence that intelligent observers with cameras can assemble may go far to provide the broad non-technical information which greatly enhances the significance of the concentrated scientific investigations confined by necessity to limited areas.

In closing, it may be appropriate to remind persons unfamiliar with the science of glaciology that there are many aspects of the subject which are still far from adequately understood, and that those who delve into these matters are the first to admit it. Professor Ahlmann, President of the International Commission on Snow and Ice, who for twenty years has made intensive studies of glaciers in Scandinavia, Iceland, Spitsbergen, and northeast Greenland, and who, more than any man alive can speak with authority on this subject, writes: "As yet we know very little about the meteorological reasons for their ['glaciers] existence and variations in size, about their structure, movement and other features. Before these questions are satisfactorily settled, the glaciers cannot be utilized as the climatographical registrars they really are. The glaciers and their variations in size provide the only, or at least the most reliable, evidence of the history of climate."[33] In a letter

33 *Journal of Glaciology,* I, 1, 1947, p. 8.

to the writer dated July 8, 1947, he added: "I intensively hope that the States, in co-operation with Canada, will realize a programme for systematic glaciological investigations as being one of the most important expedients we have in order to understand the nature of glaciers and the character and causes of the present climatic fluctuations."

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IN MEMORIAM

William John Sykes

1865 - 1948

On October 14,1948, W. J. Sykes, one of the best loved members of the Alpine Club of Canada passed away in Ottawa. Born in Cobourg, Ontario, on October 25,1865, he was within a few days of his 83rd birthday, when death took him very suddenly as he was working in his garden.

After graduating from the University of Toronto in 1891—he was gold medallist in moderns—Mr. Sykes acted as English master at three collegiates: Cobourg, 1891-1892; Hamilton, 1892-1894 and at Ottawa 1894-1912. He then accepted the post of Librarian to Ottawa Public Library, which he held until his retirement in 1936. An English scholar of note, in his capacity as secondary school teacher, and as public librarian, he helped to mould the lives of many well known Ottawa citizens of today, and the influence of his work in the advancement of learning and cultural activities was felt far beyond the Canadian capital, where he made his home for 54 years.

A contributor to the *Dalhousie Review* and *Queen's Quarterly* for many years, Mr. Sykes made a special study of the English diarists from medieval times to the 18th century. In the course of his teaching career, he was an examiner for Civil Service examinations and for University matriculation, on frequent occasions. He compiled and edited several textbooks in English, which were used in high schools in Ontario.

While librarian, he had occasion to visit many of the great libraries of Great Britain, the United States and continental Europe. He held definite ideas as to the character of a Canadian National Library. On his retirement he was accorded the honorary title of Librarian Emeritus of the Public Library. He served as President and in other capacities of numerous library associations and groups in Canada, and was active in giving technical training to those desiring to become librarians.

He was a charter member and a past president of the Ottawa University Club, and an active member of the Canadian Writer's Foundation.

Quite an active sportsman, he had been fond of tennis, canoeing, cycling and, of course, mountaineering. He did not become an active member of the Alpine Club of Canada until quite late in his career; his first camp being in 1926. Next year, in the Yoho, he graduated on Mt. President. To commence one's mountain career at the age of 62 must be something of a record, and in any case is a tribute to Mr. Sykes' courage and physical condition, as well as an inspiration to those of us who are not so young, but still like to attend camp. Altogether, Mr. Sykes attended nine annual camps between 1926 and 1938, and as his climbing record during that time would have been a credit to one 20 years younger, as a matter of interest, it is given here:

1927.....President, Kiwetinok, Isolated Peak.
1928.....Dome, David Thompson.
1929.....Hermit Mountain.
1931.....From Prospectors Valley Camp by Opabin Pass to Lake O'Hara and back.
1932.....The Mitre, Terminal Peak. Over Abbot Pass to Lake O'Hara, Baloo Pass to Nakimu Caves and back to Camp by Cougar Valley.
1935 (age 70).....Wonder Peak, Mt. Collier.

William John Sykes.
Photo John Pours.

He twice held the position of Eastern Vice-President of the Alpine Club of Canada. One remembers his quiet, friendly manner, his thought for his fellow climbers, and his invariable readiness to assist in all camp activities.

Mr. Sykes is survived by his wife, in Ottawa, and two sons, Alfred, of the *Ottawa Journal* editorial staff, and J. Paul, Canadian Government Trade Commissioner, now stationed in Singapore. To them, the Club extends this expression of its deepest sympathy.

—W.T.R.

George Marston Weed

1864 - 1948

George Marston Weed was born in Bangor, Maine, September 14,1864 and died at his home in Concord, Mass., on January 30, 1948. Although he began and ended his life in New England, he had a deep affection for the Canadian Rockies and was one of the first Americans to make important new ascents along the North Saskatchewan.

When he was six his family moved to Newton, Mass., and it was here during years of childhood, that he developed a love for the distant hill, wood and field. He was keenly interested in music, especially in the works of Bach, but in those early days a musical career for boys was frowned upon. In the Newton High School, he prepared for Harvard University from which he graduated in 1886. He obtained his LL.B from Boston University Law School in 1889 and was admitted to the Bar in 1890.

He established a law practice in Boston, and in 1903, married Lilla Barnes Atwater who died at Concord, Mass, in 1918. A resident of Concord from 1908 until his death, he was a Trustee of Town Donations. He was also a Selectman of the Town of Concord and was Chairman of the Selectmen.

His summer home was a charming tract of farm and woodland at Center Sandwich in New Hampshire. Here, he was one of the original Trustees of the Alfred Quimby Fund, the income from which was to be used for the benefit of the Town of Sandwich. Over the years, he enjoyed happy days in this section of the White Mountains. The hospitality of this New Hampshire home, "Weedfield", was shared by a wide circle of his many friends.

He owed a debt of gratitude to Prof. Charles E. Fay, one of the first New Englanders to acclaim the Canadian Rockies as a climbing center for mountaineers. It was through Prof. Fay's influence that he came to know and appreciate the silence and solitude of the everlasting hills.

He joined the Appalachian Mt. Club in 1898, served as vice-president in 1909 and was one of the Trustees of Special Funds from 1913 to 1923. He was also one of the original members of the American Alpine Club.

His first visit to Canada was in 1898 when with a party, he crossed the Pipestone Pass, crossed and named the Dolomite Pass, and made first ascents of Cirque Peak and Mt. Balfour.

Three years later, he was one of a group to make an attempt on Mt. Hungabee from Paradise Valley. The same summer he climbed Mt. Temple and Mt. Stephen, and made first ascents of Eiffel Pk., Peak Three, Peak Four, Mt. Little and Mt. Chancellor.

Camp life in the Rockies had woven its spell and in 1902, he was a member of Dr. J. N. Collie's party to the North Saskatchewan for first ascents of Mt. Murchison, Mt. Freshfield, Mt. Forbes, Howse Peak and later in the season, Mt. Neptuak. Collie and Stutfield have written charmingly of those early days and have paid tribute to the remarkable physical endurance, modesty

George M. Weed

and unselfishness of their trail companion, George Weed. Before an open fire in his Concord home, it was a pleasure to hear him relate the thrilling tales of those early days and it was amazing how clearly these memories stood out against the background of increasing years.

In 1928 he again felt the call of great mountains, rushing rivers and mysterious woods and at the Lake of Hanging Glaciers Camp, he became a member of the Alpine Club of Canada.

The lure of the mountains kept his thoughts turning westward, and the following year he attended the Glacier Camp, for he had an urge to spend a day on Perley Rock where his party had camped many years before. One morning, too late a start was made from camp, and as the hot sun beat down on the Illecillewaet Glacier Trail, he renamed the Perley Rock the "Pearly Gates" and a restful day was spent in the cool shade of the pine trees beside a rushing stream. Later that summer, at Lake Louise, he approached a Swiss guide with the idea of climbing Mt. Victoria. The guide intimated that he had once taken an old man up a mountain and he died up there. When the guide learned the identity of his client, the ascent was gladly made and it proved a pleasant and satisfactory experience.

