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THE ALPINE CLUB OF CANADA

1912

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THE

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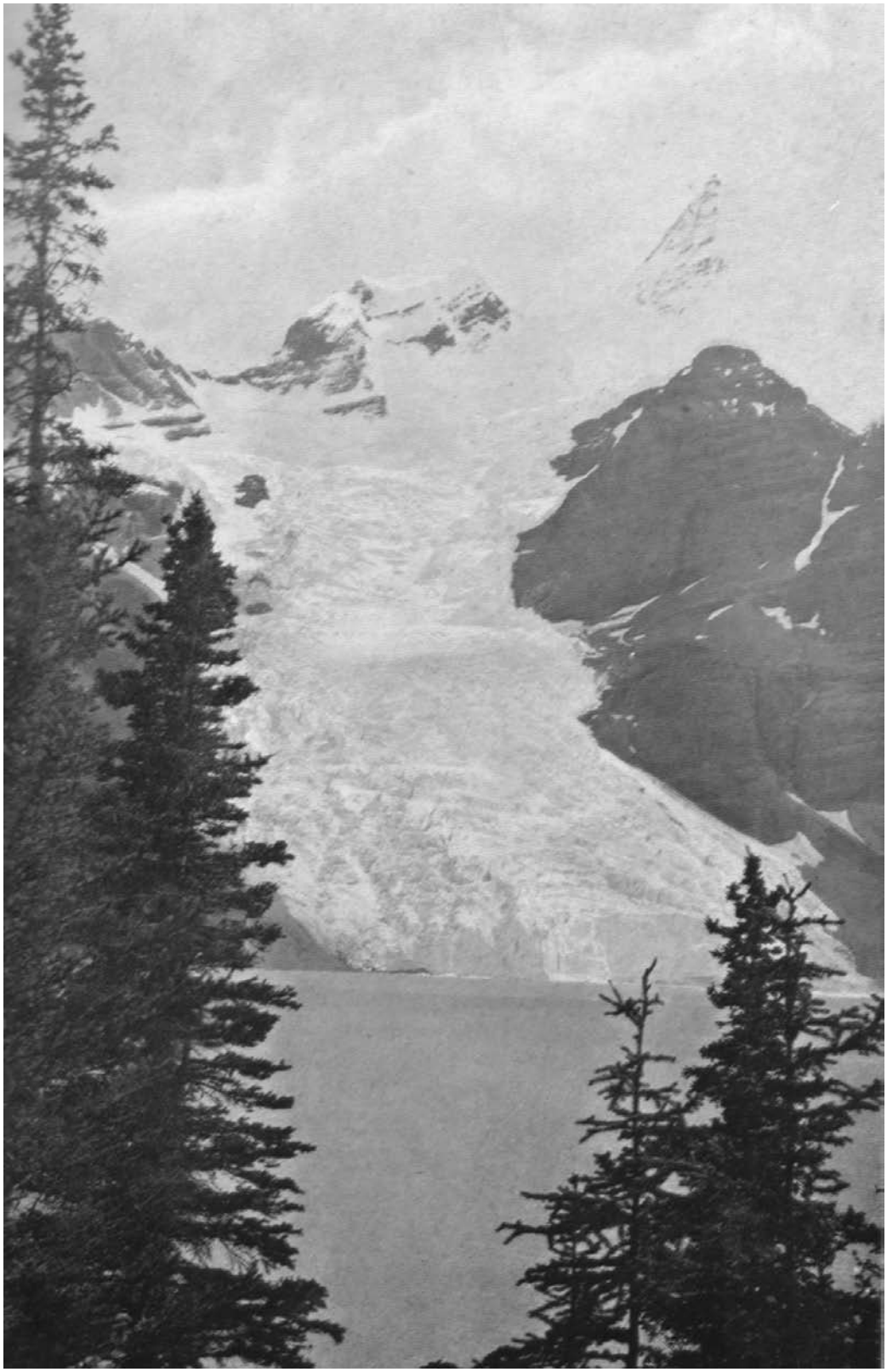

Tumbling Glacier And Berg Lake. Photo, Byron Harmon

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Vol. IV

MOUNTAINEERING SECTION.

The Alpine Club Of Canada's Expedition To Jasper Park, Yellowhead Pass And Mount Robson Region, 1911.

Arthur O. Wheeler.

Introduction.

Mount Robson is undoubtedly the highest peak of the region, and would also seem to be the highest peak of the main range of the Canadian Rockies. In the early days the Massif was assigned a height of 14,500 feet above sea-level. In 1899 McEvoy reduced this altitude to 13,700 feet, and the results of the present expedition would seem to subject it to a still further reduction to 13,068 feet. Viscount Milton and Dr. Cheadle in their book, "The North-West Passage by Land," 1863, refer to the peak as "of conical form, glacier-clothed and rugged," of which the "pointed apex of ice, glittering in the morning sun, shot up far into the blue heaven above to a height of probably 10,000 or 15,000 feet."

It is true that higher peaks are said to exist in the Yukon Territory, for instance: Mt. Logan placed at 19,500 feet, Mt. Hubbard at 16,400 feet, Mt. Vancouver at 15,600 feet, etc., but these peaks are as yet outside the limelight and, owing to their inaccessibility, will never be popular favorites.

In his report of his expedition of 1899, made for the Geological Survey of Canada, Mr. James McEvoy writes as follows: "It is interesting to note that in a paper read before the Royal Society of Canada by Dr. G. M. Dawson, the following paragraph occurs: 'The Kamloops Indians affirm that the very highest mountain they know is on the north side of the valley of Tête-Jaune Cache, about ten miles from the valley. This is named Yuh-hai-has-kun, from the appearance of a spiral road running up it.' The mountain referred to is undoubtedly Robson Peak, as it is only 15 miles north from the valley at Tête-Jaune Cache. The spiral road is probably an Indian's imperfect description of the horizontal lines on the face of the mountain." Unfortunately the spiral road does not reach the summit.

These and similar reports led the intrepid explorer and , mountaineer, Dr. A. P. Coleman, now President of the Alpine Club of Canada, to organize an expedition in 1907 with the object of making the ascent of the, by this time, celebrated peak. The attempt, made by the south face, failed and was followed the next year (1908) by a second attempt, this time on the east face, which also failed. Dr. Coleman had already arranged to try the ascent for the third time the year following, but was forestalled by the Rev. George B. Kinney, who had been a member of his party the two previous years, and who, it was understood, would also be a member of his party on this third attempt. Kinney, accompanied by a young Ontario river driver named Donald Phillips, a lad who had never climbed a mountain before, succeeded in reaching the summit, the ascent being made by the northwest and west faces.

The same year (1909) an expedition by Mumm, Hastings, and Amery, of the Alpine Club,

SPECIAL NOTE FOR THE CAJ DIGITAL EDITION

An oversized fold-out topographic map showing Mt. Robson and the Mountains of the Continental Divide North of Yellowhead Pass was included in the hardcopy version of the 1912 Canadian Alpine Journal.

It is not included in this digital version due to size restrictions.

England, with Mumm's guide, Moritz Inderbinen, attacked the mountain by the route last attempted by Coleman, and would have succeeded but for the mistake of starting from a base camp that was too far away. They had almost reached the great south-east arête—and the 1911 investigations have shown that once that is reached the remaining portion of the ascent is assured—when the lateness of the hour compelled a retreat, as it was not desired to spend a night on the mountain. Accounts of the several expeditions referred to will be found in the issues of the "Canadian Alpine Journal" for 1908, 1909 and 1910.

These expeditions and the various reports and rumours of magnificent peaks, great icefields, wonderful glaciers and gloriously coloured lakes had kept the Yellowhead section of the mountains well before the public, so when the Grand Trunk Pacific Railway pushed the advancing steel in sight of the main range, it was decided by the Alpine Club of Canada to organize an expedition and make direct investigations on its own behalf and in accordance with the propaganda laid down in its constitution, viz., the encouragement of mountain craft and the opening of new regions as a national playground."

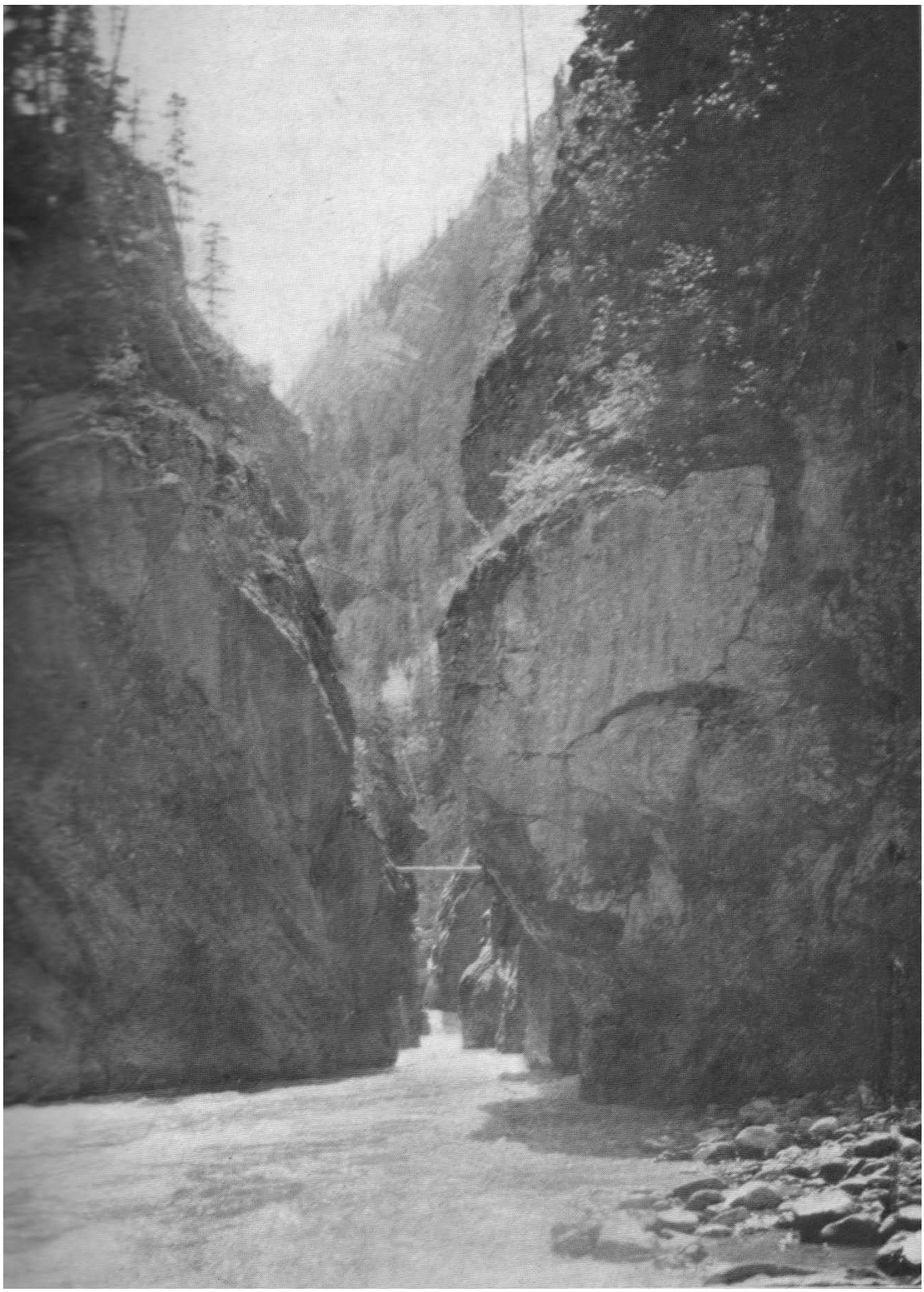
Mountaineering was not the primary object and the ascent of Robson Peak for the second time had not even received consideration. The intention was to investigate the facilities for holding one of the Club's big camps close to the great monolith and, while doing so, to make topographical survey of such area as might fall within the scope of the expedition, using photo-topographic methods as a basis of the work. Notwithstanding, some thirty peaks were climbed, ranging in altitude from 7,000 to 11,000 feet above sea-level.

The expedition was made possible through the co-operation of the Grand Trunk Pacific Railway, which contributed handsomely towards the expenses. The railway company proposed to open up the northern section of the mountains in a manner similar to that being done by the Canadian Pacific Railway in the southern section, and was naturally interested in the publicity that would ensue.

The original party consisted of the writer in charge, Konrad Kain, the Club's professional guide, Byron Harmon, the Club's official photographer, and a cook, with the transport and outfitting in the hands of Donald Phillips. Later, George B Kinney was added as an assistant.

Subsequent co-operation and financial assistance by the British Columbia, Alberta and Dominion Governments made it' possible to enlarge the scope of the expedition, and an investigation of the fauna, flora, and geology was added to the topographical work first planned. An attempt was made to interest Canadian scientists in the expedition, but without success, so the matter was submitted to Dr. Charles Walcott, Secretary of the Smithsonian Institute of Washington, who collaborate most heartily and sent a party of four to join and work with the Alpine Club.

