Exploration of the Northern Monashee Range

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THE Monashee (Mountain of Peace) Range, formerly called the Gold Range, is in British Columbia, immediately W. of the Selkirks and S. E. of the Cariboos. The Columbia and the Canoe Rivers form its eastern boundary, the Canoe River its northern, and the North Thompson River and Albreda Creek its western. The range extends S. of the main line of the Canadian Pacific Railway, to upper Arrow Lake, but its southern portion is of little interest to the mountaineer.

In the north, especially N. from Blue River, the Monashees rise to a climax of fine peaks and large glaciers. Mt. Milton and Mt. Cheadle are in this northern portion, which has been called the "Malton Range," and it is in this region, along the Thompson River, that Milton and Cheadle experienced their greatest difficulties on their remarkable *Northwest Passage by Land.*

The northern part of the Monashee Range is practically unknown to the mountaineer, and with good reason. It is unmapped and has very few trails. Like the Cariboos, it is protected by a luxurious tropical-like growth that resists penetration.

When Lorin Tiefenthaler and I were in the southern part of the Cariboo Range in the summer of 1939, we saw, E. and S. of E. of us, and perhaps 40 miles away, a fine, high glacier-covered range that extended N. and S. We recognized icy Mt. Albreda (*Milton*) (10,090 ft), at the very northernmost point. It had been climbed twice by Allen Carpe, once in 1924, and again, by a different route, in 1928.

To the S. of Mt. Albreda we saw peaks that seemed higher than Albreda. In the northern portion, high icefields reached almost to the top of the highest peaks and seemed to be connected, but in the southern portion the range seemed to be more broken by cross valleys, and the glaciers less continuous.

We decided then and there that our next trip would involve the exploration of that area. Tentatively, we determined that we would enter the range from the W., on the North Thompson side, and that when we reached the top of the range, we would walk S. as

far as we could, and then go out of the range to the North Thompson.

A photograph, which we greatly enlarged, corroborated our first impression of the range. It appeared that if we got to the core of the range, we could probably go S. a short distance without too many difficulties, but that farther S. we could not get through as easily.

Our investigation confirmed these conclusions. By corresponding with the national and provincial governments we learned that no maps of the range were available, nor any information that would be of much help. The only maps we could obtain were of the deep cut Thompson Valley along the railroad, the mapped area extending only a half mile or so on either side of the railroad. These were of help only because they showed the creeks coming into the North Thompson River. From Mr. J. M. Riddell of the Geodetic Service, we learned that a mountain lying between Moonbeam and Serpentine Creeks had been occupied in 1939 by a geodetic expedition which had entered the range by way of a "somewhat hazardous" trail in Serpentine Valley. They named the mountain Lempriere and established its height as 10,525 ft. But we did not secure either a sketch map of the region or a more exact location of the mountain.

From Norman Anderson, a trapper, we secured a fine sketch map of the area trapped by him, and drained by Bone Creek, which flows into the North Thompson N. of Blue River. From Miss Ella Frye, another trapper, who had been of great help to us on our trip into the Cariboos, I received a sketch map showing a possible route into the range, along a ridge between Dominion and Moonbeam Creeks. My friend, Angus Horne, of Blue River, also made valuable suggestions, particularly regarding the region near Blue River. The foregoing was the only information we were able to obtain to meet the problems confronting us. We did not know whether we could reach the heart of the range, nor where or how we could get out.

We were equipped as we had been before. Everything was of the lightest—a 3-lb. tent, 3-lb. sleeping bags, food weighed to the exact amount for 15 days, four cameras, medical supplies, climbing equipment, including two ropes, compasses, clinometer, barometer, thermometer, monocular, and a primus stove with a gallon of gasoline for the high camps. All this was in two pack boards which

weighed over 60 lbs. each. When we finished our trip they weighed under 40 lbs. each.

In one respect, our plans for this trip were quite unique. We wanted to avoid the hardships and delays of bushwhacking through the lower valleys, so we decided to find an outlier ridge on which we could reach timberline the first day, and by which we could reach the backbone of the range. From the photograph this seemed feasible. Miss Frye attempted to solve this problem for us. The sketch map which she had given us indicated such a route to the top of the ridge back of her cabin, and E. along the ridge to the icefields. The sketch showed one mountain in the ridge. Alas, there were three!