Mr. Weed had an ambition to enlarge on a passing acquaintance with Mt. Weed and "to stand at the foot, if not at the summit of that peak." In 1930, he organized a party of five for a pack-train trip over the route followed by Collie, Stutfield, Noyes and himself in 1902. Along the trail there was genial talk and graceful jest as he related first hand stories of Collie's expedition. On reaching the Mistaya a guideless attempt was made on the then unclimbed Mt. Weed. When a few hundred feet from the summit, dark clouds rolled up from the valley to the east, thunder crashed down through the couloirs, lightning flashed too close for comfort, and as snowflakes were falling the party reluctantly returned to camp. He took great delight in, "Those rides along the valleys, nights under canvas, the changing views, the snow and even the rain and all that free life away from hotels and the crowd."

"Age has a way of making the open fire and a book very attractive," so his last visit to the Rockies was in 1941.

Above the deeply shadowed valley of the Mistaya, amid the scenes he liked so well, the blue-green waters of Waterfowl Lake mirror the snow-clad crest of the peak which bears his name. It will stand forever as a monument to one who knew our mountains and loved them for the beauty he found in alpland stream and crag. We trust that the "Happy Hunting Ground" may contain all that he loved so well.

—C.R.N.

HERSCHEL CLIFFORD PARKER

1867 - 1944

In 1905[1] a kind fate led me to the smoking room of a westbound Canadian Pacific train. The only occupant was a man whose physical and facial characteristics were so unusual that I was instantly drawn to him.

In the first meeting, which covered an hour of animated talk, I found that my fellow traveller's name was Herschel C. Parker, that he was the head of the Department of Physics at Columbia University and that he possessed a fanatical zeal for difficult mountain ascents.

In subsequent meetings he stated that he was planning an expedition to climb a fabulous

1 Reprinted with the kind permission of the editor, from *The Explorers Journal,* autumn 1946—winter 1947.

Alaskan mountain that had just come into popular ken through an article in the New York Times written by W. A. Dickey, a young Princeton graduate who had seen the great peak from the Susitna Valley and named it Mount McKinley. As I had seen the mountain from the Kenai Range and was familiar with conditions in Alaska, he asked me to join his venture. The chance meeting thus ripened into a friendship that carried us through many strange scenes and adventures and lasted until his death 40 years later.

In attempting to enumerate his fine qualities and to list his achievements,[2] I am forced by lack of space and factual data to confine my remarks in large part to the outdoor side of his life. His scientific achievements were real and important but due to his modesty and my own poor memory for dates and details, I lack the information necessary for listing them correctly. Suffice it is to say that a detailed and authentic list of his varied activities would form a valuable and fascinating biography.

Herschel Parker's love of mountaineering was awakened by early excursions to the White Mountains. He had an intimate knowledge of the range and in his long rambles along its crests and valleys began to exhibit the ability for speed and sustained effort that carried him over the difficult ascents of later years.

While of less than average weight, he combined a physical elasticity with a steadfast courage and a love for remote areas that led him irresistibly to the great mountains of the West. Under the tutelage of two famous Swiss guides, the Kaufman brothers, he began his final training in climbing techniques and made first ascents of such redoubtable peaks as Deltaform, Hungabee and Lefroy in the Canadian Rockies. He was a member of the party on Mount Lefroy when Abbot lost his life.

In the early years little was known about the country surrounding the larger peaks, and most of the pioneering climbs consisted of exploration of high valleys and passes with packhorses or on foot. Following rushing torrents and penetrating canyons or strips of virgin forest brought to him a new and fascinating sensation. Exploration! Achievement based on mountaineering skill and knowledge, but far broader in its scope than the conquest of a single mountain.

The lure of traversing wild unknown areas began to dominate his mind; and Mount McKinley, aloof in its far northern wilderness, became the lodestone that drew him.

His first expedition to Mount McKinley, in 1906, was attempted through the vast stretches of muskeg and forest that lay to the south of the Alaskan Range. While the party reached the southern icefields of the great mountain, the effort had expended too much time; but the difficulties overcome and the experience gained served only to whet his indomitable spirit.

Following his first Alaskan venture came a year of rest. In 1908, in company with the writer, a trip was made into the mountains of the Olympic Peninsula; and a first ascent of the highest peak, Mount Olympus, was successfully accomplished.

The summer of 1909 was spent in prospecting for gold among the fiords and glaciers of the Valdez region. Preparations for a second expedition to climb Mount McKinley were under way, and survival and travel techniques for glacier climbing were tried out and perfected.

The 1910 expedition accomplished several important things, but perhaps the most important to the cause of exploration was the securing of the evidence that ended the polar controversy. The controversy threatened to undermine the public faith which the great explorers had earned down the ages. In this cause Herschel Parker threw himself with the selflessness of a crusader, and the

2 For detailed list see *A.A.J.,* 1946, pp. 109-111.

complete establishment of the Peary Expedition's claim to the sole discovery of the North Pole was due in no small part to his highminded efforts.

The third attempt on Mount McKinley in 1912 was Herschel Parker's last expedition into the Alaskan wilderness. On this climb when only a few minutes' walk from the goal he had given so much to reach, he was robbed of his dream by the elements. Napoleon said that no general was great until he had conducted a successful retreat. In defeat, Herschel Parker's character shone the brightest. He knew that the attempt would be his last; and, as he turned his back on the mountain to begin the long journey to the Yukon, he said, "Perhaps I wanted it too much, but at least I had the privilege of trying."

Despite the hardships he had endured, Alaska was in his blood; and for several years he threw in his lot with the northern prospectors and worked out new discoveries in the Talkeetna region south of Mount McKinley. During his last years he lived in southern California, where he labored on experiments in locating and isolating precious metals.

Herschel Parker was a member of many clubs[3] and societies, but those that he loved best were those where he could meet informal groups of active men such as gather at the Explorers or American Alpine Clubs, or the Salmagundi. He was a devoted and loyal member for many years of The Fresh Air Club, which consisted of a group of men who made weekly walks through the rough hills of New Jersey or clambered among the rocky walls of the Hudson River.

Back of a slightly austere manner lay a great capacity for friendship. His aid to less fortunate friends was constant. Many people will remember him with affection and gratitude.

He was a collector of note and possessed many objects of rarity and beauty. These he donated to museums during his last years. His interest ranged from art and archeology to exploration and scientific research.

The towering snow slope over which men pass to the summit of Mount McKinley bears his name. Few men possess a grander headstone.

He died at Los Angeles, Cal., on March 12, 1944. He was buried in Inglewood Cemetery.

—B.B.

Miss Cora M. Greenway

The death of Miss Cora M. Greenway on October 24, 1948 was a great shock to her many friends.

From childhood she made her home in Manitoba, first at Crystal City, and later in Winnipeg where she was a teacher in the public schools.

Here, first as classroom teacher in the elementary grades, then as instructress in Household Arts in Kelvin High School, she made a valuable contribution to the schools of Winnipeg and to education throughout the province; at the same time winning the esteem and friendship of both students and teachers.

To her work she brought an enthusiastic and intelligent interest in History, Literature, Music, Art, Sports and National and International affairs, together with a genuine love of nature and the great out-of-doors. These interests were expressed in her membership in such organizations as: The Dickens Fellowship, The Poetry Club, The Women's Musical Club, The Women's Canadian

3 His membership in The Alpine Club of Canada dates from 1907.

Club, The Natural History Society and the Alpine Club of Canada.

Miss Greenway was particularly fond of travel, and as a result of her wide field of reading and study, she journeyed to many parts of this continent and of Europe, not as a tourist, but rather as a visitor to old friends.

As a member of the Alpine Club since 1908 she gladly took advantage of the opportunities afforded to become better acquainted with the Canadian Mountains, and would have spent many more holidays in that glorious playground had it been possible.

Those who knew Miss Greenway well found in her a delightful companion and loyal friend.