This supplementary party was in charge of Mr. Ned Hollister, Assistant Curator of Mammals of the United States National Museum. Mr. Hollister personally looked after the mammals and Mr. J. H. Riley, also of the United States National Museum, collected birds, while both together made in addition a fine collection of botanical specimens. Charles Walcott, Jr., and H. H. Blagden were the hunters of the party, and to their lot fell the onerous duty of securing big game specimens. Under instructions of the Provincial Secretary of British Columbia, the Hon. Dr. Young, and his deputy, Mr. F. Kermode, Curator of the Provincial Museum, of the Chief Superintendent of Dominion Parks, Mr. Howard Douglas, and of the Chief Game Guardian for the Province of Alberta, Mr. J. H. Lawton, permits were granted to secure specimens of game and other animals and birds for scientific purposes. All the members of this party worked devotedly during the entire time at their disposal and made most satisfactory collections. Full reports are appended by Hollister on



Canyon Of Fiddle Creek. Photo, Byron Harmon
Chateau Miette, The Grand Trunk Pacific Hotel, Will Be Close By.

the mammals and batrachia; by Riley on the birds; and by Paul C. Standley, of the United States National Museum, on the botanical specimens collected by Hollister and Riley.

The geology of the area was to have been studied and reported upon by Dr. Charles Walcott personally, but, owing to a terribly sad bereavement, he was unable to carry out his plans for making the necessary examination. Dr. Walcott is well known in Canada. He has for years visited the Canadian Rockies and has devoted much time each summer to the study of the Cambrian rocks and of the fossils they contain. His splendid paper on "The Fossils of Mount Stephen" will be found in the Canadian Alpine Journal (Vol. I., No. 2, 1908).

To all the above mentioned the Alpine Club begs to tender its sincere thanks for hearty co-operation or hard work as the case may be. It also wishes to acknowledge specially the very practical assistance received from Dr. E. Deville, Surveyor General of Dominion Lands, and from the several officers of the Grand Trunk Pacific Railway, with whom the expedition came in contact.

The general line of travel may be described as follows: Commencing at Henry House, the eastern extremity of the survey, the route lay up the valleys of the Athabaska and Miette Rivers to the summit of the Continental Divide at the Yellowhead Pass. Thence down the valley of Yellowhead Lake and Fraser River for seventeen miles to the junction of the Moose River with the Fraser. Then up the Moose River Valley to the Moose Pass, where the Continental Divide was again crossed, and down the valley of Calumet Creek (local name Pipestone Creek), to the Smoky River Valley. The Smoky River Valley was next ascended to the Robson Pass where, re-crossing the Continental Divide, the valley of the Grand Fork River was followed to the Fraser Valley, which was ascended to the junction of the Moose River Valley. By this means a complete irregular circuit of very nearly 100 miles was made round Mt. Robson, the first that ever has been made, and all the enclosed territory was surveyed as well as a considerable area outside of it.

Again starting from near Henry House the survey was carried up the Athabaska River Valley and through a pass (Big Horn Pass) in the hills enclosing it on the east to the valley of Maligne Lake, of which, with its surrounding mountains, a survey was made.

In order to give some idea of the height to which the mountains rise above the respective valleys, it may be stated that the altitude above sea-level of the Athabaska Valley at Henry House is approximately 3,330 feet; the altitude of the Yellowhead Pass is 3,727; the Fraser Valley, at the junction of Moose River, 3,420; that of Moose Pass is 6,700; Robson Pass, 5,550; and the Fraser Valley, at the junction of the Grand Fork River, 3,000. Again, the altitude at Henry House is approximately 3,330; of the Big Horn Pass, 7,300; and of Maligne Lake, 5,525 feet above sea-level.

All altitudes here given are in feet above sea-level, are based on the levels of the Grand Trunk Pacific Railway survey, and are carried from bench-marks along the line of that survey. It will thus be seen that the climbs made range from four thousand to six thousand feet above their respective valleys. The altitudes given are the means of a series of trigonometric levels, obtained by transit readings back and forth between the stations established. Some, such as those of Mts. Robson, Whitehorn, Resplendent, etc., have no reciprocal readings, and are the mean results of a series of readings on their highest points. They are thus not definitely established, but cannot be very far from the truth. The basal distances for the triangulation were obtained from fixed survey corners of the Dominion Government and Provincial Government of British Columbia.

Route

We left Edmonton for the West by the Grand Trunk Pacific train on the 1st July. Attached to the train was the private car of W. P. Hinton, General Passenger Agent. With him were H. R. Charlton, General Advertising Agent, and R. C. W. Lett, Travelling Passenger and Colonization Agent.' I had been asked to render assistance in selecting a suitable site for an hotel to be operated in conjunction with the Fiddle Creek Hot Springs, now known as Miette Hot Springs. Mr. Hinton kindly invited me to join his party on his car, and treated me with all possible courtesy and kindness. Meanwhile, Mr. Mc-Call, the Divisional Superintendent, did everything in his power to make the party comfortable and at all times to facilitate the work in hand. Mr. McCall's good offices, backed by a letter of introduction from the President, made travelling over the railway part of the route easy.

We stayed at Brule Lake siding for three days awaiting the party, which had been left at Prairie Creek, and the pack outfit. Meanwhile, the time was spent examining the country for a suitable hotel site in the vicinity of the railway-crossing of Fiddle Creek, known to the voyageur of early fur-trading days as the Riviere de Violon.

The most desirable site was found on a terrace on the east side of the stream, a quarter of a mile from where Fiddle Creek leaves its canyon amidst the hills and winds along the more level floor of the valley of the Athabaska River. It is probably a couple of hundred feet above the railway, from which it is distant about one and a half miles. The stream, a rushing torrent, winds on the left through a border of dark green spruce. Directly opposite is Bullrush Mountain and the high hills between Moose Creek and Stony River. Closing the view up the Athabaska Valley lies the long snow-streaked ridge of Roche Suette. Brulé Lake is seen to the north and directly on the right close by rises Roche a Perdrix, known later as Folding Mountain. It is so called from the fact that the strata twist or fold, absolutely over, the apex of the fold being the crest of the mountain. In front are several terraces descending to a flat of beautiful park-like land, attractively set with picture spruce and graceful waving aspens and, during spring and early summer ablaze with flowers, amidst which the glorious orange lily (Lilium umbellatum), white and pink orchids, roses and yellow gaillardias, are the most conspicuous. Plans are already made for a splendid hotel; and here, at this eastern entrance to Nature's Wonderland, intending visitors can pause luxuriously for a spell to prepare for the more strenuous and enthralling scenes that lie beyond the massive portal. There is little doubt but that Chateau Miette will be a great favorite both as a recreation and health resort, for, doubtless, the water from Miette Hot Springs, which are said to be on a par with those at Banff, will be piped down the canyon for use at the hotel.

For records of the old travel trail from Edmonton to the Athabaska, up the Athabaska and down the Fraser it will be necessary to refer to the writings of the early fur traders: David Thompson, Alexander Henry, Ross Cox, Gabriel Franchere, Sir George Simpson and others. For later records a delightful description is given in an article written by Sir Sandford Fleming for the Canadian Alpine Journal (Vol. I., No. 1); also an account will be found in Dr. A. P. Coleman's book, "The Canadian Rockies: New and Old Trails" (Chapter XXXI., published by Henry Frowde, of Toronto).

The splendid report of James McEvoy, published by the Geological Survey of Canada in 1900, dealing with the geology and natural history resources of the country traversed by the Yellowhead Pass route from Edmonton to Tête-Jaune Cache, contains the most comprehensive and reliable geographical information that has yet been published, and also contains the only geographical map published of that route on a sufficiently large scale to be of value.

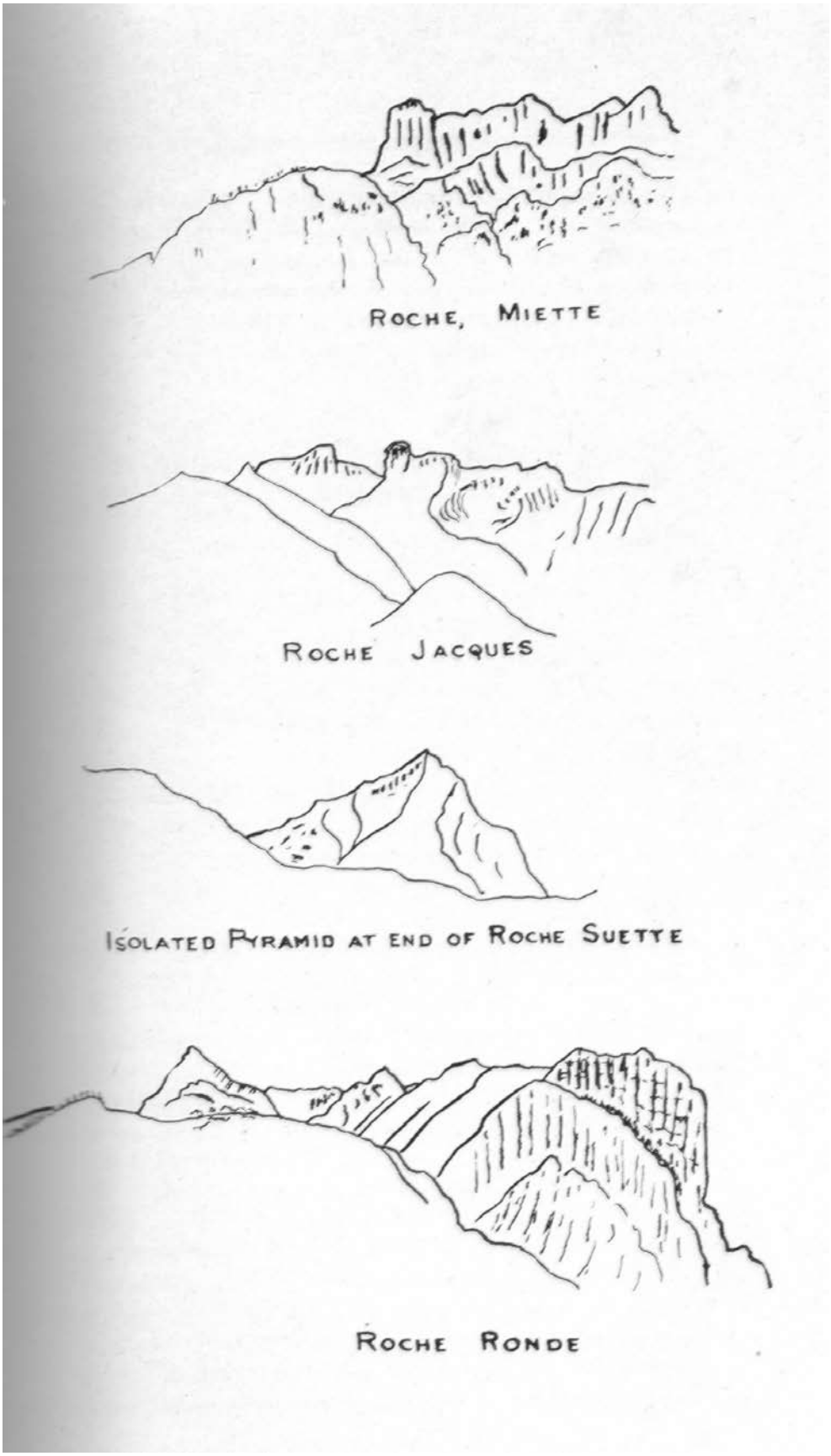
As far as we were concerned the trail had ceased to exist, Our path lay along the newly built waggon road made through this wilderness for the purpose of railway construction, and a splendid road it was, now climbing the hillside high up above the valley bottom, giving magnificent panoramas of mountain, lake and forest; anon descending and leading through dense woods beside the swiftly flowing river. There is not space here to go into all the details of our passage by this road over Yellowhead Pass and down the western slopes to Moose River; where our circuit of Mt. Robson began; all that can be done is to touch here and there upon the stronger features of the route.

At the site of the old fur-trading post, Jasper House, situated some ten miles westerly from Fiddle Creek, the Athabaska River is joined by the Stony River from the north and the Rocky River from the south. Their valleys are continuous and form one of those numerous trench-like depressions trending northwest and southeast that are such a very conspicuous characteristic of the Canadian Rockies. It cuts the valley of the Athabaska nearly at right angles. A similar instance, on a smaller scale, is found at the head of Brulé lake, where the valleys of Fiddle Creek on the south and Moose Creek on the north cut the Athabaska Valley parallel to the Stony River and Rocky River trench.

At the confluence of the Stony and Athabaska Rivers the valley is a picturesquely terraced park-like country timbered with scattered birches and isolated spruce trees of graceful form, and the ground is bright with flowers already beginning to assume an alpine aspect. The circle of surrounding peaks is very attractive, and those close by have historic names, given them long ago by the fur traders. Directly north is Roche Ronde and beyond it the Bullrush pile. At the east stands Roche Miette, rising nearly 8,000 feet above sea-level. It is a great rock mass, an upheaved anticline, similar in geological construction to Roche Perdrix, but eroded at the crest in an imposing style of mountain architecture. At the sides great rock buttresses stand out, embracing pockets of dark spruce, and, crowning all, are perpendicular cliffs broken by chimneys, giving the whole a castellated appearance that reminds one of a huge fortress with its strong tower or keep at the highest point South lies Roche Jacques, also of striking structure. To the west is Roche Suette, showing a long whaleback ridge with an imposing isolated pyramid at the north end. Throughout its length—three to four miles—the eastern slopes are traversed by .gullies filled with snow until late in the summer, which may have something to do with the name of "Fiddle Back," that seems lately to have been applied to it. I learn from the Secretary of the Geographic Board of Canada, Mr. A. H. Whitcher, that the name ‘’Suette" may possibly be a contortion of "De Smet," and that the mountain may have been originally named for the Reverend Father J. P. De Smet, the celebrated Jesuit missionary, who was at Edmonton during" the winter of 1845, and returned to the Mission near Fort Colville on the Columbia in May, 1846, via the Athabaska Pass. The accompanying sketches show the appearance of these several mountain masses as seen from our camp in the midst of the circle.