On Friday evening, July 4th, we got off the Canadian National train at Gosnell, a flag station at the junction of the North Thompson River and Albreda Creek. We were welcomed royally by Miss Frye, Malcolm MacMillan, Gunnard Weberg, trappers, Dorothy, a young friend of theirs, their Collie dog, and a pet bear. In the evening we deliberated upon the question of whether we should take the route indicated on Miss Frye's sketch map, which was based upon information secured from another trapper, or whether we should follow a route which was N. of the cabin, on a ridge which rose more gradually, ridge numbered 8 on the map. Our friends were far from certain that the route indicated on the map was a good route or even a feasible one. We felt that they favored the other ridge, because Malcolm MacMillan, who had hunted goat there the autumn before, had encountered no unusual difficulties in reaching a high point where he could see the icefields. However, we decided to take the first route. I am satisfied now, not only that the second route, but that a valley route, in spite of bushwhacking, would have been an easier and quicker way to penetrate the range. But it is ever thus! The hardships and problems on the route you do not take are unknown, so the route you do not take is always easier.

Before leaving, we played with the bear. At three months the bear seemed to be more intelligent than a baby of three years. Fond mothers and psychologists might contest this statement. The bear had a great sense of humor. He boxed with us, and he wrestled with the dog. When we did not let him in the cabin, he whined and tried to get in, first at the door, and then at the window. When he purred, it sounded like an outboard motor. At night he

slept up high on the branch of a tree, hanging over the branch like a bag of grain. But the trappers were concerned as to what to do with him, for his playful bite or claw would go completely through one's skin, and he would soon be dangerous.

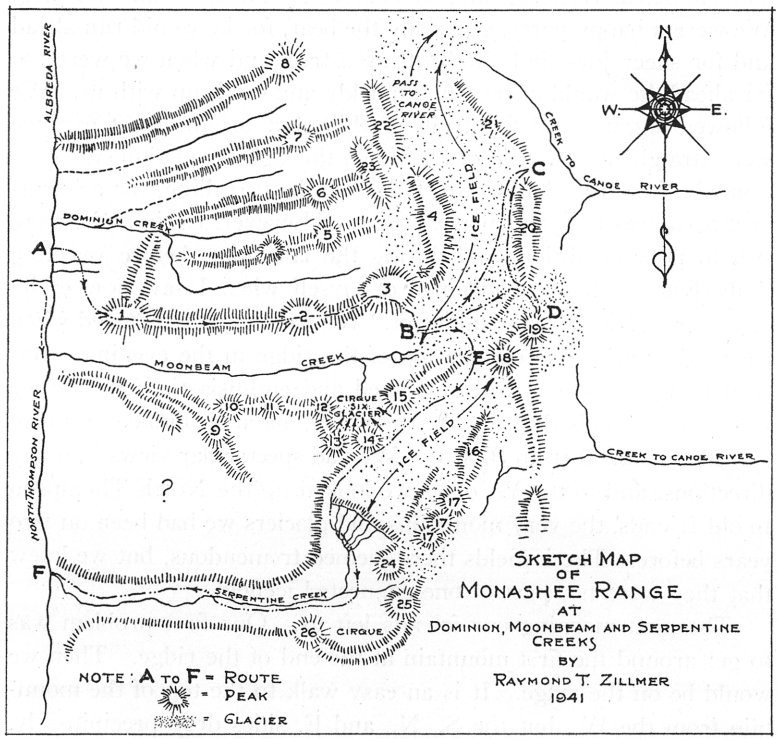
On Saturday morning we started, accompanied by Miss Frye and Gunnard Weberg, and, of course, by the bear and the dog. We were a happy party, especially the bear, for he would run ahead and for sheer joy climb 30-40 ft. up a tree, and when we were too far ahead, he would come down quickly and catch up with us. We followed logging and fire trails a while, but for the most part we went straight up the side of the ridge, through burnt timber. Fortunately, few trees had as yet fallen, so the travelling, for a burnt-over area, was not particularly trying. However, Lorin and I were still in poor condition, and during the last hour, before reaching timberline, I felt quite ashamed of myself when I saw how easily our trapper friends were taking it. We were quite exhausted when we reached a bench near the top of the ridge in the evening. But after a short rest we were refreshed and enthusiastic, for here we were, above timberline on the first day, having climbed from an elevation of 2500 ft. to 7000 ft. We had spectacular views in many directions, and to the W. of us we looked up the North Thompson to old friends, the very mountains and glaciers we had been on two years before. The icefields there seemed tremendous, but we knew that they were not part of one connected icefield.