—M.L.M.

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REVIEWS

Again Switzerland

by Frank S. Smythe; published by Hodder & Stoughton, London; price 20s; Musson Book Co., Toronto; price $5.00; pp. 248, colored frontispiece and 32 other illustrations, and one map.

Mr. Smythe has lost nothing of his facility for writing about mountains m a way which interests a large number of readers who are not mountaineers. *Again Switzerland* is also a book to delight skiers, for it is the story of two months in Switzerland in the winter when skis formed the most practicable and pleasurable method of reaching the mountains.

The author observes, "The fact is that mountaineering and skiing can exist happily apart. They also make an ideal married pair, even though, like any husband and wife, they retain their separate and distinct personalities." There are many alpine climbs where skis would be of little or no use, in summer mountaineering, but the author says where long snow trudges are concerned the magic of skiing has ruined him for foot-slogging over them "To descend a great snow-field on skis is to live more absolutely,' more intensely, than is possible in any sport I know."

Smythe is well known as having been a guideless climber (though he broke the practices once or twice during this holiday), He declares that climbing with hired help lacks some of "the sparkling thrill and later satisfaction that it has when the climber does all the work by himself."

The author insists that "It is only through genuine mountain love that there develops in the mountaineer a sixth sense, a fineness and quickness of perception, a genius for route finding, an instinct for weather change, an animal anticipation, even premonition, of danger."

There is encouragement for those who would like to go to the mountains but wrongly imagine they need be highly athletic. Advice too that many experienced mountain-goers have not extracted from their experience, the folly of not saving travelling on nerve for emergencies only.

Mr. Smythe is of course the foremost mountaineering writer of today, so that those at all familiar with his books know a new one will not disappoint them. The illustrations in this one also have all the high photographic quality for which he is famous.

—W.A.D.M.

Mount Everest 1938

by H. W. Tilman; published by Cambridge University Press, 1948; pp. 159 with 49 photographs, two maps and two diagrams. Price 15s.

There have been seven expeditions to Everest, five of which attempted to reach the summit. This book delayed by the intervention of the war, gives an account of the last of these attempts and is the sixth official publication on these expeditions. The author considers rightly that it is justified by changes in the organization and management of the expedition compared with previous ones.

In their attack on the mountain the party followed previous routes, but made a contribution, although a negative one, regarding other possible routes, by testing the western approach to the North Col. They found that it would be a waste of time and energy to try this route in preference to the eastern approach, and this in a year when the northwest wind was less violent than usual. The party of 1936 did not get beyond the North Col. In 1938 camps were established at 25,500 feet and 27,000 feet, and two parties advanced several hundred feet further. The weather conditions involving unusually low temperatures were very severe. After six days of devastating cold and

wind, snow began to fall heavily on May 5, and continued for a week. "After this the mountain was never in climbable condition;" (pp. 56 and 66,) even for the strong and experienced climbers of this expedition. A picture on p. 133 shows Mr. F. S. Smythe snowbound at the highest point reached by the party. The weather and the condition of the mountain near the summit are the most important factors in climbing Everest.

To the reviewer the most interesting portion of this well-written book, sprinkled with dry and cynical humour, are the introductory and final chapters and the discussion in Appendix A. These deal with highly controversial points in regard to the desirable size and constitution of an expedition, its rationing and the use of oxygen.

Mr. Tilman, who has long been an advocate for small and less expensive expeditions without elaborate equipment, such as, wireless installations, etc., holds, that the 1938 expedition, which cost less than £2500, had just as good a chance of success as the huge earlier ones which cost four times as much. But the earlier ones were all very small. Smaller expeditions do not involve the publicity which big ones require in order to pay some of the expenses. It is now doubtful that the necessary funds will hereafter be forthcoming for an expedition on the previous grand scale.

On the question of food, the author evidently had not the support of all his companions, some of whom found the fare too austere. This comes out in the discussion in Appendix A. He was, and is still inclined to react very strongly, perhaps too strongly against a former luxurious scale of rationing. The case for smaller and less expensive organizations is summed up in the sentence: "Anything beyond what is needed for efficiency and safety is worse than useless." This should surely not exclude a physician in the party; different expeditions to the Himalayas have proved how desirable it is to have expert medical advice, and a physician may also be a good climber. As to the inclusion of scientists as such, the author takes the stand that science is not the major object on a mountaineering adventure like Everest, and that lower peaks can provide equally interesting scientific material.

On the controversial subject of oxygen the author is against its use. Two kinds of apparatus were tried on this expedition, and the evidence regarding their relative merits is conflicting. He puts forward a psychological consideration namely, that even were the mountain climbed with its use, this would not be final; for an attempt would certainly be made to climb it without. This sounds somewhat sentimental when one considers the use made of extraneous aids on other mountains lower and less difficult than Everest. A realistic factor against its employment at present is the still weighty nature of the apparatus. Mr. Tilman holds that a climbing party of two on the final stretches is the desirable number for Everest, in which view he has the support of some other experienced Himalayan adventurers. Better time can of course be made than with three climbers; but what if one of a party of two is hurt or collapses?

The Appendices are interesting and with one exception valuable. The exception consists of ten pages of argument by the author for the existence of the "Abominable Snowman," whose activities in the rarified air and with no discoverable means of nourishment would be nothing short of miraculous. In the judgment of several distinguished Himalayan explorers Mr. Tilman has here made a contribution to the legendary lore of these mountains.

The photographs many of which are Mr. F. S. Smythe's are excellent, and one of them shows in an impressive way the steepness of the north face between Camp 6 and the great couloir. The powdery character of the fresh snow which does not consolidate and, which made an ascent impossible in 1938, is also suggested. There is a good index.

—J.W.A.H.

Rocky Mountains

by Frank S. Smythe; published by Macmillan Company of Canada, Toronto; pp. 149; 48 monochrome illustrations and 18 in color; one map. Price $9.00.

Like several other octavo size books by the same author, this consists mainly of illustrations, each facing a page with descriptive text. Apparently the intention of the book is to give one unfamiliar with the Canadian Rockies a general idea of their attractions from valley level to the mountain summits. It succeeds admirably in this.

Unfortunately a number of errors are obvious to specialists in several fields of knowledge. A view of Peyto Lake is called Mistaya Lake. The Hoary Marmot (Whistler) is termed a "mountain mouse." Geologists will object to a statement about the presence of intrusive rocks, as well as use of "schistose" as a noun instead of an adjective. References to fur trade days show incomplete understanding of geographic problems. Meteorologists will object to the opening paragraph which declares the Rockies form "a dividing line between climates," a statement based on the unacceptable and out-dated use of "Rockies" to take in all the western ranges.

Mr. Smythe, as in other books like this, sets himself up as an instructor on exposures and other photographic matters. He is less reliable when he plunges into the artistic use of colour film. He fails to realize how compositionally bad it is to let a large red-clad figure in the foreground compete successfully for attention with the real subject in the distance.

One would have liked to have seen the Alpine Club of Canada designated by its proper name throughout the book.

The book begins with 22 pages of text devoted to a general description of the Canadian Rockies. Mr. Smythe declares that the Rockies "possess the unenviable distinction of the ugliest and most haphazard nomenclature of any range in the world." He overlooks one aspect of the subject—to one who knows and appreciates mountains the actual name becomes of slight significance for itself; it becomes a symbol conjuring up the "personality" of the mountain. Take the name "Rocky Mountains." It is bald and banal and unimaginative, but now can suggest all the glory of the range. Doubtless more use might have been made of Indian words, but Indians did not have an extensive vocabulary, and advocates of the use of Indian words commonly are unaware of how clumsy and difficult they often are to the white man's tongue.

Mountaineers will enjoy this book. Pictures of peaks predominate, and the author's comments always have a mountaineering flavor.

—W.A.D.M.

Mountains and Men

by Wilfred Noyce; Geoffray Bles, London, 1947; pp. 160 with 17 illustrations and 4 sketch maps. Price 18s net.