"Swift's" is a well known stopping place along the trail. Swift himself, an old prospector and miner, settled here fifteen or twenty years ago. He has since been engaged in raising horses such as are used on the mountain trails, and in growing enough grain and vegetables to supply his family. He is an encyclopedia of information concerning the country, and in his role of fairy godfather to all such parties as ours he took most excellent care of us and sent us on our way rejoicing. Later, Hollister and Riley spent some considerable time trapping in the vicinity and then gathered from this natural genius much valuable information concerning the fauna of the region.

At this point the valleys of Snaring River on the north and the Maligne River on the south



ROCHE, MIETTE

ROCHE JACQUES

ISOLATED PYRAMID AT END OF ROCHE SUETTE

ROCHE RONDE

provide another instance of the continuous trench-like valleys that cut the wide Athabaska Valley so nearly at right angles.

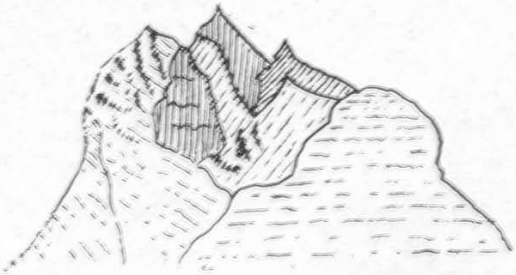
The Colin Range is directly south across the river, It rises in sharp pointed limestone peaks and knife-like edges to something over 9,000 feet (see sketch). The rock fractures are very remarkable; whole masses seem to have slipped away, leaving smooth, steeply-sloping surfaces, traversed horizontally by cracks in which large sized spruce trees have grown and appear to cling to the precipitous face of the rock. There is here a very fine example of a triple hanging valley, the partitions being composed of sharply serrated limestone ridges as shown on the accompanying sketch.

Close by, a little south of west, is Pyramid Peak, 9.104 feet Until late in the summer the north face shows a pure white pyramid, from a long distance down the valley, and it has been a landmark since the days of early travel. We started out with camera and transit to make the ascent and establish it as the first station of the survey. Unfortunately, the weather was against us, and persistent clouds enveloped the peak. Konrad and Kinney made the ascent and built a cairn on the summit which could be seen from Swift's by the aid of a glass. They vanished into the cloud belt and were not seen again until they shot out of it an hour later, two black figures on a swift glissade down a steep slope of snow. The instruments were not carried beyond timber-line. On a fine day the view from the summit displays the wide Athabaska Valley in all its glory for many miles, both up and down, and shows the network of channels in which the river flows glittering like silver threads between islands clad with dark-blue spruce.

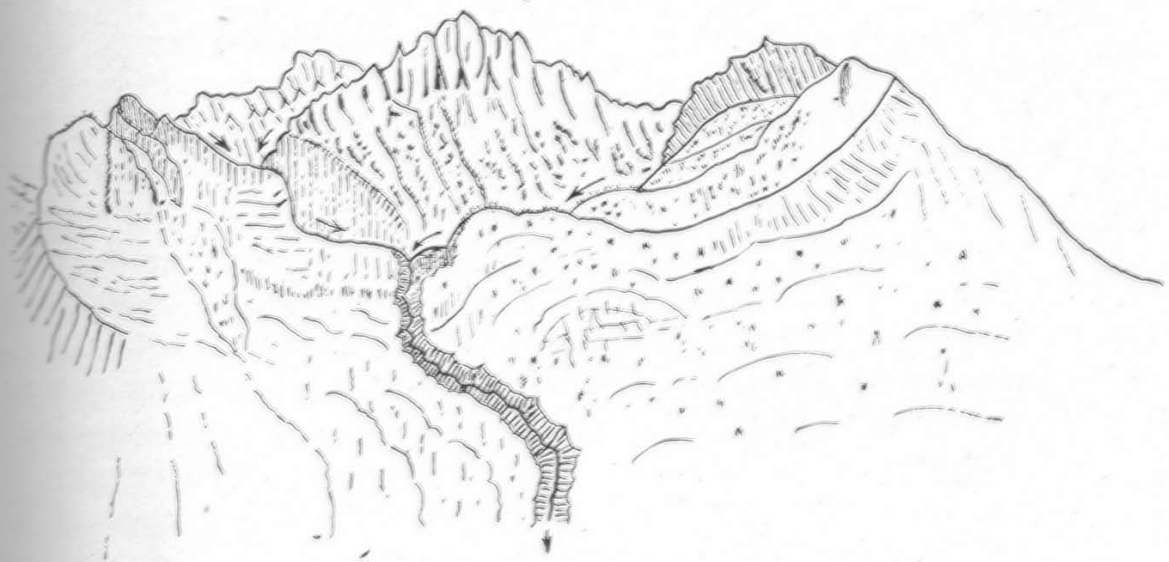
Amidst the trees on either bank were seen groups of white tents, the temporary abodes of the hundreds of humanity pouring in with the advancing of the steel. All day long a stream of freight waggons, pulled by mules, and men carrying bundles on their backs had been passing our camp, both going and coming. In the southwest lay our greatest interest. Here were numerous fine snow-clad peaks, appearing and disappearing in a most tantalizing manner amidst the drifting masses of clouds. Westward a number of beautiful lakelets, surrounded by fringes of dark green forest were of such wondrous colours that they looked like jewels in a soft setting of rich velvet.

Three miles from Swift's is the site of the old Henry House, long since destroyed. It was the furthest-out trading post on the Athabaska River, and was, in 1810-1811, in charge of William Henry, of the North-West Fur Trading Company, from whom it derived its name. He was a cousin of the well known explorer and trader of the same company. Alexander Henry, who, as a contemporary of David Thompson, more than a hundred years ago, made pioneer explorations in these wilds, where now the resounding whistle of the iron horse is heard many times a day. Seven miles from Swift's the Miette River flows from the Yellowhead Pass into the Athabaska. At the junction is the Government townsite of Fitzhugh, also a railway terminal of the Grand Trunk Pacific.

From this point the Athabaska River flows nearly due north. Looking northward up its broad valley magnificent peaks are seen. One fine wedge-shape peak rises supreme. It was named Mt. Fitzhugh, as it is in full view from what will some day be a city of that name. Mt. Fitzhugh is snow-clad the year round and has an altitude of 11,188 feet. Around its base can be seen, a snowfield supplying a fine glacier, which at our low altitude was hidden from view. There seems to be an impression in the locality that this is the Mt. Geikie of McEvoy's map. Such, however, is not the case, for Mt. Geikie lies further west and is either a peak of the Great Divide or very close to it. The altitude is placed at 11,016 feet. Another peak, rising conspicuously on the opposite side of the Athabaska, a little further up, was named Mt. Mostyn. It is a huge rock mass, snow-crowned and bearing a large hanging glacier on its eastern flank. The view up the valley is very imposing;



PEAKS OF THE COLIN RANGE



TRIPLE HANGING VALLEY OPPOSITE SWIFT'S

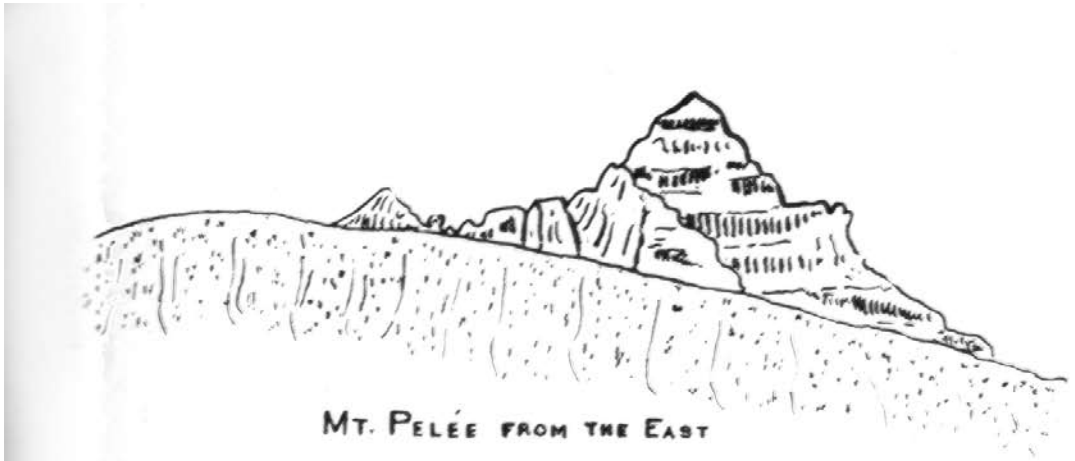
a number of tributaries come in from the west, opening up vistas of deep gorges leading back to ragged peaks and castellated towers of rock, capped by snow, that suggest great possibilities within this unknown area and look most fascinating to the mountaineer. Mt. Geikie, the reported giant of the district lay within this circle of big fellows, but could not be seen from the waggon road. Moreover, the higher peaks could only be seen at occasional moments as they peeped from the clouds that swirled and wreathed around their crests.

The road now turns up the valley of the Miette River. It is bounded by low hills and the stream winds through a forest growth of spruce, poplars and cottonwood, which hems in its milky green waters. Near this point night overtook the party while the pack train was many miles distant. Sardines, jam and crackers, bought at one of the tent stores along the road, furnished supper, and a grove of small pines and fallen poles, with which the ground was littered, enabled a shelter to be soon made. Those who were not too foot-sore slept peacefully in the genial glow of a huge fire, which one of the party had been detailed to keep going for each hour of the night. The worst was starting off on the tramp next morning without soap or breakfast.

The road keeps high on the hillsides and fine hay meadows are seen along the floor of the valley between the steep timbered hills. At one place an old river bed can be traced, winding like an emerald ribbon down the valley, a new growth of bright green grass having supplanted the once swiftly flowing water. The approach to the Pass from the east is very picturesque: a heavily timbered valley opens out with a gorge-like appearance. On the right the gravel bed of the Miette River breaks from a canyon in the hills. To the north the rock crags and precipices of Yellowhead Mountain stand out conspicuously, reminding one forcibly of Castle Mountain in the approach from Banff up the Bow River. On the south side is a blunt cone with castellated sides, and snow-crowned during the entire summer. For some reason it is known locally as Mt. Pelée. Milton and Cheadle on the map accompanying their "North-West Passage by Land," show it as "Mt. Fitzwilliam," which was Viscount Milton's family name. Yellowhead Mt. they named Mt. Bingley; probably after the town of that name in Yorkshire, where Dr. Cheadle resided. Our observations set the altitude of Mt. Pelée at 9,742, and that of the peak of Yellowhead Mt. which we occupied, one of the highest, at 8,132 feet. Like Castle Mt, Yellowhead Mt. is at the end of a long ridge composed of a number of peaks extending along the north side of the Yellowhead-Fraser Valley. The peak we climbed is directly opposite the centre of Yellowhead Lake.

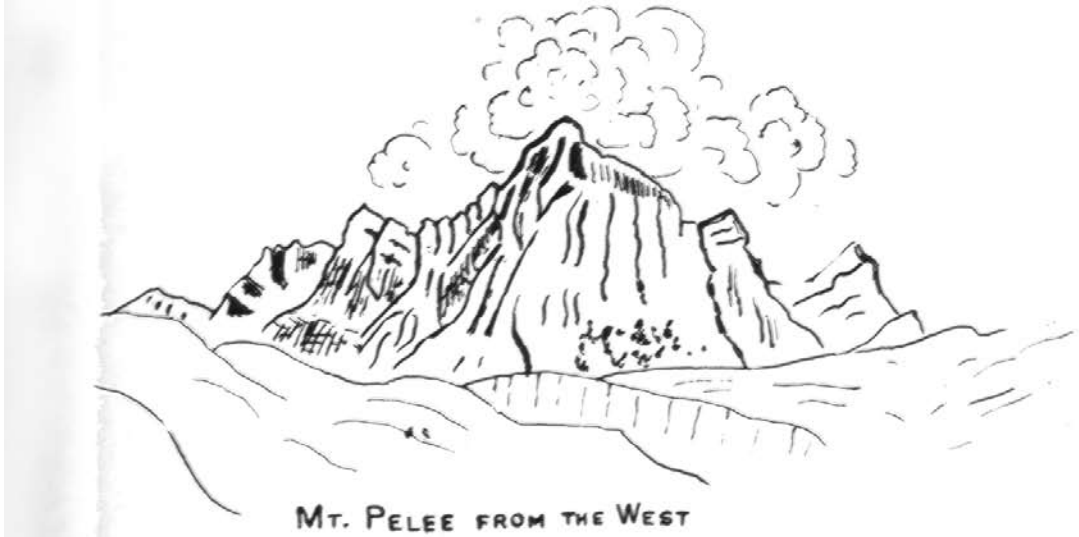
The summit of the Pass, like that of the Main Divide at Stephen, is not very attractive. The timber on the north side has been burned and is now an unsightly array of fallen and standing skeletons. It is sad to think that the beauty of this naturally charming spot has been for ever spoiled through reckless carelessness. The altitude of the railway bed at the summit is 3,720 feet, and it is nearly level for half a mile. On the eastern watershed, the Miette River, here a glacial torrent, comes from a canyon almost directly at the summit, and has cut in on the height of land to such an extent that the old channels that carried water westerly to the Pacific are still to be seen. Now, the flow has been confined entirely to the east by a line of crib-work the railway company has built to protect its property.