The next morning our friends left us. Our first problem was to get around the first mountain at the end of the ridge. Then we would be on the ridge. It is an easy walk to the top of the mountain from the W., but the S., N., and E. sides drop precipitously. On the S. side, just below the top, we were delighted to find a gully which took us nicely down the S. face. Had we not found it, we would have been compelled to go down at least 1000 ft. on the steep S. face. We thought it would take an hour to get around mountain No. 1. It took half a day, for it was difficult enough to require care. We camped on the ridge, E. of No. 1, in the late afternoon, in a most glorious location.

It was one of the few flat camping spots we were to have. The heather was deep and abundant, and a circle of low spruces protected us from the wind. We pitched our small tent under the highest of these, one eight feet high, with a trunk twelve inches

thick at the bottom—surely, it had viewed the magnificent scenery about us well over 100 years.

To the S. W. stretched the beautiful mountains and icefields N. W. of Blue River. When we looked back, the route which we had taken around No. 1 looked quite exciting. The ridge we were



on dropped down perhaps a mile on either side, so steeply, however, that we could not see Dominion or Moonbeam Creeks except in the distance. At the head of each creek is a beautiful high mountain (4 and 15). In the ridge ahead of us were two mountains (2 and 3). To the N. are parallel subsidiary ridges, which become gradually lower as they approach Albreda Creek. Each of these ridges culminates in a peak before connecting with the main Monashee Range. I have numbered the peaks in these ridges, 5, 6, 7, and 8. Peaks 5 and 6 are over 9000 ft. high, 7 and 8 a little lower. Dominion Creek has two forks, the S. or main fork being just N. of the ridge we were on, and the N. fork lying between ridges 5

and 6. Because of the dense forest, we could not see whether the creeks between 6 and 7, and between 7 and 8, joined the Dominion or not. Miss Frye has since written me that the creek between 7 and 8 empties directly into Albreda Creek.

From our second camp we saw what appeared to be an easy route along the ridge to mountain No. 2, but beyond this we could see only the N. side of No. 3. We both felt that we would reach the icefields beyond No. 3 in a day or so. How poorly we had reckoned! We did not reach the icefields until the eighth day. This left us only seven days for the high portion of the range and for getting out to the railroad.

The eight days spent on the ridge and in going around the two mountains (2 and 3) were a continuous battle. Seldom were we able to stay on top of the ridge, and never were we able to take the N. side, for it was too precipitous. For the most part, we climbed endlessly up and down the S. slope, between 6000 and 8000 ft. altitude. Buttresses became quite annoying, for they either required extreme care when we could climb through them, or they forced us to go up or down the mountain side considerable distances to get above or below them. And then cross ridges confronted us. Up and down over the ridges we went, until we thought they would never cease. Usually we could see only the cross ridge ahead of us, and occasionally we would find ourselves so low that bushwhacking was necessary. At one place a steep, smooth slab formation of considerable width blocked our way, but, fortunately, we were able to get across by solving a route through the maze of narrow cracks which covered its surface.

The first three days we were without water, which necessitated melting snow, but in the melting, the snow absorbed the smoke from the fire, so that our food was strongly and unpleasantly flavored. And moreover, snow was not easy to find. One day we carried it for a long distance, in raincoats. Another day we lunched on the ridge, at a point where it was flat as a table for several hundred yards, and there, on the N. side, where huge blocks of rock were ready to break away, we found snow 30 ft. below, in the cracks between the blocks and the ridge.

We had sleeping difficulties, too, after the third day, for we had to go around mountains 2 and 3, the sides of which were so steep that we could find no place flat enough for a tent. So, for the next four nights, Lorin built tent platforms by digging into the side of

the mountain with an iceaxe, to a depth of three to five ft. and by building up a rock wall of equal height on the outside. One night we camped at the end of a buttress which has a sheer drop for 1000 ft. to the valley below. At this camp our vermin-proof tent was eaten by a small animal that kept us awake much of the night, and in the morning a spark set fire to the waxed bag containing the dried milk. Was this accident timed to give us burnt milk for the rest of the trip, just when we had finally gotten away from smoked water? One night a rock-rabbit kept us awake by knocking our discarded butter can against the rocks. Apparently he had inserted his head in the can to lick up the last remaining morsels of butter and salt.