This, one of the post-war output of British mountaineering autobiographies, is an unusual book both as regards its treatment of the subject matter and its style. Some of the chapters are difficult to follow owing to their abbreviated diary-like form, while others in which the lapidary style is abandoned afford more interesting reading. It is essentially a book for mountaineers; it is not likely to appeal to non-climbers.

Mr. Noyce, who at the age of eight, made an ascent of 2,000 feet in Wales has a very remarkable climbing record for one who is comparatively young. He has been four times in the Himalayas after having accomplished outstanding climbs in Great Britain and Switzerland. These he passes over for the most part quite lightly, referring to them in the briefest possible manner. The rapid time made on several great Swiss climbs, e.g. the ascent of the Aiguille Verte over the Aiguille Sans Nom from the Charpoua Glacier required both great skill and endurance on the part of the amateur as well as the Swiss celebrated guide. Other long and difficult climbs are referred to in an almost casual way.

Mr. Noyce's entry into the army led him to India and a large part of the book covers his mountaineering achievements and his experiences in the Himalayas. In Chapter XI, entitled "Sikkim Diary", there is a simple record of his biggest climb Pauhunri 23,385 feet, which he had the "luck" to make "just over a fortnight after leaving Delhi;" not difficult according to the author, though his highly prized Sherpa Angtharkay thought on the way up it might be impossible, showing perhaps in this respect less judgment than a good Swiss guide. Afterwards Mr. Noyce learnt that a festering arm might have been the cause of his doubtfulness about reaching the top. For "he is a leader having that priceless gift of always being able to do more than his followers." p. 144.

The title of the book suggests what the author regards as the greatest things in mountaineering, the beauty of the mountains in themselves for which he shows a fine appreciation, the personalities of the climbers and their relationship to the mountain, a relationship which changes as the climber himself undergoes a change. Emphasis is laid on climbing friendships as one of the deeper pleasures of the sport. His remarks on his guides, Hans Brantschen and Armand Charlet, reflect a fine understanding of these men. The narrative which is somewhat loosely composed is sometimes vividly personal, as when the attraction felt for the one-eyed Dhotiyal Gurntheria is described, p. 99. A variety of subjects is touched upon without continuity, in regard to several of which it may be difficult to give final answers although no thoughtful alpinist can escape from struggling with them, e.g. why high places which are so difficult to reach and involve hardship and strain are so attractive? This is an old question dealt with in the chapter "The Anatomy of Pleasure."

Regarding the practice of solitary climbing, which needs defence, the author writes: "I have found, as have many others, that there is a quality of enjoyment in solitary climbing quite different from that of climbing in company. The senses of beauty and danger are sharpened with the presence of loneliness. The spirit is freer to wander, and if it be rock climbing of a safe type the continuous rhythm of movement gives a sensation of becoming one with the mountains up which you are moving." "The intimacy is heightened, sensation more vivid, but so also are the feelings of solitude and strain." pp. 66, 67.

A chapter on the wartime experiment of an Aircrew Mountain Centre is suggestive regarding the effect of mountains on men, who without any experience or choice, are confronted with them. Two short chapters are in dialogue form, one of them being the epilogue, which is subtle.

The illustrations based on good pictures, poorly reproduced, are in the center of the book, and might have been more conveniently placed at the end of the text. An index is lacking. There are some misspellings of Swiss names, which presumably indicate carelessness. This is a book of which it might be said that it would have been improved if parts of it had been expanded.

—J.W.A.H.

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The Unknown Mountain

by Don Munday; published by Hodder and Stoughton, London, 1948; pp. XX and 263; 37 illustrations, 2 maps and index. Price 21 shillings; $5.00 in Canada, Musson Book Co., Toronto.

The name of Mt. Waddington will ever be linked with those of two distinguished members of the Alpine Club of Canada: Don and Phyllis Munday. Whatever other associations may be called to mind by this sovereign of the Coast Range, the Mundays' record of exploration stands unchallenged. It is fitting that Don Munday should write the first mountaineering book on this area.

Members of the Alpine Club of Canada will take pride in the fact that this volume is by their Western Vice-President. Much of the story will already be familiar to readers of the Canadian Alpine Journal, to which the Mundays have been regular contributors since 1922. However, for the first time, the Waddington saga is made into a complete entity. Most important of all, it is a stirring chronicle of accomplishment by Canadians among Canadian mountains.

The book contains some of the powerful elements of classic Greek tragedy: the prologue to attain sight of the goal, the chorus proclaiming the impossibility of the mountain, demon grizzlies, a hero and a heroine and triumph in defeat.

From that day in 1925 when the Mundays first saw "the far-off finger of destiny beckoning," "Mystery Mountain" dominated their lives. Before they could attack, they first had to plot the intervening peaks and glaciers. At once they encountered the peculiar problems of the Coast Range.

To first penetrate this range, the successful mountaineer must combine the trades of horse wrangler, trapper, logger, fisherman and coastwise navigator. There are few seafarers, let alone mountaineers, who would care to force a 15-foot boat and cantankerous outboard motor up 275 miles of the tide-ripped coast line. Until the advent of supply-dropping and glacier-hopping helicopters, these voyages were succeeded by struggles through devil's club, slide alder and fallen timber. The Mundays' back-packing has become legendary. Mrs. Munday cheerfully and frequently carried a 70-pound pack. This, along with raging rivers and malicious weather, would tarnish the prospect for most. Still, the unknown mountain held a moth-and-candle fascination for the Mundays.

This fascination was increased by Don Munday's interest in glaciers. His research added much to the Club's records of glaciers in Canada. Indeed, from 1887 until 1945 the Dominion had no other glacier studies than those made by the founders and members of the Club.

Part of the problem around "Mystery Mountain" was the tremendous amount of glacial change. Some comparison can be gained from the fact that in the Rockies, Victoria Glacier has retreated only 1,000 feet since 1885, while from 1927 to 1945 the Franklin Glacier receded 4,500 feet.

It is this glacier study which gives us a glimpse of Don Munday's mountain creed. He believes that high passes and intricate glacier systems should not be disregarded by summit-seeking mountaineers. He claims that reaching the top of a mountain is not the only joy in mountaineering.

There is no outright mountain philosophy in the book. The physical conflict between man and mountain is all that is given. Underneath is the essential conflict of emotion, but this we must discover for ourselves. The book, therefore, pays rich dividends on second reading. We realize that strength of character lies in supreme effort, made not once but repeatedly; we realize that happiness lies in fulfillment of the spirit through the efforts of the body. The result is communion with the mountains.

Similarly, there is no discord in the fine illustrations which are free from distortion or false effect. Club members are accustomed to a high standard from their camera artists; the photographs in *The Unknown Mountain* will not disappoint them.

The photographs confirm the difficulty of the terrain. The account of the fight to follow up the Homathko River reads as if from the journals of David Thompson or Alexander Mackenzie. Some may claim that the economy of style is too much in the explorer tradition. This may be, but it is a welcome change from fertile but faded word wasters. Those who like a sweet, mountain idyll may not enjoy the whimsical humour or follow the suddenly injected anecdotes.

Occasionally Mr. Munday bluntly reveals his almost infallible judgment. This is likely done unconsciously, because Don Munday has a habit of being right. However, when heroes leave their own firm pedestals to notice the clay of others, it is a little disquieting to their admirers.

These admirers will hope that Mr. Munday's narrative which stops in 1936, will be continued in another volume. Certainly the Munday's exploits in the Coast Range did not end in 1936. In the meantime, Mr. Munday's volume on mountain flowers is in the hands of a publisher. There was an interval of twenty-five years between Don Munday's first mountain monograph and this, his first book. It is to be hoped that our other photographers and writers will not wait so long. They possess a heritage which should be passed on to all Canadians.

The Mundays have led the way in the Coast Range. This splendid husband-and-wife unit must indeed have precious memories; they have now shared these memories with all of us. They have set an example of dogged persistence and a record of achievement. *The Unknown Mountain* is therefore a challenging guide to the future.