Summit City consisted of some three or four make-shift stores, rough log buildings with canvas roofs, as many billiard and soft drink saloons, a railway contractor's camp and a black-smith shop. The place was tough and rowdy. There was a "shooting" the night we were there, but no one seems to have been hurt. Outside of the refuse they accumulate and the despoiling of natural beauties, these places, though necessary at the time, are of little moment. They pass with the passing of the steel, and in all likelihood Summit City has passed since our party was there last



MT. PELÉE FROM THE EAST

YELLOWHEAD MT. FROM DOMINION PRAIRIE



MT. PELEE FROM THE WEST

August.

The first water flowing to the Pacific is a clear limpid brook, rising from a spring and winding through a grove of magnificent spruce; primeval trees with wide spreading mossy boughs, natural umbrellas, beneath which you may camp for days of rain and keep dry. It soon gathers headway and, fed by many tributaries, becomes a mighty and irresistible river racing down the western slopes on its way to the ocean.

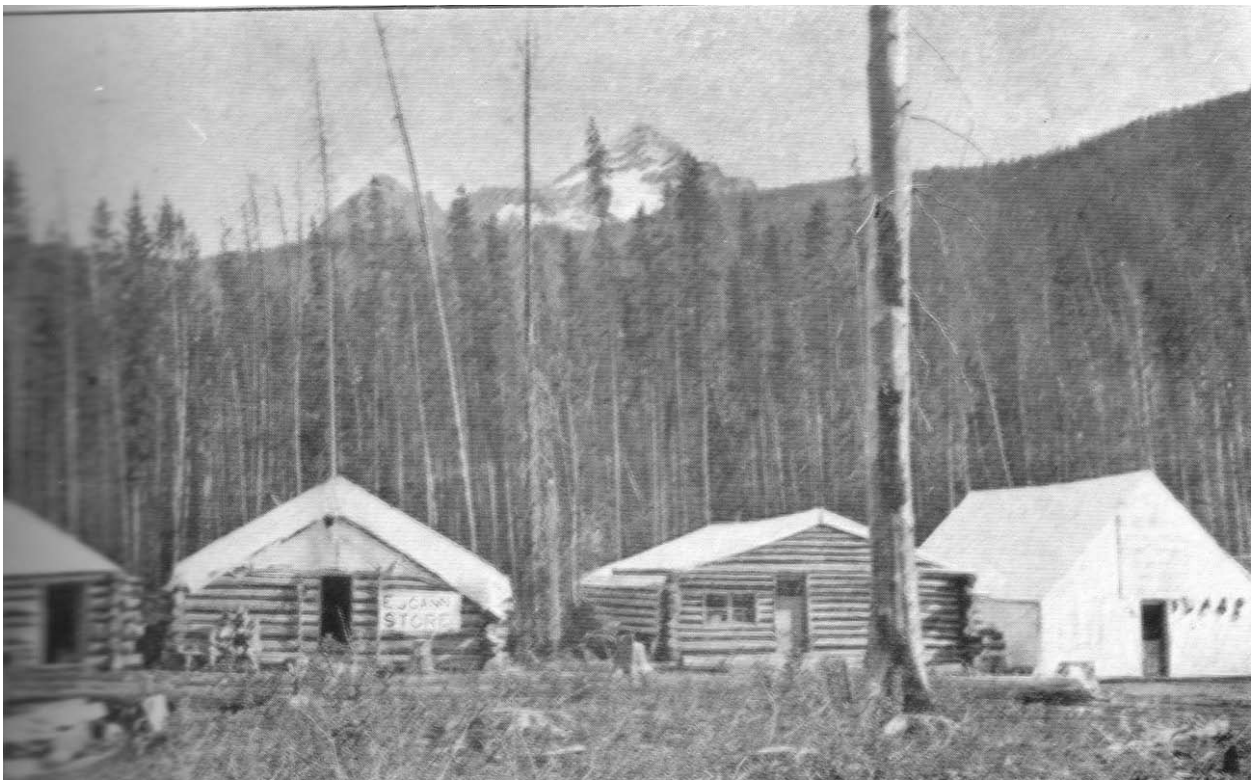
We crossed the Continental Divide, the backbone of Canada, and two and a half miles of tramping brought us to Yellowhead Lake. Of all the many lakes in the district—their name is legion and the colors of their waters varied and beautiful— this lake appeals to the traveller. Irregular in outline, it stretches for four and a half miles; its waters a creamy sap green and for the most part surrounded by dense forest. On the south side, near the centre, a fine cascading glacial stream comes in from the snows of Mt. Pelée, which stands up prominently, dominating the western approach to the summit. (See sketch.)

A mile below Yellowhead Lake the Fraser River, rising amidst distant snowy peaks, flows from the south, and its valley forms with the valley of the Moose River, ten miles further west, another of those characteristic trenches trending northwest and south-east, referred to previously as a characteristic of the Canadian Rockies. This is the fourth instance since entering the mountains from the east and a fifth is found at Tête-Jaune Cache, where the McLennan River joins the Fraser.

Circuit Of Mt. Robson

We left the Fraser Valley at the junction of the Moose River Valley, the route to Mt. Robson lying northward up the latter. At the confluence was a railway camp and a collection of saloons and bunk-houses of the log-wall-canvas-roof type, for the edification and comfort, or discomfort, of travellers. It glorified in the appellation of "Moose City," or, in railway parlance, "Mile 17." There was a good time in town that night. A new brand of "soft drink" had arrived and, about midnight, its arrival was celebrated by a violent beating of triangles and tin cans. The triangles are a feature, used by the boarding bosses to wake the men in the morning and to call them to meals. Some of the artists have it down fine and, as all the triangles are of different tone, a medley of sound is produced that, as a whole, is weird rather than harmonious. There was another shooting that night, but little damage was done. The town was chiefly remarkable for its brand of slick thieves. Konrad had his clothes stolen, almost off his back, a considerable quantity of grub was taken and the cook's stove abstracted while he sat upon it. The stove was staked at a poker game the night of the celebration, and beyond that we were unable to trace it. However, in this section one learns to accept trifles of this kind with true philosophy, which in our case meant, buy another stove, at twice the price—on account of the freight.

Moose River emerges from a canyon directly beside the railway. It is very fine and will be a most attractive feature to the travelling public. The canyon is not more than two hundred yards in length and about 150 feet deep. There are two falls near the head, of which the upper drops 50 feet and the lower 20 feet. Here the grandeur and awe of the spectacle culminates; the gorge is at its wildest, the sheer rock walls at their steepest; you are between the two falls; flying mist and spray fill the available space and eddy and circle continuously. On sunny days baby rainbows play hide and seek. I counted, at one and the same time, half a dozen at various points of view. The name Rainbow Falls and Canyon is suggested as attractive and appropriate; the more so that the mountain group, of which Robson is the dominating mass, is known as the Rainbow Mountains.



Summit City, Yellowhead Pass. Photo, Byron Harmon

Moose City, At Mile 17. Photo, Byron Harmon

The canyon is an exceptionally fine study of the action and effect of a powerful glacial torrent.

The Rainbow Mountains, where the Moose River heads are composed, in spots, of rocks showing brilliant colors of crimson, red and yellow, which, in conjunction with the blues and greens of the water, the sky, the trees and the violet haze that fills the valleys, provide most of the prismatic colors, and have possibly given rise to the name.

Several routes to Mt. Robson can be found by crossing from the Athabaska Valley to the valley of the Big Smoky River via Moose Creek, the stream immediately west of Bullrush Mt., or by Stony or Snaring Rivers; thence up the Smoky River Valley to the Robson Pass. At the present time the quickest route is by the valley of Moose River, at Mile 17, and this was the one we took on the morning of July 13th. By any of these routes there is little better than a track, worn by the pack ponies of the few parties passing along them, following often the paths of animals ranging the forests beside the streams and lakes. The trail is a very poor one, but strikingly picturesque. The day was glorious. All nature had a bright, fresh spring look, and the early flowers were only just in bloom, though it was well on in July. Every now and then vistas of a milky green torrent racing between grassy banks, walled in by spruce pine and fir, would open out and entrance the beholder. The colour of the water seemed to fit perfectly with the emerald green pines and the clear blue sky. It is wonderful how Dame Nature fits her colour schemes.

The valley was enclosed by low peaks still flecked with snow and showing great bands of iron red. At times the horses floundered helplessly through muskegs studded with moss hummocks and a scattering of stunted spruce, much to the detriment of the packs and most trying to the temper of the packers. At times like this the atmosphere is usually sulphurous, but Phillips was proof, and wore his imperturbable smile, while Jim Harvey, the assistant packer, was philosophic, if not proof.

The west branch of Moose River joins the main stream about eight miles from its mouth, and the trail follows this branch. Travelling up it we soon heard the roar of falling water, and through the trees espied fine twin falls which sent up a dense cloud of mist. A great boss of rock here divides the stream in two and it pours over a ledge in a double fall of 40 feet. Above the fall the flow is in a narrow rock trough, where the continued action of the rushing water has eroded some remarkable ledges and scoops that are worthy of note. The name “Westmoose Falls” is suggested.

A mile or two on, the valley of the west branch widens out and is covered by shingle, tightly packed in boulder clay, which has been brought down and distributed through the course of ages by the glacial torrents flowing from the icefields and glaciers at its head. These shingle flats are a distinctive feature of the northern Rockies. The same class of valley is not found in the southern section. Islands of spruce are here and there and timbered points reach out, producing a most picturesque appearance.

On fine, sunny days when the snows at the head of the many tributaries are melting rapidly, the stream spreads out into hundreds of water-channels which, seen from a height, show like a silver mesh glittering in the sun. At early morning they can be forded anywhere, but at afternoon they are rushing muddy torrents, some of which are dangerous for men, and even horses.

Camp was pitched some three or four miles from the falls in a grove of open spruce, directly opposite where the trail crosses the ridge between the west branch and the main stream to ascend the latter. The valley formation here resembles that in the vicinity of Banff, but is more strongly characterized. The original terrain seems to have broken off in great segments, which lie with long slopes towards the southwest, and with precipitous breaks, or faults, facing northeast. Both sides

SPECIAL NOTE FOR THE CAJ DIGITAL EDITION

An oversized fold-out panoramic photograph of the Resplendent Valley and Head of West Branch of Moose River was included in the hardcopy version of the 1912 Canadian Alpine Journal.

It is not included in this digital version due to size restrictions.

are pierced by a regular succession of hanging valleys at right angles to the main valley.

The west branch of the Moose has two distinct sources from which it heads: one a wide-spreading neve with a splendid ice-fall which we could see in the distance, apparently at the head of the valley. Investigation showed, however, that the main source came from a wide valley with a more western trend, surrounded by high peaks and presenting a number of fine ice-falls, which led back still further for a distance of five miles, and lay directly beneath Mt. Resplendent and Lynx Mountain.

The party now got to business. Hollister set his traps, Riley went off after birds with his gun and the hunters were already up on the crags sweeping the valleys with their glasses in the search for big game. Phillips saddled up some ponies and took the topographic party up the west branch to explore its sources and investigate the big glacier and snow-field that showed so clearly and looked so inviting, and at the same time to occupy a sufficient number of stations with the surveying camera and mountain transit that had been loaned to us by Dr. Deville, the Surveyor-General of Dominion Lands

Three miles up the valley on the west side is a tiny lakelet. The water is of an exquisite colour as you stand beside it a rich, deep emerald green. Directly behind, a high timber ridge stretches nearly across the valley, leaving only a narrow gap between cut banks for the stream to pass at the margin of the eastern slopes. This would be a charming spot for a chalet where visitors would be in touch with Nature at her wildest and best. It is about twelve miles from the railway, and undoubtedly a good trail will soon be built.

A prospectors' path led high over the ridge, near the mountain side, and descended to the western valley, which seemed to come from the very heart of the Rainbow Mountains. From the crest of the ridge, through an opening in the trees, we saw high in mid air, out-topping all around, a beautiful, apparently crystalline formation. It showed isolated, sharp and absolutely White against a sky of perfect blue, and seemed to belong to a world other than ours. It was our first glimpse of Mt. Robson

The valley in which we now found ourselves proved to be a find. It was a truly magnificent alpine one and is the main source of the west branch. Seven icefalls send their outflow to make the stream, which is joined at the outlet by the torrent from Reef Neve and Glacier. The amphitheatre at the head of the valley is directly below the southeast faces of Mt. Resplendent, Lynx Mt., and the peaks between them. On the opposite side it is hemmed in by unnamed peaks lying between it and the Fraser Valley. Below Lynx Mountain there are grand stretches of rolling alplands from which the snow was just departing and every bare spot showed a brilliant yellow owing to the number of alpine lilies (Erythronium) that covered it, while down among the graceful spruce trees that grew singly and in bunches along the margin of these meadows the white globe flower (Trollius), the pink heath and white heather were seen in magnificent profusion. Konrad, who had experience in such matters in his own land, remarked that it would be a fine place to pasture a herd of goats. Wide stretches of similar beautiful alplands may be found all through this section of the mountains. From a vantage spot on the alps, twenty good peaks surrounding the circle were counted, and these did not include some minor ones. A number would furnish excellent climbs. Below the icefalls and their moraines, a wide shingle flat, dotted with islands of timber and indented by points and bays, forms the floor of the valley. It is crossed in every direction by a tissue of silver streams, limpid brooks at early morning, rushing muddy torrents in the afternoon. It is without doubt an exceedingly fine valley and its exceptional alpine qualities and position directly below Mt. Resplendent, which here rises in great black precipices, suggested the name "Resplendent Valley," a name that subsequent

and more detailed knowledge will fully justify. The chief want now is a good pony trail to reach it. The camping facilities are splendid and, owing to the fact that the southern side is cut by several hanging valleys which reach back a considerable distance, each having its own little snowfield, glacier and waterfall to the main valley below, there is much interesting exploration work to be done, and a camping party can spend a week or more here with very great satisfaction.