It rained daily from the second to the eighth day, and on several days it hailed. We crawled into a cave one noon to avoid the hail and to eat our lunch. There, on a ledge, we found newly stored, sweet smelling, dried grasses, evidently gathered by a small animal, and below this season's grass was the grass of last year. One day a hummingbird flew into camp, stopped in flight, looked us over deliberately, and flew on. I have thought often of the grass on the ledge and of the hummingbird.

We were worried for a time that on reaching the end of the ridge we would not be able to get around peaks 2 and 3. Our greatest fear, however, was that we might be compelled to retrace our steps. On the seventh day we felt quite low. Lorin had enormous blisters on his feet, and the ends of my fingers were cracked and raw. Toward evening it hailed again and it was almost freezing. We were soaked to the skin. The two-foot spruces through which we walked were dripping wet. They grew on a steep slope, in rocks which we could not see because they were covered by the lower branches, and, occasionally, we would fall into the most humiliating and ridiculous positions when the rocks gave way or we stepped into holes. After 7.00 P.M. we reached our first running water for hours. Before we could erect our tent on the steep slope, it rained and hailed harder than ever. There was no shelter nearby, so we crawled under the tent with our packs, and held on to the ice-axe driven into the ground. And there we stayed until it was dark and stopped raining. But by 10.30 we had eaten and were asleep on a platform which we had built and made comfortable with spruce boughs from which we had shaken most of the water.

The next day we reached the icefields, which, at first, had seemed so near, and camped next to the glacier in a most beautiful and spectacular location. Our spirits were high. We were at the head of Moonbeam Valley. The whole end had once been covered by a glacier, and the middle of the glacier had, not so long ago, covered the spit where we were camped. Just to the S. of us the glacier descended in a magnificent icefall which reached as low as 4500 ft. Our camp was at B, between peaks 3 and 15, the latter one of the most beautiful in the vicinity. We had called No. 15 Lempriere, but when we got to the head of the valley, we saw what appeared to be a cairn on No. 19, so we then thought No. 19 must be Lempriere.

The mountains on the S. side of Moonbeam Creek rise very abruptly. The ridge nearest the mouth of Moonbeam Creek seems to attain its highest elevation at its eastern end, after it turns S. This is true of a second ridge, which I have numbered 9. We could not see, and did not map, the area S. of No. 9, but we understand that two small creeks rise there and drain to the North Thompson Valley. The two former ridges, and a third ridge, are connected, so that together the three form the solid wall bounding the Moonbeam on the S. The third ridge contains three peaks (10, 11, 12) of almost equal height. West of No. 12 and E. of No. 15 is a beautiful cirque from which six glaciers descend in separate lobes. We estimated that No. 9 is 9700 ft., Nos. 10, 11 and 12, 9500 ft., and two peaks in the cirque, Nos. 13 and 14, 9400 and 9200 ft., respectively.

From the ridge we could look well over the peaks in the cirque, and see in the background a glacier-blanketed mountain which I wanted to name Blanket Mountain (16), and another (17), which I called Twin Peak, but which we later saw had three separate peaks. These peaks seemed to offer fine climbing. We did not know then their relationship to the area, nor the location of Serpentine Creek.

Our problem was to get to the S. On the afternoon of the eighth day we went up the glacier a short distance to reconnoiter. No. 15 turns toward the N. at its eastern end. Beyond and N. E. of No. 15 a lower ridge is almost entirely covered by a fine icefall coming down from two mountains (18 and 19) to the S. E. This icefall reaches its highest point in a col between Nos. 15 and 18.

We thought that, perhaps, this col might be the solution to our problem of getting south.