—W.B.G.

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ALPINE NOTES

Storm On Northwest Tower Of Lowell

In early July, 1948, Ruth and I visited Fryatt Canyon, backpacking in intermittent showers. After inspecting the extensive remains of the 1936 camp of the Alpine Club of Canada, we pushed up steep, forested slopes to the base of virgin, oft-attempted Brussels Peak. The way was fairly well marked, for two strong parties had visited the mountain the preceding week.

The next day we attacked the north buttress—and received quite a surprise. Scanty information had indicated that all of the rock was very loose, with pitons affording little protection. Shattered indeed was the piton-garnished ridge, but it ended against a soaring, firm rib almost devoid of cracks. This was ascended for a short distance, but I was unwilling to proceed upon a long, steep lead without bolts for protection. Leaving the nose for braver and better-equipped men, we traversed to the right upon unsound rock. Balked by bulges above, we descended and attempted a long, wet, rotten chimney to the left of the nose. Some distance above the lonely piton of some predecessor, my efforts merely split the soft rock. As a last resort, the steep couloir far to the left was studied; discouraged by the intermittent cascades of snow and rocks, we rappelled down.

Two days later, the south face of the peak was inspected from the Brussels-Lowell Col. Since this aspect of the mountain was even worse than the north side, we decided in favor of the latter. With the day still young, our attention was directed toward our other target—the unclimbed northwest ridge of the northwest tower of Lowell. After cutting steps for some distance we reached shattered, fairly steep rocks. The ascent was uneventful as we wound around gendarmes and ascended easy cliffs, but unceasing caution was required by the unstable holds. Leads were alternated up the final buttress, and Ruth stepped upon the summit first. A delightful hour was spent upon the pinnacle, but dark clouds marched steadily from Blackfriars and Chisel.

The descent proved to be hazardous. Despite great care, I dislodged a large rock that narrowly missed my belayer in descending an almost vertical, debris-choked chimney. Abandoning this route and climbing down a vertical but relatively sound face I soon reached her, feeling that the worst was past. However, a storm had been crouching south of the mountain, and pounced over the crags. Lightning, a gale, and hail impeded our progress. After traversing a steep snowbank that required handholds, we entered a drafty cave to wait out the worst of the storm. After a deafening report Ruth calmly remarked, “I felt quite a shock! Wouldn’t someone be startled if, years later, he chanced to peer in and saw us?” Little did we know that, a few days later, Death would similarly stalk, then strike a party of friends, fellow Sierrans, on Bugaboo Spire.

Eventually the storm thinned sufficiently for us to continue the descent, and we reached camp somewhat battered. That night the mountains added insult to injury, for a tiny, nearby tarn suddenly arose in wrath and forced us to flee to higher ground. The two bedraggled individuals hopping around salvaging equipment must have been the most comical sight ever seen in the canyon! I finished the night looped over bushes like a boa-constrictor, while Ruth settled for a 30-degree slope.

The next day Mr. and Mrs. Ray Garner, with “Jiggs” Lewis and Ed George, passed en route to Brussels. Giving them information and best wishes, we regretfully headed outward from the impressive group of summits that ring the canyon. A few days later the party reached the summit of Brussels, conquering the north rib that had halted so many by means of a praiseworthy 130-foot section of high-angle rockwork.

—J. D. Mendenhall.

North Of Mt. Alberta

Our 1948 party consisted of four members, George Harr, Ray van Aken, Charles and Ellen Wilts. The area we entered lies between the Sunwapta and Athabaska rivers just north of Alberta and Diadem peaks. The usual approach to the adjacent area to the north (Gong Lake area) has been via the Athabaska River and the creek draining Gong Lake. It had been suggested that this other area might likewise be approached via the Athabaska River and thence up Lynx Creek. On examining the topographic maps of the region, we concluded that a direct approach from the Sunwapta River would effect a considerable (Saving in distance and perhaps in time. When inspecting from the road the two canyons giving approaches from this direction, we noted rather formidable rock and ice cliffs at the head of each canyon but decided that the southernmost one heading toward Diadem Peak appeared the more feasible. According to the map, the hanging icefield at the heads of these canyons was contiguous to the Gong Lake glacier and was bordered by three of the five unclimbed peaks in this area.

The Sunwapta River was forded just above Mile 53 without great difficulty. The trip up the canyon was without incident although the usual difficulties of back-packing in trailless country were encountered. The cliffs at the head of the canyon appeared more formidable as we approached, and it was not until the end of the first day that it was known that a practicable route existed onto the icefield. Owing to the illness of one member of the party (van Aken), we were forced to camp at the base of the cliffs rather than up on the glacier above (which had originally been our objective). The remaining three left from this camp to reconnoiter the area on the following day.

To reach the icefield we climbed out of the canyon to the north and ascended the cliffs. We crossed the icefield and ascended the snow col between Diadem and the unclimbed peak to the north, thence followed the south ridge and west face to reach the summit of the peak at 4:00 p.m. It is believed that this route of ascent is not only the most direct, but also the easiest route on the mountain. The last hundred feet to the summit were easy fourth class and the ascent of the col required the use of a rope, particularly to overcome the cornice. Aside from this all climbing was very easy. From the vantage point of the summit, we had a superb view of the mountains from Mt. Columbia to the south to Confederation to the north. Of the other unclimbed peaks in this area, only the two described in Thorington's guide as Peak 10,500 and the Great Rock Tower appeared to offer interesting climbing problems. As these were too far north to attack from our lower base camp, and as the condition of the fourth member of our party precluded moving the base camp up on the glacier, we left the area without attempting further ascents.

By triangulation (using a Brunton pocket transit) on Diadem Pk. and Mt. Alberta, we found that the altitude of the peak climbed was 10,500 feet. Extending the triangulation to the peaks to the north, we found that the Great Rock Tower was 10,400 feet in altitude, and the so-called Peak 10,500 was in reality 10,700 feet high. These altitudes are consistent with the topographic maps although disagreeing with Thorington's approximate altitudes.

The col by which we mounted the main ridge was steep and corniced and would offer a serious problem if packs were to be carried over it for a descent into the Lynx Creek area. However, it was apparent from the top of the peak that the next pass to the north would provide as easier route, thus offering a practicable way between the Athabaska and Sunwapta rivers. The date of ascent of the peak was July 31, 1948.

—C. Wilts.

Lightning In The Bugaboos

From our perch above the Weissner overhang we could see the storm mass hanging to the west. It was a solid wall of black with a few scattered flashes of lightning far to the south. It was apparent that we were not going to be able to make the summit that day so we turned back. Before we were able to rig the first rappel, the full fury of the storm was upon us. Rain, hail, and snow descended in cycles punctuated by frequent thunder and lightning.

What had taken Oscar Cook, Bill Long, John Thune and I five hours to climb from base camp, took nine hours in return. When we reached our boots and ice-axes, we could see down upon the tiny icefield at the east base of Snowpatch. The first warning that an accident had occurred on Bugaboo Spire was given when we saw two people walking toward camp and leaning on each other for support. We yodeled at them but received no recognition other than a slight pause in their walking. We hurried down to camp,[1] and were met with the news that the party on Bugaboo Spire had been struck by lightning. Rolf Pundt was dead, Robert Becker was still alive but unconscious on the mountain, and Cricket Strong and Ian Mackinlay were badly burned.

John Thune immediately got the first aid kit out and started to treat their burns. The sulfa and penicillin were about to pay off in keeping infection away. The burns were deep and ranged from first to third degree. While he was treating the burns Ian related the following story in an account reconstructed here:

"It was noon and we were on the summit. To the west we could see a black wall of clouds. Bob was all for going on to the further summit, but by the time we got started the static charge had built up to such a degree that all the points in the vicinity were emitting sparks and the air was filled with a violent hissing. We rigged the rappel and were just above the gendarme when the storm broke. We knew that being on a ridge was not the best place under such circumstances, but at this point there was no alternative. We spotted an open cave and decided to take shelter.