The glacier seen at the head of the west branch was explored from our fly camp in Resplendent Valley. It has been named "Reef Glacier" by Dr. A. P. Coleman, on one of his expeditions to Mt. Robson. There are two fine icefalls, separated by a great wedge of rock, the arrangement reminding one much of the Yoho Glacier. Above the icefalls several long, low rock ridges rise from the surface of the snow-fields, and, doubtless, these rock reefs, or nunataks, have inspired the name. It is the glacier and snow-field visited by Hastings, Mumm and Amery in 1909, at the time of their attempt of Mt. Robson, on which occasion they had a most memorable midnight tramp to return to their camp on the west branch, not far from where ours was now placed. (See Canadian Alpine Journal, Vol. II., No. 2, pp. 6, 7, etc.)

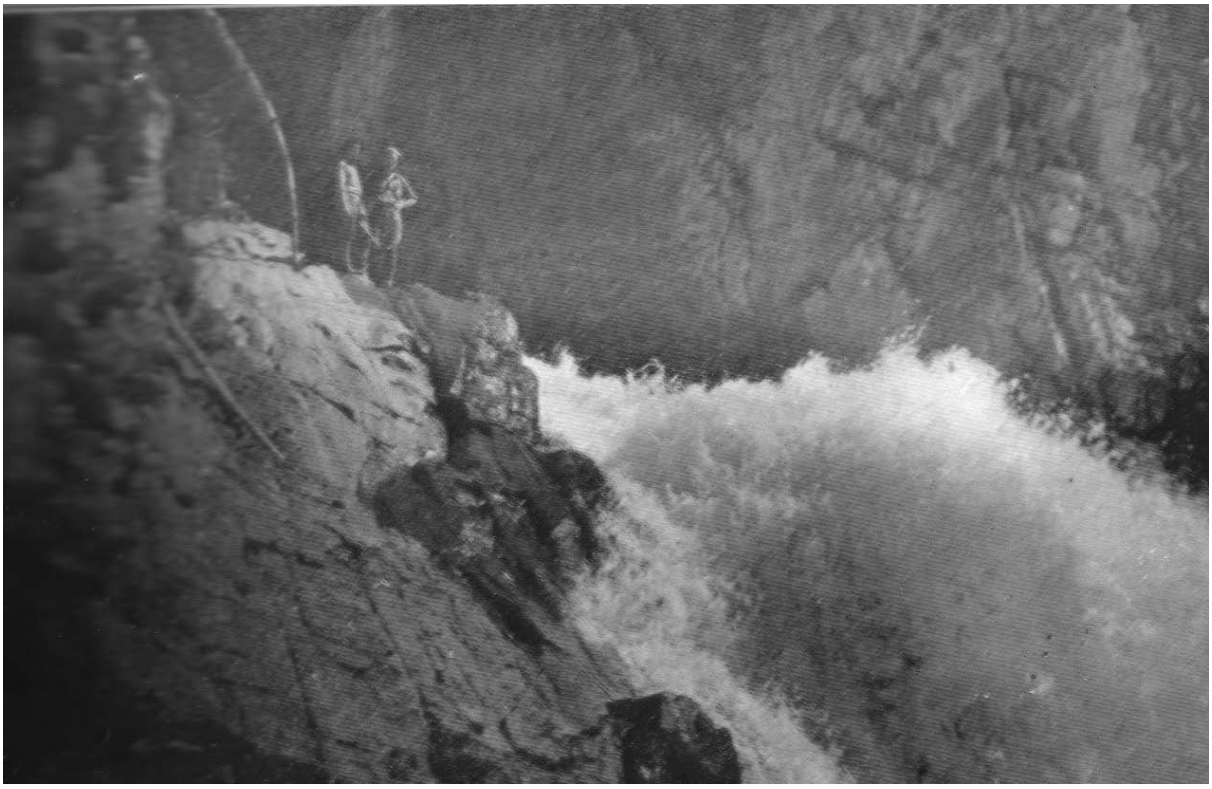
Our first ascent of the glacier was directly up the icefall, which is much broken and crevassed. Later, we discovered a snow-filled couloir on the west side leading to an easy ledge along the precipitous cliffs, thus giving ready access to the neve. Almost directly above the dry glacier is the highest point of the snow-field. You step without warning from the Province of British Columbia to that of Alberta, for here is the Continental Divide, and the waters from the Reef Névé flow respectively to the Pacific and Arctic Oceans.

We had started to ascend Lynx Mountain (10,471 ft.) which lies at the south-west corner of the snow-field. Reaching northward from it a somewhat precipitous rock wall bounds the Reef Neve on this side. It was necessary to make the ascent, a very steep climb of fifteen hundred feet, in order to reach our objective point. While doing so an avalanche fell from the heights and poured over the cliffs we were ascending exactly like a waterfall. Harmon secured a good photograph of it.

On reaching the crest of the ridge it was so late in the day that a station had to be occupied immediately or the photographs required for mapping purposes would have been lost. The station is named "Lynx Centre" (9,542 feet). A short distance south the ridge rose abruptly to the crest of the mountain, still 900 feet up. Seen from our camp on the west branch it showed a fine cone, but now stood out a huge black mass capped by snow, and surmounted by a giant cornice, which reached far out and overhung the Robson Amphitheatre.

It was a glorious day, and the whole wonderful panorama lay before us. So stupendous, so superb, so unexpected was it that we were struck dumb with amazement. Across a wide river of ice, where the most minute details of crevasses, icefalls, séracs moraines, were sharply outlined in the thin clear atmosphere rose the great massif of Robson, standing alone and rising supreme above all other peaks. Its northeastern walls, sheer drops of 8,000 feet, were in full view.

The amphitheatre of the Robson Glacier is truly magnificent At its head stands Mt. Resplendent (11,173 feet), clad from top to base in pure white snow. On a fine, sunny day this mountain presents such an ethereal brilliance that there is little wonder that the name given it by Coleman, which fits so aptly should have "hit" him. From this point of view it is a more attractive peak than Robson. Between Resplendent and Robson is a snow pass (9,700 feet) leading to the Little Fork, a tributary of the Grand Fork of the Fraser River. Above it or the west is Mt. Robson and its outliers: the Helmet (11,160 ft.) and Rearguard (9,000 ft.), names familiar through Coleman On the other side of Resplendent are several lower peaks and Lynx Mt., with Ptarmigan Mt. (9,320



Falls In Rainbow Canyon. Photo, Byron Harmon

Icefall Of Reef Glacier (Western Flow). Photo, Byron Harmon

ft.) closing the circle and forming with Rearguard a massive portal through which flowed the ice of the Robson Glacier. Between the north end of the arête of Lynx Mt., on which we stood, and Ptarmigan Mt., is a low pass of about 8,000 feet altitude, and leading from Reef Névé to the Robson Amphitheatre. From a camp on the west branch of Moose River it is an easy and delightful day to Robson Pass by this mountaineers' route, while to follow the pony trail via Moose Pass it will require at least three.

The entire amphitheatre was filled with snow and ice, rising clear to the summit of Mt. Resplendent and piled in great masses high up on the sides of Mt. Robson. Sheer ice-cliffs, broken ice-falls and enormous mounds of snow were seen everywhere on the east face, in fact snow covered the entire east and north faces except where the perpendicular rock walls made it impossible for it to lie. At one particular spot the snow masses seemed to culminate in a great rounded shoulder, behind which lay a more nearly level snow-field. It led by a comparatively easy incline to the bergschrund, which separated it from the long southeastern arête of the mountain, and showed like an irregular black line on the white surface. This rounded shoulder has been referred to by Coleman as "The Dome," and it is likely to play a prominent part in the future ascents of Mt. Robson. So clear was the atmosphere that the huge overhanging cornices lining the crests of both Mts. Robson and Resplendent could easily be seen with the naked eye, while on the snow-covered face of the latter were some of the largest and widest bergschrunds the writer has ever met with.

From an architectural point of view the southeastern arête spoils the symmetry of the mountain. It reaches like a great tail to a short distance above the pass to the Little Fork Valley where it breaks off abruptly and precipitously. It is up the east wall of the arête that the future route to Robson will lie. Coleman's second attempt was made here in the vicinity of the Dome, but he did not get beyond the bergschrund. Here also Hastings, Mumm, Amery and Inderbinen made their attempt and very nearly succeeded. They had passed the bergschrund and climbed about two-thirds of the distance up the rock wall of the arête when compelled, owing to the lateness of the hour, to return. (See Canadian Alpine Journal, Vol. II., No 2.)

A number of rock ribs and precipitous rock cliffs, where the snow sheets lie at different levels, break the perfect whiteness of the amphitheatre and give it contrast. One rock exposure has been named by Coleman "The Extinguisher," owing to its form when seen from Robson Pass. As a whole it is a magnificent cirque and one of the most stupendous alpine scenes this writer has ever gazed upon.

In the further distance, directly to the right of Robson, rose a sharp, conical peak, referred to by Coleman as "The White Horn," a name recently conferred by the Geographic Board of Canada. The altitude is computed at 11,101 feet. It showed a similar long southeastern arête to that of Robson, and appeared to be a splendid and difficult climb. At the time we were there it was not newly covered by snow and did not show white.

Twenty miles northward, out-topping all else, and clad from base to summit in a shroud of purest white, appeared a very striking mountain. Its altitude, computed from transit reading; on its highest point, works out at 10,893 feet. It can be identified from this side by its complete snow cover and by its highest eastern corner, which sticks out like a nose or horn.

Below us, deep down, we could see where the snout of the Robson Glacier rested on a huge morainal pile at the edge of a broad shingle flat, which forms the summit of the Robson Pass and continues westward to Berg Lake.

We now overlooked Reef Névé, and saw clearly the several rock reefs that traversed its length and give it the name. We also discovered that we were actually standing on the Continental

Divide, for the line of the watershed, having crossed Reef Névé, ascends a low conical peak at the extremity of the eastern arête of Lynx Mountain, continues up that mountain and turning sharply at right angles, descends its northern arête on which we stood, to the so-called Ptarmigan Pass and Mountain, from which it drops to Robson Pass.

Directly beyond rose a serrated line of peaks that will provide excellent work when we hold our annual camp at the summit of the latter pass. Between their crests, glaciers had formed and swept downward to the valley. Six were counted in this short range alone. Studying the crests of the several peaks with the telescope of the mountain transit, a rock cairn was observed on one of the highest, which stood directly across the pass, and over which the line of the watershed undoubtedly goes. Presumably the cairn was set there by the English party of 1909, or that of 1910.

Our next station (July 16th) was on the summit of the conical peak referred to as being at the extremity of the eastern arête of Lynx Mountain. This, also is on the line of the watershed and commands a splendid view of the peaks encircling Resplendent Valley. One in particular commanded attention. It rises from the centre of a snow massif, like a huge rock-finger pointing heavenward. On seeing it Konrad exclaimed, "Ach! That is my peak." So the snow-covered mass was recorded as Mt. Kain and the great rock finger as "Konrad Peak," and was thereafter referred to as the "Finger of Kain."

On the way to Reef Glacier Station we nearly had an accident. It happened crossing a steep ice slope newly covered by snow. Up to that time there had been no difficulty and we had not roped. Konrad was leading and the writer following in his footsteps. Suddenly my feet flew from under me and I shot downward, my axe scraping over the hard ice under its covering. Then I stopped. The axe had caught, but only just in time, for my legs and half my body were over the edge, and the rocks below were a long way down. I presume there was an exclamation at the start, for as I stopped I saw Konrad come leaping down the slope with reckless bounds, a look of horror in his eyes. The worst that can befall a professional guide is to lose his man. He grabbed me by the shoulder and gasped "I've got you"—and then he began to slide himself. My axe held, and we were soon on our feet and pulling ourselves together, for I must confess my nerve was somewhat shaken by the closeness of the call.

Before leaving Resplendent Valley we occupied a peak at the south-west corner of its junction with the west branch valley. It gave a magnificent view of the amphitheatre at the head and showed the glaciers flowing from the base of Mt. Resplendent in minute detail. The precipices of the mountain rose sheer to the snow-covered summit, and above could be seen the pure white crest of Robson, now wreathed by long streamers of cloud, and wrapped about with the lofty isolation that belongs to the truly great.

To Konrad's disappointment the "Finger of Kain" now showed a broad slab of rock, but it must have been a very thin one. Beneath, to the south, lay a deep valley which opened on the west branch valley above our camp. It supplies an easy pass to the Fraser Valley, to which it opens about two miles below the south end of Moose Lake. Seen from the Fraser Valley, the rock exposures at the crest show a brilliant red and, on this account, it is here called the "Red Pass. Examination from the Fraser side showed that the head of the valley below us contained some beautiful alplands and that a pony trail would be possible of construction. It would be shorter from the railway than the Moose River route. The ridge forming the opposite wall of Red Pass Valley presented some very peculiar curved strata, standing vertically on end; the couloirs were snow-filled and the impression given was that of razor blades. On this account the highest peak of the ridge was named "Razor Peak."

SPECIAL NOTE FOR THE CAJ DIGITAL EDITION

An oversized fold-out panoramic photograph of the Robson Amphitheatre from Lynx Centre Station Showing East and Northeast faces of Mt. Robson was included in the hardcopy version of the 1912 Canadian Alpine Journal.