However, the next morning we determined that we would not attempt to reach the col, for the icefall which we would have to ascend was badly crevassed. Instead, with our entire equipment we went up the Moonbeam Glacier, which turned more and more to the N. At times we sank to our knees in the soft snow, but, fortunately, this was exceptional. We passed Nos. 18 and 19, the latter having a beautiful ice arête by which one could reach the top from the glacier N. of it, the glacier there occupying a bench perhaps 500 ft. higher than the glacier we were on. We turned almost N. as we passed No. 20, a long mountain with several tempting towers, the highest of which is over 10,000 ft. We aimed for a col between Nos. 20 and 21. It was near the highest part of the icefield, which we thought would reach around the E. side of No. 20, in which event we would go around No. 20 to the S. It took us four hours to go the four miles or more to reach the col at C, an elevation of 9000 ft.

Our first look beyond the col was a great surprise. The glacier drops down precipitously and does not extend around No. 20, whose eastern face is a steep rock face dropping to a green valley, perhaps a mile below. Mountain No. 21 to the N. W. hardly projects through the icefield, which attains its greatest elevation adjacent to No. 21. Looking N. from the col, we saw that the glacier we were on reached around the W. side and the N. end of No. 21, and then, in an icefall, formed the source of a creek which flows first in a southeasterly and then in an easterly direction to the Canoe River Valley. The mountains immediately N. E. of the creek are low. Not far beyond them, the Canoe River turns westerly and cuts around the N. end of the Monashee Range, and then crosses the Canadian National Railway and rises in the Cariboo Range.

To the W. and N. W. of us, and N. of No. 4, we saw two peaks of black rock (22 and 23) which are nearly 10,000 ft. high. A S. ridge offers an easy route to the top of No. 4 (10,600 ft.), a fine peak with a rather steep icefall on its E. face. We regret that we did not climb it, for it may be the highest peak in the range.

We retraced our way down the glacier until we came to the S. end of No. 20. Here we went E., up the rather steep and soft snow which covered the ice, to an upper glacial bench at 9200 ft. Looking E. from there we saw that another creek rose out of the

glacier below us and, flowing northeasterly, joined the creek already mentioned as flowing to the Canoe.

We continued in a southeasterly direction, to the highest point of the glacial bench at D, where, at 9500 ft., we could see behind No. 19. We had hoped that the glacier would continue around the E. side of No. 19, but again we were disappointed, for the glacier reaches only halfway around and then drops sharply to a valley and a creek which flows S. E. and then E. to the Canoe River. There is a col S. of the mountain mass which makes up Nos. 18 and 19, but we did not determine whether or not it was a negotiable pass.

Our view from D was one of the finest on the trip. To the S. and slightly S. E. are many other fine peaks and glaciers of the Monashee Range, material for future exploration. To the E., with low mountains in the foreground, is the valley of the Canoe. Further E., we could see the higher peaks near the Continental Divide, and to the N. E., over low mountains in the foreground, Mt. Robson was visible.

Our next effort to get to the S. was to be by the icefall which we had deferred climbing. Lorin favored crossing the upper bench below Nos. 18 and 19 at once, and going to the col at E, but we were very tired, and the area was badly crevassed. Also, it was late in the afternoon, and we would have had to spend the night on the glacier. So we returned to our camp at B.

The next morning when I looked out of my tent, four goats—a whole family—were standing nearby. They saw me at once, stared a while, and were off. The night before I thought that I had heard a bleat, so I crawled out of my bag and brought the packs nearer to us. Apparently it had been a goat. Yet there wasn't a bit of green of any kind near us, only rocks and ice.

On the tenth day we attacked the icefall between Nos. 15 and 18. In the icefall are a series of glacial benches between steep drops. We avoided the large crevasses in the steepest parts and, for the most part, were able to ascend over smoother areas where the snow bridges were safe. It was slow work, however, for we had to test every step. We reached the top of the col at 3.30 and realized at once that we could go down the glacier on the other side, to a valley which we determined to be the Serpentine. Then, for the first time, we believed that our trip was a success, for we were confident that we could get out by a route other than the one we took to get in.

When going up the last steep portion of the icefall, I noticed on the clean, white snow, small, black worms. They were approximately 1/32nd of an inch long, and there were three to five of them on each square inch. I breathed on them and they were gone, having scampered away farther down, into the small spaces between the snow crystals. What do these worms feed on? Perhaps I would rather not know. What feeds on the worms? The spiders we saw on the ice, or the flies? Certainly not the birds. On the expedition of the Duke of the Abruzzi to Mt. St. Elias, they found small, dark-colored worms (*Melanenchytraeus Solifugus*) which they preserved in alcohol. Later, in the laboratory, they made slides of cross sections. Enlarged several hundred times, these worms were shown to have brains, nerves, intestines, hearts, reproductive organs, and other organs associated with an advanced stage of animal life.