"The cave had been formed by a large block of granite which had become the roof of a short open chimney. It was some hundred feet below the summit. We had the rucksacks open and were about to have lunch when the next thing that I recall was that I was flat on my back, paralyzed from the neck down. I could see Rolf staggering outside the cave and I yelled to him to stop. He gave one great lurch and went over the side. By this time Bob came to. He didn't seem to know where he was and shortly lapsed into unconsciousness again. Cricket was now conscious, and was suffering from little but shock. My paralysis was leaving me little by little and I could move everything but one arm. By this time it seemed as though the storm had cleared, but a second glance showed another wave about to move in from the west. Bob could not be awakened, and I decided that I had better take Cricket and get help. We tied Bob to the rock in case he should come to while we were gone.

"We rappelled over the gendarme and down the two pitches below. From here we made our way back to the head of the Bugaboo-Snowpatch Col where our crampons and ice-axes were cached. As we started down the col, Cricket caught a crampon and fell some two hundred feet down the gully, to be stopped in a pile of avalanche debris. Her ice-axe and glove had been torn from her hand. I got to her, gave her my ice-axe, and together we made our way to camp."

Ian does not tell of the heroics of the trip down and surely they must be there, for rappelling over deep burns is no easy matter. Their courage and clear thinking brought them through.

1 Eighteen Sierra Club members were camping in the Purcells for two weeks during the summer of 1948.

Phil Bettler and Paul Estes volunteered to go up that night and see if they could get to Bob. It was imperative that a sleeping-bag, warm clothing, and food be gotten to him without delay. It was still raining and snowing intermittently, and their chances of getting across the gendarmes were small. Four more of us were scheduled to join them in the morning.

There was no change in the weather by morning, and while we were in the process of getting ready to go, Phil and Paul came into camp. They had been able to get no further than the foot of the col and here they spent the night, huddled under a tarpaulin. They reported six inches of new snow, with the possibility of more higher up the col.

The weather was still bad the next day, but we were able to get to the top of the col and search the Warren Glacier side of Bugaboo for Rolf's body. We could find nothing but during occasional liftings of the low clouds we caught glimpses of a large ledge some five hundred feet above the base that would seem to catch anything falling from the vicinity of the gendarme.

The snow stopped on the third day and Paul Estes, Bill Long, Jim Wilson and I started out to get Becker. The easy talus stroll up the lower slopes was made much more difficult by the new snow and bitter wind. Bill made a splendid lead across the gendarme, which was wet but free of snow and ice. The warmth of the sun through the thin cloud layer had been enough to thaw it out.

When we reached Bob, we found him in the position in which Ian had described they left him. Nothing had been touched, and we were of the opinion that he had never regained consciousness. There was evidently more tension on the sling than we thought, for when we cut him loose he started sliding and went over the edge. We held a short service for Bob and Rolf and then returned to camp.

We broke camp the next morning, joined the injured at the end of the road and awaited the truck to Spillimacheen.[2]

—Robin Hansen.

A Lost Ice-Axe Records Motion Of Freshfield Glacier

On July 25, 1926, Dr. Strumia, while returning from the first ascent of Mt. Solitaire in the Freshfield group, dropped his ice-axe in a narrow crevasse on the open glacier close to the 7,850 contour. It descended through a small ice-fall and reappeared on the ice surface in 1947, being picked up there on July 3 by Fred Ayre's party. The axe was found at 6,900 feet and is now in the Club House at Banff.

In this time it had advanced just 2.5 miles, which figures out roughly 1.7 feet per day. This is admittedly a measurement with a large margin of error, but it is the first one I know of made at such a high level. The glacier is fairly flat there and is making a turn, so the motion may be slower than further down where additional forces are operative.

—J.M.T.

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2 For an analysis on lightning and possible methods of accident prevention on mountains, see "Lightning and the Mountain" by James Wilson and Robin Hansen in the *Sierra Club Bulletin Annual Magazine,* 1948.

New Ascents And Various Expeditions

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Central Rockies

Mt. Hooge (10,550 feet). First ascent, July 20, 1948. Fred D. Ayres, John Oberlin, Don Woods.

Mt. Monchy (10,530 feet). First ascent, July 20, 1948. Same party. Page 16. There is still one unclimbed summit in this group—Mt. Willerval (10,420 feet). These peaks were named after French villages where the Canadian troops fought in World War I.

Mt. Alberta (11,874 feet). Second ascent, July 30, 1948. Fred D. Ayres, John Oberlin. Page 1.

Un-named peak north of Diadem Peak (10,500 feet). First ascent, July 31, 1948. George Harr, Charles and Ellen Wilts. Page 131.

Mt. Lowell (10,300 feet). New route on the Northwest Tower, July 1948. John and Ruth Mendenhall. Page 130.

Peyto Lake Camp

Trapper Peak (9,790 feet). First traverse, July 15, 1948. Club party led by Alan Melville. Page 65.

Mt. Thompson (10,119 feet). New route by hanging glacier on the north face. Club party led by Don Munday. (4 hours). Page 60.

"Caldron Peak" (9,200 feet). New route by cliffs of the south face (7 hours), July 15, 1948. Club party led by Rex Gibson. This climb was repeated using variations of the original route by two other ropes.

Dolomite Peak (9,815 feet). First ascent of Tower No. 3, July 20, 1948. This is the first tower north of the main summit. Club party led by Polly Prescott.

Brussels Peak (10,370). First ascent, July 22, 1948. Ray Garner, Jack Lewis. (9 hours). Page 21.

Purcell Range Bugaboo Group

Pigeon Spire (10,250). New route via north face, July 17, 1948. Fred Beckey, Joe Hieb, Ralph Widrig. (7½ hours). Page 50. Northern Selkirks

Sorcerer Mountain (10,387 feet).

"Mt. Holway" (10,002 feet). Sterling Hendricks and party. This party carried out a traverse of the Northern Selkirks from south to north—Flat Creek on Canadian Pacific Railway to Swan Creek in the Adamant group, distance 75 miles. Page 83.

Coast Range
Lucky Four Group (West of Chilliwack Lake)

Wahleach Mountain (8,100 feet).

Mt. Foley (7,250 feet).

Mt. General Stewart (7,000 feet).

Baby Munday Peak (7,200 feet).

The Still (7,000 feet). Dr. Neal M. Carter and party from the Vancouver Section of the Club, July 1-4, 1948. Page 93.

—E. R. Gibson.

Old Glacier House Hotel About 1910

The three parts of the old Glacier House Hotel together formed the shrine of mountaineers in North America. Many of these climbers from all parts of the world made their first American alpine climbs in the Selkirks. The hotel was pulled down in 1929, and thus the shrine was removed for ever from the snow and ice covered mountains of North America. It is only right that the present generation of active Canadian mountaineers should at least see the pictures of this favorite resort and that wonderful hostess, Mrs. J. M. Young who had charge of it at the height of its glory, about 1910. It is for this reason that these specially selected photographs are inserted in this issue of the Journal, so as to complete the article by Major F. V. Longstaff in last years' Journal. The old hotel was much loved by the early generation of mountaineers, led by the late Charles E. Fay, who gave the first publicity by many fine articles in Appalachia. There are still a few of the Old Timers in the club.

—F. V. Longstaff.