It is not included in this digital version due to size restrictions.

Looking out over the Moose Valley the little lakelet before referred to was seen at our feet, a sparkling gem of glorious blue-green, very nearly the same colour as the so-called Emerald Lake near Field, a color for which a name has not yet been found. We called it "Lake Lazuli." Directly across the valley, separated by a low timbered ridge sprinkled by bright green meadows, could be seen the main course of the Moose River, and the point at which it was joined by the West Branch, several miles below our camp, of which the tents showed like white specks far below us.

There is little doubt that, as soon as the trails are put in and proper accommodation for travellers provided, Resplendent Valley will be a general favorite, not alone for its own sake as for the many expeditions, and explorations that can be made from it. A suitable headquarters for these would be at Lake Lazuli, an it is hoped that before long a good trail to it will be provided. The valley, moreover, abounded with wild goat and Konrad and Harmon secured two for us, which proved a very welcome addition to our larder. I know of no more revivifying tonic after a hard day's climbing than a bowl of goat soup, and the older the "Billy" the better and stronger the soup.

July 19th, we struck main camp, crossed the low timbered ridge between the two branches, where the trail passes through some abominable muskeg, and followed the right bank of the Moose River. Our path disclosed glorious vistas of green glacial torrent rushing madly between walls of spruce and pine, while overhead a sky of cerulean blue fleeced with snowy clouds made the whole seem a picture from fairyland, and set the blood coursing through our veins, almost as fast as the torrent, with the pure joy of being alive and there.

The next camp lay six miles on in some green lodge-pole pine beside a little spring pond, of which many were scattered up and down the valley. Through the pines the floor was covered with a maze of fallen tree trunks which reminded one of the game of Spillikins, where numerous small sticks are thrown on top of one another in the greatest possible confusion, the game being to remove each separately without disturbing the others—an impossible game in Nature.

Immediately above the timbered ridge, high on the end of the great spur separating the west and main Moose valleys could be seen a series of very picturesque waterfalls. There are seven distinct leaps. In the valley where the stream has its origin, Kinney discovered a rock opening which seemed to lead into the bowels of the earth. It is evidently a rift in the strata, which here dips steeply. This through the action of water, has been widened into a deep shaft leading down, goodness knows how deep.

The valley is a delightful one of the "hanging" type, with charming alp-land surroundings; scattered wide-spreading spruce trees, open slopes carpeted with pink heath and white heather and brilliant with many species of alpine flowers. Rushing crystal streams join and flow through a small rock canyon, over the lip of the valley, to make the seven falls below. The west wall is the customary fault, or steep rock cliff, characteristic of the valleys here, and patches of snow create a truly alpine effect. Immediately on our appearance, the shrill resounding whistles of numbers of hoary marmots (marmota sibila) greeted us from all sides as they sent forth (their notes of surprise, indignation and warning as we topped the crest; and there is no sound that gives a more eerie feeling than this same long drawn whistle heard unexpectedly the solitudes of the high mountain valleys. It was named Arctomys Valley in their honor. Beside the stream could be seen a number of bear wallows, where Mr. Bruin had first dug up the succulent roots and then enjoyed a mud bath.

The shaft, it can hardly be called a cave, was examined with candle, rope and barometer. The opening, a slit in shallow depression, at one time undoubtedly furnished a way exit to lower levels. It is only large enough to admit one at time. We descended 250 feet by barometer measurements a point where a small stream of water tumbles through tributary crack. Beyond that the going

Konrad Kain. Photo, Byron Harmon

is wet and the exploration was not carried further, as there was no change; the character of the subterranean shaft. Kinney claimed that at the time of his discovery, he had gone some distance beyond the fall. The crack descends at an angle of about 65 deg. or 70 deg. from the horizontal. The rock is hard and rough, and affords good hand and foot holds. In places the width is ten to twenty feet and minor cracks lead off here and there. The walls are a dark limestone, dun colored on the outside surface from seepage of the lime. There were no stalactites of more than two or three inches length, and, generally speaking it was unattractive. It appeared to be one of these subterranean waterways that are frequently encountered in mountains of a limestone formation.

This high valley, up amidst the snows, commands a glorious: outlook of forest, stream and towering peak; it is a paradise of alpine bloom and, on a sunny day, one of the most attractive of the many similar valleys to be seen in the locality. Some day, when access to it has been made by pony trail, it will be a very popular expedition.

Across the valley from our camp by the little pond, a fine-looking peak stood out conspicuously and it was decided to make it a station. On a small scale the peak resembles one on the Blaeberry River, near its junction with the Columbia, named Mt. Laussedat, after Col. Ami Laussedat, a French scientist who first brought to notice the uses of photography in mountain surveying. The station is here referred to as "The Colonel" (9,166 feet), and an ascent of it was planned.

Konrad was detailed to build a raft to cross the Moose River, flowing swiftly close by, and while this was being done the topographic party ascended the high rock buttresses that stood out prominently behind our camp to the northwest. This was not so easy as it seemed, for on reaching the crest of the ridge a deep snow-filled gorge was found to intervene, and at the foot of the snow a beautiful little lake, aquamarine in color. Crossing the gorge by a steep snow couloir the remainder of the ascent was easy. The station was a low one, but commanded fine views up the valley of Moose River and of the valleys surrounding the Colonel; also of a wide valley on the east side of the river still further north, where lay a good sized lakelet, ultramarine in color. The station was named "Trios" (8,075 feet) on account of its shape, and made a very useful one for topographic purposes.

A wet day now intervened, a considerable part of which was spent in watching a flock of ten wild goats browse on the scree slopes of a mountain directly across the river. Next day, Phillips—who was a mighty hunter—secured two for us, a very welcome supply of fresh meat.

Konrad is a grand climber and a magnificent guide under all conditions. He will, moreover, attempt anything, but this was his first raft. Instead of holding three, according to specifications, it would only hold one at a time, and the problem arose how to get across and then to get the raft back for the next man. Phillips, who is by profession a skilled river-driver, and can cross any kind of water on a single stick big enough to hold him, solved the problem by jumping on the raft and, taking one end of a climbing rope over, which he tied to a tree, the other end being made fast on our side. A looped rope hitched the raft to this impromptu cable and a second rope was made fast to haul it back. Phillips then quickly pulled himself across hand over hand, along the cable and disappeared immediately after the flock of goats seen the day before. Shouldering the mountain transit, the writer followed suit. Everything went well until the swift water near the further shore was reached, when the current bore down on the front end until the raft was absolutely vertical and its passenger had no choice but to plunge into the river. It was a simple matter to pull oneself along the cable to near the shore, but here the water was swift, deep and icy cold, and with the weight on my shoulders I could not get out. Konrad, quick to think and act instantly hauled the raft back,

jumped on board, and hand over hand arrived at the same spot, when the raft dipped again and in he went in exactly the same manner. Here were two of us on the cable and neither could get out. It was a deadlock, and we had to take chances. The writer caught on a snag down stream and did not see how Konrad got ashore, but he was there to help me out. The experiment was not repeated with the third man, as he had the survey camera, which would not have been improved by a ducking; so we cut out the cable line and let the raft run loose between ropes to either shore, a perfectly safe method, which should have been adopted in the first place: "Experimentia docet."

There was no difficulty in reaching the summit of the Colonel, and the peak made a splendid station. The view was immense. The line of the Great Divide could be traced northerly from Yellowhead Mt. to where it crossed a low watershed immediately beneath us. From the watershed a stream flowed easterly some eight or ten miles to a wide valley with a southward trend; probably the headwaters of the Stony River. All around us were seas of peaks rising high on every side.

In every direction lay small lakes sparkling like jewels in the sunshine; we counted twenty-one. They are of all possible shades of blue and green: turquoise, aquamarine, sapphire, cerulean, ultramarine, topaz. Close at hand they are delightfully picturesque; rare beauty spots with beautiful groupings of foliage around those set at lower altitudes. Above the timber line they were surrounded by all the eerie attractions of this wonder-region: precipitous cliffs rise sheer from their edges, rockfalls lie in huge blocks along their margins, glaciers bury their noses in depths so black that they seem to be bottomless. Here is the home of the whistler, whose shrill note resounds along the shores; the ptarmigan in all the glory of summer plumage struts along surrounded by her family; the little chief hare, commonly known as the pika or haymaker, skips from rock to rock when gathering flowers and scattering them in the sun to dry; and frequently the tracks of the grizzly or the caribou are seen in the mud, and now and then in their own proper persons. A very prominent peak is the Colonel. It stands alone in the centre of a large circle of peaks and ridges, and forms a splendid landmark. The north and east faces are snow-covered, and the crest and western ridge overhung by cornices, several striking glaciers descending to the valley on this side. The rock is much broken in great slanting slabs, some of which are many feet in length, and so flat and regular they look as though they had been sawed out. They are very slippery and require care when travelling over them.

The next camp was ten miles further up the valley of the main branch, its distance from the railway being estimated at 33 miles, and the move was made over a very bad trail, where one existed. The stream swings from side to side and the whole bottom of the valley is more or less in a state of muskeg, although some fine belts of woodland, with noble spruce and fir, were passed through where the trail approached the hillside. The camp was in a pretty, park-like spot, that would have been beautiful but for the standing and fallen fire-killed timber. The summit of Moose Pass lay some six miles distant. Three valleys here unite, and their streams join to form the Moose River. One from the north-east drains the snow-fields and glaciers in the cirque at the head of the extreme source, a low pass giving access in the opposite direction to a tributary of the Stony River; one from the north flows from the narrow defile known as Moose Pass; and one from the west drains a most picturesque valley, having a glacier at its head, which is referred to here as "Terrace Glacier," owing to the snow levels of its névé rising in three distinct terraces.

The north-eastern valley splits in two, one branch leading to the pass and the other to a high peak, which has been called "Mt. Upright," from the fact that the strata of which it is composed have been upheaved to an almost vertical position and show in black lines, appearing from its snow covering like ridges stuck on end. It is a very noticeable peak from many points of view, and has

an altitude of about 9,600 feet.

Eastward, directly opposite camp, a hanging valley attracted our attention. In the V of its side-slopes could be seen the top of a high peak, which subsequently proved to be Mt. Upright. The route to it lay up through burnt timber, and the slope a westerly one, was brilliant with alpine flowers: purple asters, yellow marguerites and marigolds, wild roses and geraniums, yellow columbine, Indian paint brush of all shades from yellow to scarlet, forget-me-nots, white orchis, several species of orchid and white-flowered rhododendron, while higher up on the alps, at the edge of timber line, the pink heath and white heather mingled with a gorgeous array of blue lupine, which was here at its best and grew in great clusters in every direction Still higher up were several kinds of flowering mosses: the pink (moss campion), the white and the yellow, which looked like a species of stonecrop.

Above the lip of the valley lay a belt of beautiful are graceful wide-spreading spruce trees of the kind only seen near the timber line, where Nature seems to have put all her skill in the production of grace and beauty into her last efforts or first efforts, as the case may be. Some green rolling alplands, where grazed a cow caribou with her calf, the first we had seen, led to a gem of a lake of turquoise blue, and the frequent foot-prints in the mud along the shores showed it to be a regular resort for caribou.

It was impossible, owing to delay from rain at the start, to reach the crest of Mt. Upright, so a station was occupied close by, at 9,032 feet, which was designated “Moose River Head South.” It proved to be a very useful station to locate the line of the watershed, and presented a fine view of Terrace Glacier Valley and of its icefall and the snow-field above, which proved to be part of the Reef Névé. All around was seen a chaos of peaks, the impression derived by an observer being one of an immensity of wildly broken formation. It is very complex, the chief line of structure being the great fat valleys which are intersected in every direction by hanging pocket valleys, cutting back generally at right angles to the fault valleys.

A peak in the angle between the stream from Terrace Glacier and that from Moose Pass was occupied on the 29th July. It overlooks the icefall of Terrace Glacier and the eastern side of Reef Névé. Below the icefall is a charming little green lake, and a picturesque waterfall is seen above it. On leaving the valley the stream from Terrace Glacier winds in loops like a sinuous ribbon through the parkland on which we were camped. Most prominent in this direction is the Colonel, presenting a grand array of glaciers on the north face. Beyond, are ranks and ranks of serried peaks reaching into the furthest distance, of all shapes and sizes, while here and there great snow mountains and ragged rock monarchs rise distinctively. In the north-east lay the deep trough of Moose Pass, bordered on the further side by steeply rising green alps. Where the alps become broader they are dotted with clumps of spruce and single trees; these, as the sun sank in the west, threw shadows like blots of ink on the grassland.

Moose Pass.

Moose Pass gives easy access to the main branch of the Big Smoky River. Its valley has the customary fault formation and the Reef Névé, which lies above it, on the west side, has broken through the wall, here over two thousand feet of raged rock cliffs, and sends a glacier down to the Pass near the centre, which constitutes one of the initial sources of Moose River. The altitude of the summit is 6,700 feet. It is nearly at timber line and only a few clumps of stunted and wind-twisted scrubby spruce, mere bushes, are seen scattered on the hill slopes, two or three hundred feet above it. The route through the Pass is very charming for the southern half of its course,

Camp On Calumet Creek, Below Moose Pass. Photo, Byron Harmon

From Left to Right

1. Jim Harvey	3. Konrad Kain	5. C. Walcott	7. N. Hollister	9. A.O. Wheeler
2. G.B. Kinney	4. Donald Philips	6. H.H. Blagden	8. J.H. Riley	

leading through primeval forest, which opens to grassy alps with groups and avenues of beautiful spruce trees. Everywhere was seen the handsome white-flowered rhododendron, and great clumps of blue lupine and yellow columbine grew in wild profusion. The northern part is devoid of timber, consisting of open grassland and rockfalls, with little rushing streams everywhere. At one place the roar of a waterfall is heard and, looking up, a cascade is seen apparently tumbling over the rim. Two small sky-blue lakelets are passed and at the extreme northern end of the defile is found the summit.