Three peaks (15, 18, and 19) can be climbed from the col, which is at about 10,000 ft. We had time that day to climb one of them. We wanted to make a first ascent. We had assumed that No. 19 was Lempriere because of what we thought was a cairn on it. We had long admired No. 15 and it seemed as high as any. So we went up No. 15, on the ridge which leads from the col directly to the top. For the most part we were in snow just under the ridge, which is heavily corniced on the Moonbeam side. The snow on the steep slope once got dangerously thin, but by dropping lower we found deeper snow. The highest point, 10,525 ft., is at the western end. When we reached it we were astonished, for here was the abandoned camp of the Geodetic Survey, with miscellaneous supplies lying about, including food two years old but still edible. In the cairn was the following: "Hello Lempriere July-Aug. 28/39 Geodetic Survey of Canada. Ed Pike, Frank Bambrick, Norm Chapman. Amen." We added our names to the following message: "July 13, 1941, at 6 P.M. Greetings Geodetic Survey. We thought Lempriere was the second mountain E. of here, so we were much surprised to find an entire camp up here." The Geodetic Survey reported Lempriere as ten miles E. of mile 110.7 on the railroad, and as a "very difficult climb." We did not find it difficult.

We shall never forget the view from the top. Moonbeam and Serpentine Icefalls are spectacular, and the glaciers behind them substantial. The slab rock and the upper end of Moonbeam Valley

seemed much steeper than when we climbed them. The most spectacular mountains we saw were those near the head of the Canoe River, in the Cariboos. From here we concluded that No. 4 is probably the highest mountain in the Monashee Range, No. 18 as high as Lempriere, No. 19 about 10,300 ft., No. 16 10,000 ft., and No. 17 over 10,000 ft. We never ceased to admire the beautiful undulations of the blanket-like glacier which covers most of No. 16. The mountains further S. appeared lower. The mountains about us were probably the highest in the range.

We returned to the col by taking a lower route, and passed what appeared to be fallen, petrified trees three to five feet thick. Nearby we found long, flat rocks, worn round at regular joints, so that they looked like a pegged floor.

We were back at the col, 10,000 ft., at 7.55. Serpentine Glacier is a long one, and much of it is heavily crevassed. We felt that it would not be safe to attempt to get off the glacier that night, so we camped on the col. We were so high that the primus stove was unsatisfactory. The water for the soup never got really hot, and after cooking the macaroni a long time, we tasted it, ate a bit, and threw the rest away. Lorin dug out a hole in the snow for our tent, erecting a wall about a foot high on all sides. This was hardly necessary, however, for, in spite of our exposed position, there was not the slightest wind. As we had no air mattresses or ground sheet, we threw our thin tent on the snow and put our three-pound sleeping bags on it. We tried to cover ourselves as much as possible with the rest of the tent, but in this we were only partially successful. We crawled entirely into our bags, leaving an opening only for our noses. My thermometer showed it was below freezing when we went to bed. We expected to get up at 3 o'clock so as to reach a good camping spot, and rest, as soon as possible. The night was not uncomfortable, and imagine our astonishment when we looked out in the morning and saw that the sun was high. It was 9 A.M. We had slept almost eleven hours. In the morning we again had trouble cooking, so ate little.

As we were certain that we would have no difficulties in getting down the Serpentine, we loafed, and it was almost noon when we left the high camp. Part of Serpentine Glacier goes down to the S. E., in a lobe that drains to the next valley, behind No. 16. It may be that this is in the Bone Creek drainage. However, we followed the main glacier to the S. W., staying quite close to the

Lempriere side all the way, for the other side is higher and badly crevassed. The glacier required caution at times, but presented no problems until we went down an icy, stubby drop.

To our left were the three peaks of No. 17. But nearer us was a narrow cleaver rock. Only a small part of the glacier finds its way down between the cleaver and No. 17. The glacier ends just at the top of a rock wall which is vertical in the northern portion. Here a half dozen waterfalls drop down several hundred feet to the foot of the wall. In the southern portion the drop is steep but broken, and here is a cleaver peak (23), to the S. E. of which is a glacier which comes from the upper Serpentine Glacier, but which is fed substantially by ice that comes down from between Nos. 17 and 25. A creek with considerable water has its source in this glacier, and another still larger creek results from the joining of the many streams below the wall farther N. Together they become Serpentine Creek.