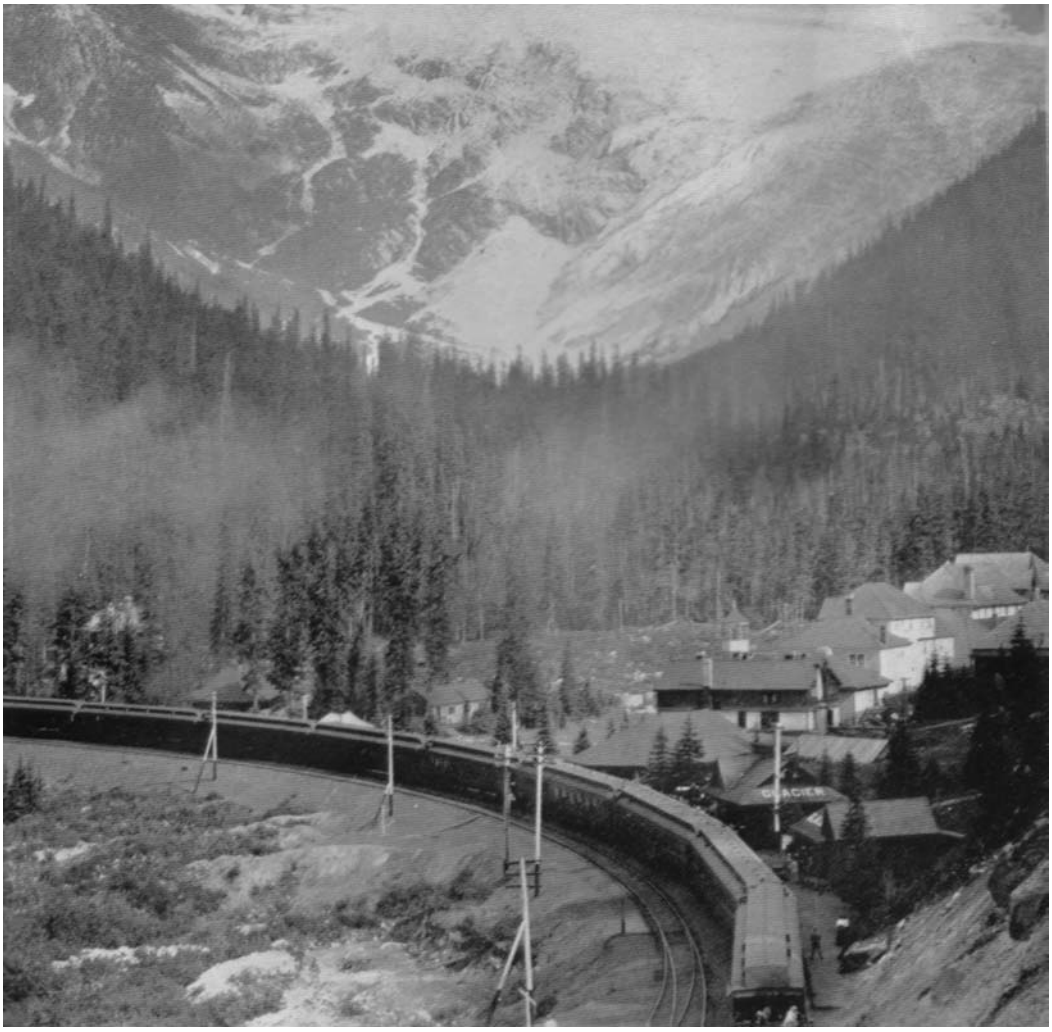
Letter From Mr. F. N. Waterman

It may interest the many friends of the late Mr. F. N. Waterman to read part of a letter written by him to Rudolph Aemmer on July 23, 1947.

"Now it is summer again, the climbing season; and my thoughts go out to the mountains where I would so much like to be. The memories of the grand climbs we used to have come back vividly, particularly Birdwood and Queen Mary! How I did enjoy following you up those peaks! You did some splendid climbing on them, the finest I have ever seen! The ice-filled chimney on Birdwood without ice axe or nailed boots, the way you got onto my shoulders while I stood on that little ice pinnacle, and you did not disturb my balance at all! I have wondered ever since how you did it. Then there was that delicate traverse into the last chimney on that very thin, rather rock wall and finally that long piece of smooth-walled chimney where you went up by expanding your knees and elbows against the opposite walls! Splendid work! That was certainly a climb packed full of excitement and interest with more problems packed into a short distance than any other I have known. It was great sport! I have lived it over again many times in memory.

"Than there was Queen Mary when we went up the left hand couloir and found ourselves looking through a window to the valley on the opposite side of the mountain and no apparent way of getting toward the peak. You climbed up on the left and spied the crack in the vertical face that was so far away that it did not seem possible that you could get your arm into it. But you came down and did it, and saved the day for us! It was great! I remember how puzzled I was because you did not make any shout of triumph when you got to the top of that wall. I found out why when I got to the top and found we were on top of a big chunk of rock and had to rope off on the other side! Anyway, it was a great piece of climbing, and, as things turned out, a most enjoyable feature of the day's sport. However, I think if we were doing it again, you would choose to go up the right hand couloir by which we came down.

"Then there was that vertical wall with the narrow ledge with the bulge of white rock in it where we did a spread eagle traverse and you found the hand hold which enabled us to swing around the bulge! That was a rather nice ridge that we finally walked to the peak too! It was good fun, all of it!



Glacier House About 1910. *Photo F. V. Longstaff.*

Mrs. J. M. Young

Glacier House, All Three Sections.
Photo F. V. Longstaff.

"How I wish that we could do it again. But, as you said in your letter, time has made a difference. You are finding climbing harder, I can't even walk any more to say nothing of climbing. But we have the memories of the climbs we have done. They at least remain with us, and how precious they are!"

Sincerely,
Frank N. Waterman.

CLUB PROCEEDINGS

Ski Camp, 1948

It was right and fitting that the 1948 Ski Camp should be held in the Selkirks at the Arthur O. Wheeler Hut, which had been officially opened at the previous summer's camp. This beautiful log cabin is a worthy tribute to the memory of the honored founder of our Club. A fine example of log construction and stone work, it will last for many years and its master builder "Hob" Dowler is to be congratulated on an outstanding piece of work.

A cheery crowd of ski enthusiasts got off the trains at Glacier Station on Saturday, March 27 to find everything "laid on", Two experienced hands were at the controls—Norman Brewster as Camp Manager and our old friend and indispensable "jack of all trades" "Ken Jones" in charge of the commissariat. We had representatives from the Vancouver, Victoria, Calgary, and Edmonton Sections as well as several friends from the U.S.A.

The cabin looked extremely attractive with its mantle of snow, covering roof and porch to a depth of some three to four feet. The snow on the roof was the cause of an amusing incident, when Rex decided to dig out the main chimney to improve its draught. After shovelling for a while on the peak of the roof, a three-inch crack suddenly developed along the apex of the snow cover and a few minutes later the whole mass of snow on the east side avalanched off carrying Rex with it. We went to bed that night rather wondering what would happen to the remainder of the snow, as the west side of the roof still held its full quota. The weather turned warm and dripping eaves presaged trouble. Suddenly round about midnight the rest of the snow slid off with a mighty roar and we could almost feel the cabin heave a sigh of relief.

The main ski grounds accessible from the hut are those up the Asulkan Valley and we found the narrow canyon, which normally gives access to the upper snows, filled from side to side by a huge avalanche. In fact the avalanche hazard is a major one in this region and adds an element of risk which makes it perhaps doubtful whether Club Ski Camps should be located here in the future. This is unfortunate as the A. O. Wheeler Hut is an ideal one for winter occupancy and has the further advantage of being so close to rail communication.

The major expedition of this camp was undertaken on March 30 by a party of ten under Norman's careful leadership. Sapphire Col, 8,700 feet, was the objective and it was reached in about five hours. Four of the more energetic skiers went on and made the first winter ascent of Castor, 9,118 feet; this party was led by Fred Ayres. The run down, which took two hours, was somewhat marred by a flat light.

Another long trip was that to the Asulkan Pass, 7,700 feet, on April 4—a bright sunny day with a temperature of 18 degrees above at dawn. This climb also took five hours and involved heavy trail breaking in deep, new snow. Fine views of Sir Donald were enjoyed and the panorama southward from the pass of Mt. Fox and the Dawson Range was breath-taking. The run down called for good deep-snow technique and it was a convincing demonstration that the day of the despised telemark and the other deep-snow turns is by no means past.

The evenings in camp were enlivened by trips to the village of Glacier, and on one occasion the local school children were entertained with a showing of Kodachromes. One of the boys from Edmonton, Jim Proudfoot, conducted en embryo ski school for the local talent and introduced a number of youthful enthusiasts to the mysteries of slalom running and ski jumping.