The defile opens to the valley of Pipestone Creek, as it is called locally, some little distance from the head. It is suggested that this tributary of the Big Smoky be known as "Calumet Creek" to distinguish it from another Pipestone Creek near Laggan in the southern Rockies. It heads in a wide amphitheatre surrounded by five glaciers that would have been found of great interest had there been time to examine them in detail.

Three stations were occupied in this vicinity. To reach the first we again crossed the watershed by a little pass lying at the head of a glacier immediately east of Moose Pass. Descending a snow-field on the British Columbia side, the eastern wall was climbed and a high point on it occupied. It opened up to the east a snow-filled cirque and a number of valleys leading to a wide timbered one with a southerly trend, which we supposed to be the headwaters of the Stony River. In this direction the quantity of snow and ice diminished greatly and long knife-like ridges and bare limestone peaks gave the scene a distinctly grey stone. The station is known to us as Stony River Head (8,941 feet).

The second, Calumet Peak (9,760 feet), was on the north side of the amphitheatre, and had been prominently in view from previous stations. A glacier that heads on its north face and sweeps westerly around its base made the ascent an easy one. It would have been a splendid station but for a snow storm while on the summit; even so, glimpses were had to the north of deep valleys lined with glaciers; a wide snow-field lay below us to the west and, beyond the Smoky River Valley, peaks, glaciers and snow-fields innumerable met the eye through openings in the drifting snow clouds. Eastward a wide timbered valley disclosed the trough of the main branch of the-Stony River.

The third station was on a low conical rock peak, easy of ascent, but very central and commanding a glorious view in every direction. Westward, across Reef Neve, the view was superb—magnificent. The Lynx, Resplendent, Robson and Whitehorn all showed clear, and above them cumulus clouds bunched in great white masses. Robson alone had a few whisps of scud hanging to its crest. I got my first really good sight on the summit, which seems to be a snow dome, probably the crest of a huge cornice. In the V of Robson and Whitehorn appeared a vista of snowy peaks as far as the eye could reach: cones, black masses, pyramids and domes; none so high as Robson, but conveying an idea of immensity and the never ending beyond that was appalling. It is a peak of the Continental watershed standing at the opening of the Moose Pass on the west side, and is recorded as "Moose Pass Station" (8,817 ft.). The line of the Divide is very intricate from the Colonel on. It zig-zags back and forth in a series of irregular loops, each containing a snow-field and glacier, sending the waters flowing from them alternately east and west.

Having crossed the Moose Pass summit, the Divide line climbs to Moose Pass Station and then twists back south again many miles to cross Reef Névé and climb Lynx Mt., when it again turns northward to Robson Pass.

The new camp, July 30th, lay near timber line on the south side of the Calumet Valley, about a mile from the Pass. It was decidedly the most beautiful camp of the expedition, 6,170 feet

Charlie Walcott's First Caribou. Photo, Byron Harmon

by aneroid. Far below, a gravel flat, cleft by many a silver stream, shows the road to the Big Smoky flowing north. All around are green slopes rising upward, dotted for a short distance only with open spruce, for we were almost at timber line. Behind, the peaks tower like great sloping slabs and in front are rock monsters rising in castellated form, their tiers and terraces marked by snow on the ledges. The spruce are those picturesque trees found at the edge of the alps, each of which constitutes a home in its umbrella security against inclement weather. It was one of the camps that are a joy to all who delight in Nature; where the greens are brighter than ever before, where rare and beautiful flowers form a many-hued and much-patterned carpet and heath and heather grow in your tent. Here you sleep on balsam brush that outrivals the best of mattresses and has a fragrance and aroma only had at tree-line. In the mountains everything is best or worst and this would have been a paradise but for the mosquitoes, which ceased not day or night. The sun on the snow, the gleam of the ice, the rush of the torrent, the smell of the balsam, the precipices, the waterfalls, the roar of the avalanche infect the blood and carry you back sub-consciously to prehistoric days; the days when we lived in the wilds and fastnesses of Nature, eat when hungry, drank when dry, slept when tired, and feared only the wilder and stronger beasts who had a life partnership in them.

On the way through Moose Pass, Charlie Walcott and Blagden had shot a magnificent grizzly, and while here at this camp, assisted by Phillips, who was a skilful and tireless hunter, they tramped the mountain sides after caribou, which were frequently seen. Their efforts were rewarded and they secured six specimens, of which one was a magnificent buck with horns in the velvet. In consequence, they were much delighted. Hollister and Riley also were in clover. Splendid catches in the traps and good hunting of rare species of mammals and birds on the alps filled their days. So satisfied were they that it was decided they should remain in camp here and await the return of Phillips from the Robson Pass when the topographic party had been left there and he was on the way back to Moose City; for, owing to impossible cliffs on the Pacific side, it would be impossible to take the ponies the complete circuit and they had to go round to meet us again by way of the Grand Fork tributary of the Fraser. The distance from the railway by existing trail to the Moose Pass camp is about forty miles.

Camp was now moved down Calumet Creek to a nice place in the pines, not far from its confluence with the Smoky River. The open timbered park-lands gave place to a wide shingle flat between steep hill sides where many streams glittered silver in the sunlight; then thick woods filled up the valley The old blazed track known as the Yates trail, because it was made by a packer of that name, kept high up through the timber until it worked out on the crest of a ridge. Phillips and Harvey had blazed a route of easier grade lower down and now followed it with the ponies.

The Yates trail comes out in an open at the highest point. It might well be called "Exclamation Point." Looking south in the V of the valley, Mt. Resplendent stands a great white cone, clad from head to foot in eternal snows. Below, to the left, Yates Torrent issues from the forefoot of Coleman Glacier, a splendid icefall, the main northern outflow of Reef Névé. Northward, the Big Smoky winds in many a shining-channel through broad shingle flats and wide stretches of forest, bordered by dark brown peaks showing the openings of numerous tributary valleys—all inviting the explorer and hiding alpine treasures as yet untold. The scene holds you even though you may be surfeited by the splendours through which you have already passed.

August 4th, we forded the Smoky River and started to explore a valley directly opposite the Calumet opening. It led to a snow-filled amphitheatre, at the head of which stood a wedge-shaped peak that it was desirable to occupy as a station. We carried packs on our backs and intended to sleep that night somewhere on the mountain side.

Robson Glacier, Robson Pass And Berg Lake From Mumm Peak Showing Northwest Face Of Mt. Robson. Photo, A.O. Wheeler

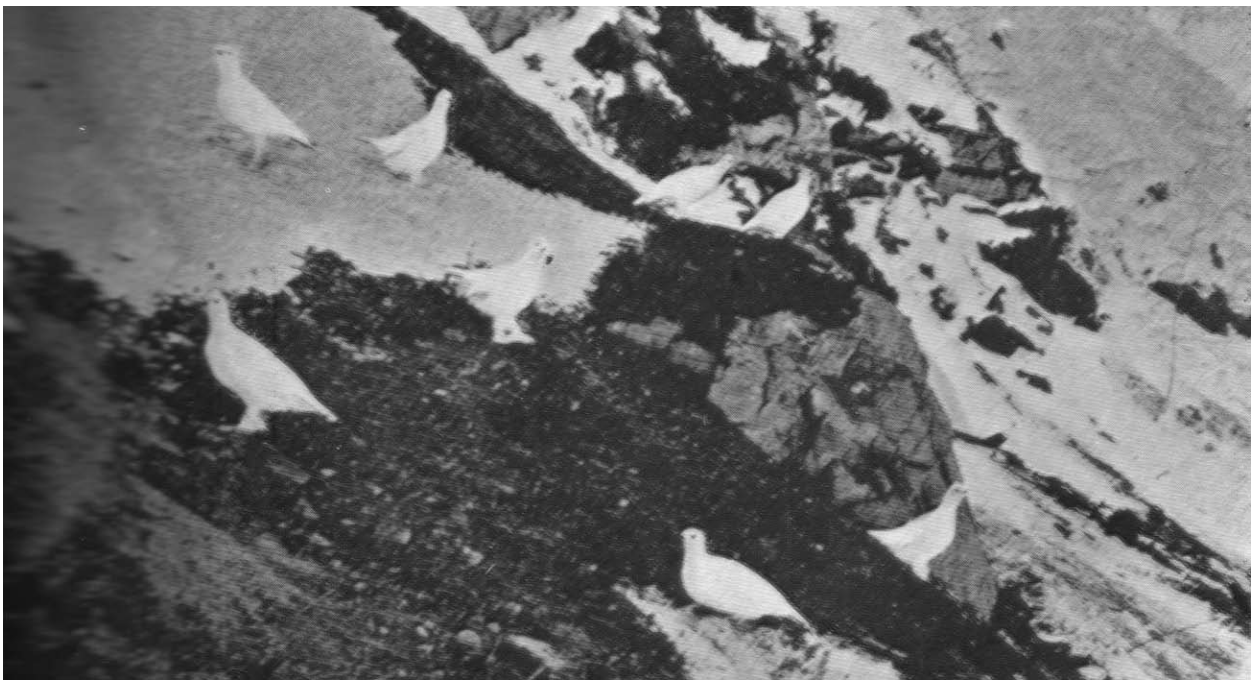
Owing to a peculiar isolated rock pillar that rises from its eastern arête, the peak has been referred to here as "Mt. Gendarme," the view from the summit was of tremendous interest on account of the new features it disclosed. Unfortunately, the weather was inauspicious and the tops of the higher peaks were in the clouds. Twenty miles north, but apparently close at hand, showing through the gloom like a ghostly wraith, could be seen the great white mountain that pokes an enquiring nose eastward. Directly in front, so as to almost appear part of it, stood a black rock mass, conical in form but with the apex of the cone shorn off. It is the peak climbed last summer by Dr. Norman Collie and A. L. Mumm, accompanied by the guide, Inderbinen, and named by them "Mt. Bess" (see article by Dr. Collie, Alpine Journal, February, 1912, No. 195). In structural formation it appears to greatly resemble Mt. Robson, and the numerous unscalable precipices at once challenge a comparison, but the blunt snow top ends the simile. Here is a snow plateau, which, Mr. Mumm says, is nearly level and must be fully a quarter of a mile across. I have computed the altitude at 10,468 feet.

The wide valley of the Big Smoky could be seen for many miles and, between Mt. Bess and the great white mountain, a large tributary valley which leads across the Continental Divide at its head to the Beaver River, a tributary of the Fraser. Donald Phillips, who, with Konrad Kain, spent part of the past winter (1911-12) trapping and exploring in the locality, writes me: "We did a lot of exploring this winter up in that country and found two more passes to the Stony River, but they are too rough at present to go over with horses. We also discovered two passes from the Smoky to the Beaver River, that flows into the Fraser. They are easy on the Smoky side, but, like the Robson Pass, drop away on the Fraser side. There are no cliffs, only very steep side-hills and rock-slides, and no horse feed; so that, as far as I can see, the Grand Fork Valley will be the only possible route to get into that country in the future, as it is the shortest. The Beaver River is about forty miles long. The big white mountain is a false alarm, when you get close to it, and you can walk right to the peak on snow-shoes. It is only a long snow-covered glacier. But the mountain that looks like Mt. Temple (Mt. Bess) is a fine mountain. I was around three sides of it and did not see any place that it would be possible to get up."

On the north-west, Mt. Gendarme dropped steeply to a very delightful looking valley with a semi-circle of tremendous glaciers at its head, which showed a wild confusion of ice and snow. There must have been at least half-a-dozen ice-falls in this comparatively small circle. Their snow-field stretches westward many miles, reaching sheer to the summits of the peaks and climbing in great facades to the topmost pinnacle of Whitehorn, which from this side seemed well named.

The scene in its snowy whiteness and wildly broken surface reminded me forcibly of that from the summit of Mt. Dawson in the Selkirks. This area of snow seemed to culminate in a central high peak (10,530 feet), which I named Mt. Longstaff, after the well known mountaineer and explorer, Dr. T. G. Longstaff. The valley is a very beautiful one with green alp-lands, shining silver streams and two large ponds visible beside them. It drains to a larger timbered valley trending N.W. and S.E. to the Smoky River. Phillips has named the stream in the valley below us "Wolverine Creek."

The glacier up which we had travelled, leading to the snow-filled cirque south of Mt. Gendarme, is of much interest; the ice is thickly veneered with stones and is strewn with glacier-tables, and with numerous perfectly formed sand-cones, reaching a height of five feet. Most striking, however, is a great ice wall, 400 feet high, that separates the neve from the dry glacier and reaches right across it. The moving ice-field above flows over this cliff and sends down fragments to litter the floor of the glacier below. It is referred to here as the "Mural Glacier."



The Snowbird Of The Peaks. Photo, Byron Harmon

Harry Blagden Has A Good Day. Photo, Byron Harmon

The peak on which we had espied a cairn from Lynx Centre Station stood at the south side of the amphitheatre, opposite Mt. Gendarme. It had the fault formation on this side and rose in tremendous precipices sheer from the snow. High up a band of narrow crimson strata ran the whole length of the face and looked like a ribbon following the inequalities of the rock surface. The line of the Continental watershed passes over this peak and follows the rock ridge bounding the snow-field on the south. In the wall, a narrow gap furnishes a mountaineer's pass, 300 feet above the floor of the amphitheatre, and enabled us to connect with our camp, which had been moved up the Smoky Valley, across Robson Pass and down Grand Fork Valley to a mile or so below Berg Lake.