After leaving the glacier we followed a large moraine on the N. W. side of it. This same moraine took us down below the wall to timber which was four or five miles from the col. We had been anticipating with pleasure the green ahead—it looked so inviting after our three days on ice. But we soon felt otherwise, for the willow herb and a few other beautiful flowers were quickly succeeded by alders, which grew on a steep slope, in boulders. We battled alders until almost 8 o'clock, without finding a place to sleep. We had travelled eight hours without resting or eating, and we had eaten but little the 24 hours before. Finally, after crossing the many flooded streams with difficulty, we found a place to sleep among the spruces on the other side. But even here we could not erect the tent, so we slept in the open. I felt quite like an animal that night, when, on my hands and knees, I crawled under bushes and trees to find a spot to sleep on, and particularly when a friendly animal quite persistently attempted to be sociable during the night. In the morning Lorin could not find me until he discovered my socks hanging above me in a tree. It was the warmest night of our trip, about 50°, and the next two days were the hottest, the second day reaching probably 90° at noon. The creeks everywhere overflowed their banks.

The next morning, while we were writing our diaries in camp, we looked up and saw a goat standing just across the little stream

on which we were camped. He examined us a long time, and dashed away only when we moved to get our cameras.

We expected to have an easy time getting out down the Serpentine Valley, for, while the Geodetic department had written us that a "somewhat hazardous trail" follows the Serpentine, any trail would be easy in comparison with what we had been through. I had been advised that the trail was on the "left" side, but what was the "left" side? Was the "left" looking downstream or up? Ordinarily, it means looking down. We had no choice, however, when we started, for the river was too high to cross. We were soon battling alders again. Here I saw the largest alders I have ever seen, branches six inches thick. Suddenly we came upon a trail, but it soon disappeared. Then we reached the other large creek, and crossed it only after we had attempted to reach the other side in three places, having been forced back at the first two. Soon we were in alders again, but we avoided the largest of them by walking, almost to our waists at times, in flooded areas next to the stream. That night we camped on a sandy spot that was flat. It was a relief to be on level ground again and to be able to stand erect without holding on to something or watching one's feet or one's balance.

South of this camp was a cirque, in a position almost parallel to the cirque in Moonbeam Valley. This one, however, was green, having beautiful pastures all the way to the top. It looked like good game country. At each end of the cirque is a peak (25 and 26).

The next day was largely bushwhacking. At one time we found a trail, but we soon lost it. We thought it crossed the river. But we could not follow. In the late afternoon we reached a place where the river enters a canyon. Fortunately, the route on our side was still feasible, although arduous. Suddenly, however, the river disappeared. We did not notice its disappearance at first because we could not see it at the bottom of the deep canyon. It soon dawned on us that we were on a natural bridge covered with large trees and luxuriant vegetation. We were able to cross Serpentine Creek on this bridge. As we crossed we saw holes, through which we looked down to the rushing river, perhaps 100 ft. below. We did not stay on the bridge any longer than was necessary, for we feared that there were other holes, which might be covered lightly with fresh débris. We did not measure this bridge, but it

must be several hundred feet long, up and down stream, and it may be much longer. On the other side we found a trail, this time quite a good one, and we thought our troubles were over. But that was not to be. The next morning the trail led us promptly into the river and we walked in it, or bushwhacked, most of the day.

On Friday morning, two weeks after we started, we came to an abandoned tote road. We knew that we were three miles from the railroad. Again we congratulated ourselves too soon, for the tote road went along the flooded creek. We had less than a mile to go when the road suddenly crossed the river because our side was a steep canyon wall. Alas! The bridge on the road had been washed out; so we had to climb out of the canyon. It was our last stiff climb, for we were soon on the railroad, and another adventure came to an end.

I had some trouble with my barometer on the second day and I was able to adjust it only partially. When I returned to the city I had a graph made, comparing its readings with a master barometer. The elevations given are the best I can offer. I realize that the map will be corrected in the future, and that I would be less subject to criticism if I gave no heights and offered no map. They are presented, nevertheless, in the hope that they may be of some help to others.