—E.R.G.

Peyto Lake Camp

July 11 to July 30, 1948

This was our 43rd Annual Camp, and we fortunately enjoyed a spell of almost perfect weather at its opening. The Campsite was in the shelter of the wooded barrier which almost fills the valley about one mile below the glacier tongue. It was a happy and congenial company that assembled there, and a full program of climbing was maintained. Climbs were made of Ayesha, Baker, Mistaya, Peyto, Patterson, Portal, Rhondda, Trapper, and as well, Athabaska, Sarbach, Dolomite and Hector.

Rock climbing and Snow and Ice Mountaineering Schools were conducted by Major Gibson and Mr. and Mrs. Munday, and the practice and knowledge thus gained were greatly appreciated by those attending. The "Cauldron Cliffs" afforded some splendid rock climbing. One of the spectacular expeditions was the Glacier Circle Tour. Starting from the base camp, a trail through flower-strewn meadows was followed to Bow Glacier which was ascended through the icefall. From there the party continued over the snowfield descending the Peyto Glacier at nightfall.

Such a varied list of climbs would have been impossible without the excellent and unselfish services of our volunteer guides. Those leading parties included Mesdames Brett, DeLacy, Gibson, Munday, and Prescott and Messrs. Beattie, Bidwell, Brett, Cade, Clapp, Day, Erskine, Genschorek, Gibson, Griscom, Heybroek, Ho, Jackson, Kingman, Marston, MacPherson, Melville, Mitchell, Moser, Munday, Monod, Nicholls, Peckman, Woodsworth, and Young.

We were pleased to welcome Colonel Homer S. Robinson, Chief of the Personal Relations Branch of the National Parks Department, who graduated to active membership, but there was universal regret that he sustained an injury to his foot through a falling rock which cut his visit short.

As always, Major F. V. Longstaff rendered valuable assistance in many directions and his kindly help (and equipment!) were often sought and gladly given.

The official camp doctor, Dr. R. C. Riley of Calgary, contributed in no small measure to the success of the camp by his efficient care of the health of the members and his salt tablet confections were in great demand. We look forward to his genial presence at our future camps.

The camp fires were organized by the President assisted by the Honorary President, Mr. H. E. Sampson, K.C., and the sheltered clearing in which they were held provided an ideal setting. The occasion of the special Memorial Service to our departed members conducted by Mr. Sampson was an impressive and memorable one. In these ideal surroundings, on a beautiful Sunday morning, a service of inspiration and praise was conducted by Major Gibson.

CAMP STATISTICS

Attendance:

From Canada	116
From U.S.A.	36
From South Africa	2
From Malaya	1
Total	160

The Wheeler Hut. *Photo Don Linke.*

Mt. Fox. *Photo Don Linke.*

Asulkan Valley. *Photo Don Linke.*

Climbing Record:

The climbing record as shown by the climbing sheets:

	Number of Parties	Total number of Persons
Athabaska	2	18
Ayesha	1	4
Baker	7	50
Bow Peak, west	1	6
Cauldron, rock face	3	17
Dolomite	1	5
Glacier circle tour	2	12
Hector	1	6
Mistaya	4	29
Patterson	1	7
Peyto Peak	5	38
Portal Peak	3	17
Rhondda	5	41
Sarbach	1	6
Thompson	1	10
Thompson, north face	1	9
Trapper	7	51
Mountaineering School, ice and rock	5	50
TOTAL	51	376

The following graduated for active membership:

Athabaska:

Mr. Walter Sangree.

Baker:

Miss Hope Hodges, Mr. C. J. McAllister, Mr. Peter Matthews, Mr. Herb Spear, Mr. Edward D. Weatherhead.

Mistaya:

Miss Helene Boeing, Miss Mabel Duggan, Miss Sylvia Lash, Miss Patricia Miller, Mr. J. H. Bussell, Dr. G. M. Everett, Mr. Kay Day, Mr. Andrew Griscom, Mr. Peter Tassie.

Peyto:

Mrs. Canfield Beattie, Miss Jean Davidson, Miss Pauline Doberar, Miss Gladys Murphy, Mrs. K. L. Young, Miss Rosemary Young, Mr. Richard Barnes, Mr. Brock Byers, Mr. Jim Pinch, Mr. E. Pankalski, Dr. R. C. Riley.

Portal:

Miss Evelyn Ewens.

Trapper:

Miss G. Chauvin, Miss Mary Neilan, Mrs. C. M. Nickolls, Miss Mary Speakman, Mr. lan Roberts, Mr. Homer S. Robinson, Mr. G. L. Stevenson.

CORRIGENDA

Canadian Alpine Journal, 1948

Pages 38-54, for "Mt. Lloyd George" read "Mt. David Lloyd George."

Pages 38-54 and page 138, official data re altitudes being at present inadequate, corrections required here must be postponed till a later issue.

Page 49, for "bubble theodolite" read Abney level."

Illustrations, opposite page 144, for caption of photo at upper left read "Mt. Tiedemann" and for caption of photo at lower right read "Looking down the Tellot Glacier."

Illustrations, opposite page 160, for L. to R. in caption of upper photo, read "R. to L."

Page 235 (Avalanche on Mt. Serra), for "showed important change" read "showed no important change."

Page 238 (Windy Castle), for "Henry Hall" read "Margaret Finley" and for "Dave Wessel" read "Allan Bruce-Robertson."

Page 238 (Mt. Athabaska), for "Graham McPhee" read "G. Graham Macphee."

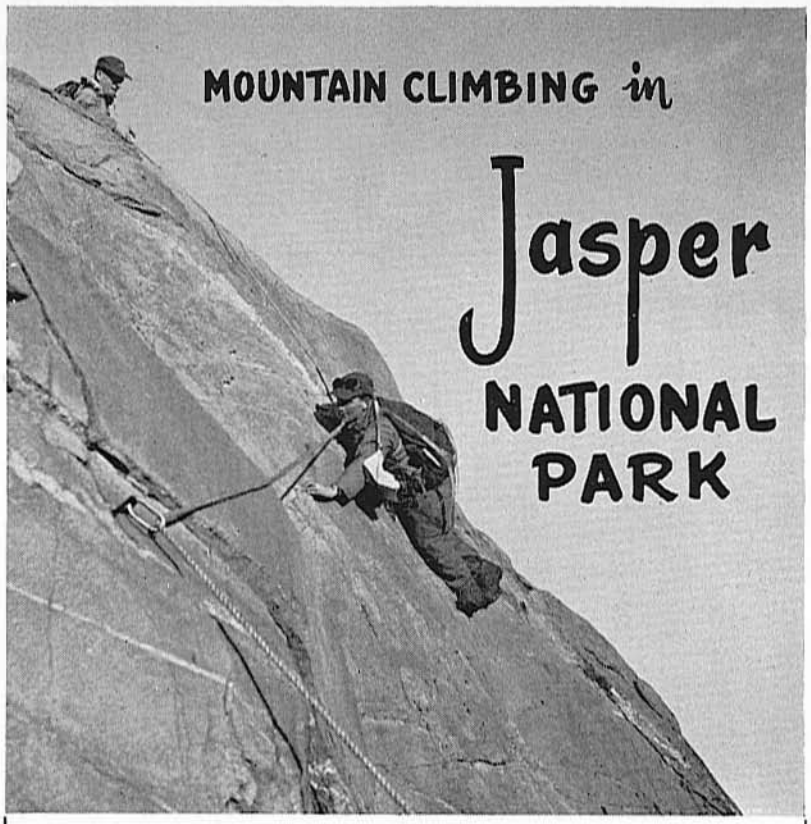
THE
ALPINE CLUB HOUSE AT BANFF

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 $5.00 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 15 write to the Chairman, House Committee, 1801-8th St. West, Calgary, and after June 15 to the Manager, Alpine Clubhouse, Banff, Alberta.



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