The little pass opened directly to Mt. Robson and led over a glacier to the slopes surrounding Berg Lake. The scene that met our view is best described from the summit of the peak of the cairn set by Collie, Mumm and Inderbinen in 1910, which we ascended a few days later. It has been christened "Mumm Peak" (9,740 feet). From the summit the scene beggars description. We looked to the northwest face of the Massif, which rose supreme in the centre of the view. If one is lucky the hoary crest is free from clouds, which is not often the case. On this side, the whole face appears to fall, sheer, thousands of feet in tremendous rock walls and tiers of precipitous cliffs, far too steep for snow to lie. On the north shoulder rests a mighty ice-field, crevassed and broken in every direction, and frequently changing its form owing to the ice avalanches that come crashing down from the giant cornices lining the supreme crest of the mountain. From its centre a rugged rock ridge protrudes, of which the highest peak (11,160 feet) has been named "The Helmet" by Coleman from a fancied resemblance to an old Roman headpiece. The ridge ends in a semi-detached mass, aptly named by Coleman "Rearguard" (9,000 feet). From this elevated ice-field, fed by avalanching snows from the sides of Robson, a gigantic ice cascade tumbles down rock precipices and buries its nose in the blue waters of Berg Lake. Often, great chunks of ice break off with reports like cannon, and go leaping down the steep incline to plunge into the placid waters of the lake. Sometimes, the chunk is so large and falls from so great a height that it sends a spout of water twenty to thirty feet into the air and the waves caused by the upheaval wash to the further shore. Imagine a lake a mile and a half long by three-quarters of a mile wide, of perfect turquoise blue, filling the whole floor of the valley, its surface dotted thickly with miniature ice-bergs, which show white against it and drift higher and thither as the wind directs. The altitude of the lake is 5,506 feet and the ice cascade falls 5,000 feet from its source between the main mass of the mountain and the Helmet. Two well-formed lateral moraines protrude into the lake like horns and indicate a period when the bed was filled with ice. Coleman has named the icefall the "Blue Glacier." The term is not strong enough to represent this broken and exceedingly active cascade of ice. "Tumbling Glacier," though not so euphoniously pretty, is a more suitable name to express the activity of so unique a feature.

A little further southwest, just beyond the end of the lake, a second icefall comes down from the same source. It is much shrunken and neither so spectacular nor so active as the first one, but the rock detritus it has eroded from the Massif and carried down forms, together with a similar supply from a glacier exactly opposite, on the other side of the valley, a natural dam which holds the lake. Through this dam the outflow has cut a channel which is the initial source of the Grand Fork of the Fraser River.

On the opposite side of the Robson Glacier is a rock mass of similar construction to Rearguard. It has been named Ptarmigan Mountain by Coleman, from the numbers of this species of grouse—Snowbirds, they are called by the hunters, prospectors and packers, from the fact that in winter they are pure white and their habitat is at snow line—seen on the alplands below them.

Mt Robson And Berg Lake. Photo, Byron Harmon

Unfortunately, there is already a Ptarmigan Peak, Pass and Lake near Laggan on the C.P.R., and this name will require a change. Snowbird Mt. and Pass might be substituted. The altitude is 9,154 feet. Between the two, flows the Robson Glacier, describing a wide circular sweep around Rearguard. It is five miles long and three-quarters of a mile wide where a well defined ice stream. It is generally easy to travel over though much crevassed in its upper reaches.

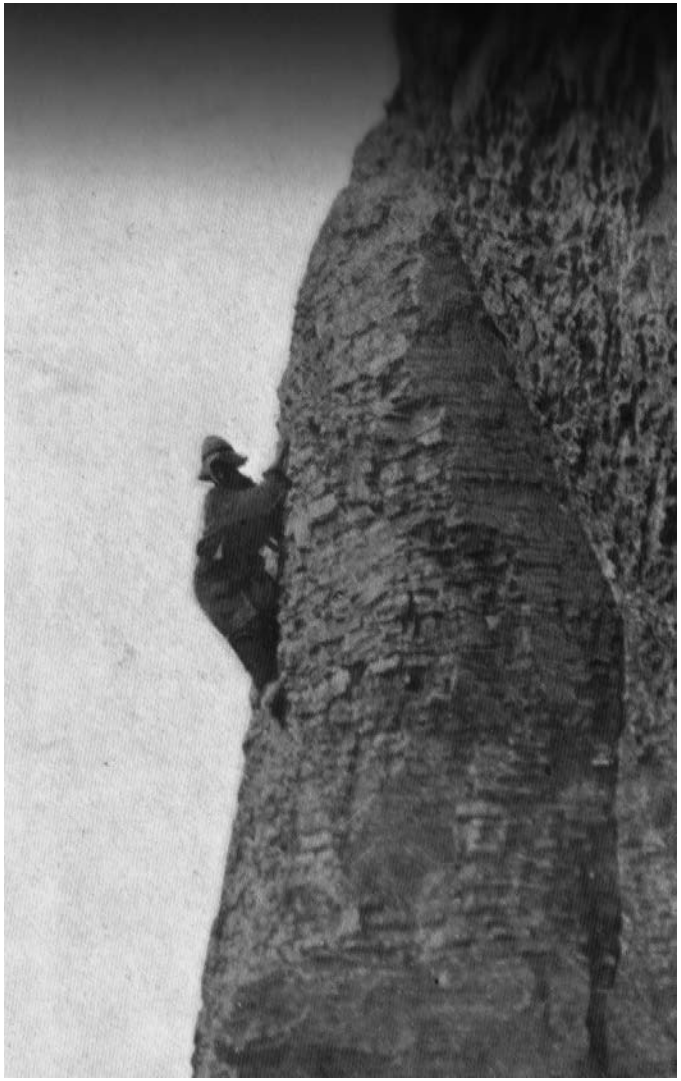
Angles were read and photographs secured from two Stations on Ptarmigan Mountain—one overlooking the valley of Robson Pass and the other at the highest point, with altitudes respectively 9,154 and 9,320 feet. Like Rearguard, the north face rises in tiers of precipitous rock cliffs. Below them, nestling in a setting of dark green spruce and scintillating like a royal blue gem is the delightfully picturesque little Lake Adolphus, which forms the source of the Big Smoky River flowing from Robson Pass. Midway of the lake is a tiny tree-clad islet near the southern shore. It was named by Coleman after Adolphus Moberly, a native packer whom he had with him for a time on one of his expeditions. Beaver-cutting was seen around the shores and one or two of the animals were noticed swimming in the lake.

Between Lake Adolphus and Berg Lake lies the Robson Pass, altitude by trigonometric levels 5,550 feet. It is a very nearly level shingle flat of a little over a mile in length formed by the wash of rock detritus from Robson Glacier. The western side is partly covered by a growth of stunted spruce and scattered scrub. The two lakes are in sight from the Pass, and lie at nearly the same level, the altitude of Berg Lake being 5,506 feet and that of Lake Adolphus being 5,523 feet.

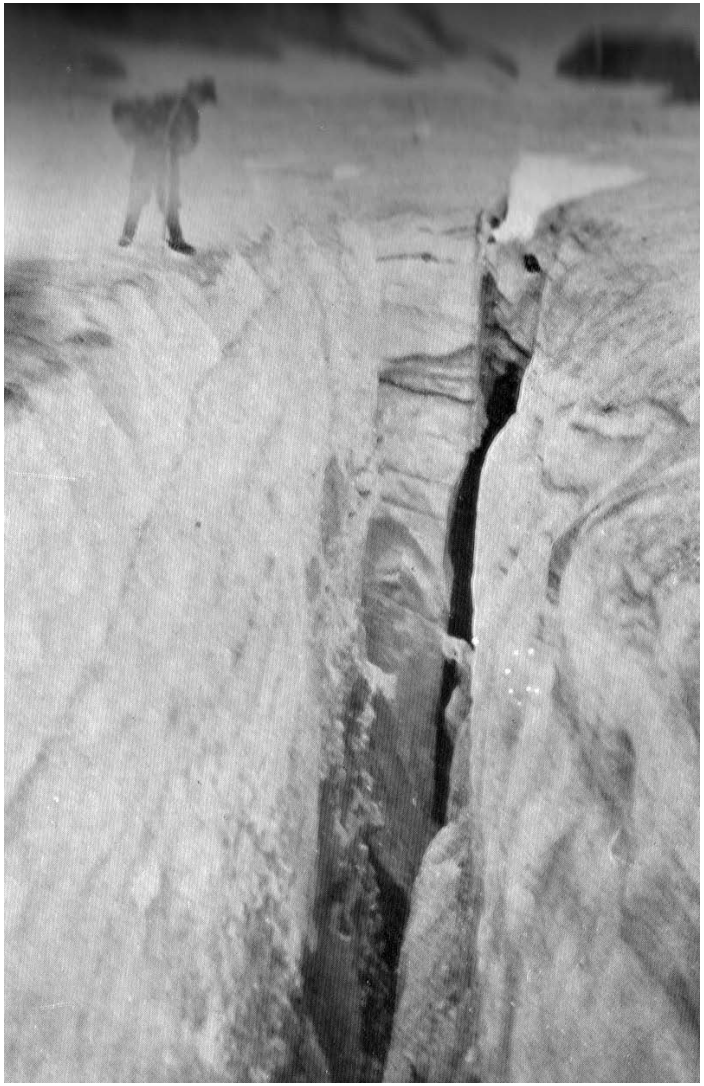
The ice forefoot of the Robson Glacier is divided into two lobes by an eminence of hard rock—a nunatak—that has resisted the eroding action of the ice. It rises 100 feet above the pass and the forward shove has piled it up with morainal debris. Sheltering under its abrupt north facade is a little grove of spruce that gives it a picturesque charm as a feature of the foreground. The trees, though stunted and of little stature, have a great age. Coleman, who camped in this grove for a considerable time counted 240 rings of yearly growth in a tree cut down, and estimates the age of the older ones at 400 years. Glacial torrents flow from both portions of the ice-tongue.

It has been stated that the Robson Glacier is partly in Alberta and partly in British Columbia, and that the line of the Continental watershed passes down the ice. I did not find this to be the case. At the time we camped at Robson Pass—a fly camp for three days, August 7th to 10th—by far the largest part of the run-off of the glacier was from the western lobe, and flowed to Berg Lake on the Pacific side. There was a comparatively small stream from the eastern lobe, of which the greatest part also flowed to Berg Lake. At three points small streams separated from this eastern flow and made their way to Lake Adolphus on the Atlantic side. Likely, during very hot weather, when the ice was melting rapidly, the would be a much heavier flow, but by far the largest part the forefoot now lay to the west of the nunatak, and it did not seem probable that the bulk of the outflow could go otherwise than to Berg Lake; although both Dr. Coleman and Dr. Collie state that within their experience it has done so.

After leaving Lynx Mountain, the line of the Divide follows the ridge over Ptarmigan Mountain, and descends the crest of its north-western spur to within a few hundred feet of the low rock eminence referred to, which would seem at one time to have been part of it, and to have been cut off by the action of the ice. The Divide now crosses the shingle flat and climbs Mumm Peak, from which it follows westerly the ridge enclosing the Mural Glacier. The eastern stream passes through this narrow gap and the rush of water appears to have cut in on the height of land, following along its crest for a space and sending several small channels to Lake Adolphus. Under



Konrad Rounds A Bad Corner. Photo, Byron Harmon



A Crevasse On Robson Glacier. Photo, Byron Harmon

conditions as I found them I should say that the Robson Glacier is wholly in the Province of British Columbia.

The station on Ptarmigan Mountain was a splendid view point. Mt. Robson was clear from base to summit, and Konrad picked out what he considered a feasible line of ascent. The route selected lay up the glacier to the foot of the Dome and, by a steep rock rib protruding from the surrounding ice-falls, to the snow-field leading by an easy gradient to the bergschrund at the base of the precipitous rock wall that forms the south-eastern arête. The bergschrund presents a great yawning crevasse, and will likely be a serious difficulty; but once passed he claims that the wall of the arête can be climbed, and this was demonstrated by Hastings, Mumm, Amery and Inderbinen in 1909, on their very nearly successful attempt on the mountain (see Canadian Alpine Journal, Vol. I., No. 2, pages 1-20). How nearly they were successful they did not know, as the lateness of the hour forced them to return. Had they reached the crest of the arête there would have remained but a long and apparently easy snow-slope leading direct to the summit. Konrad says that the day will come when the ascent will be made in eight hours from a camp at Robson Pass. I cannot concur in this estimate, but I do think it will be done in one day from a camp on the alps below Lynx Mountain, directly across the glacier from the Dome.

Mt. Robson

In an article written for the Canadian Alpine Journal (Vol. II., No. 2, page 108), Dr. Coleman states that: "The mountain as a whole is built of nearly flat-lying limestone resting on quartzite, the latter rock showing only on the south side, where the Grand Forks River and its tributaries have cut most deeply. . . From a structural point of view, Mt. Robson represents the bottom of a syncline or basin, with gentle inclination from all sides. The more expanded and shattered forms around it, once probably parts of anticlines, have suffered far more from the destructive forces than the slightly compressed and, therefore, strengthened parts of the syncline. In both rocks and structural features Mt. Robson is a very simple type. It is surrounded on three sides, northwest, southwest and south, by deep valleys, from which it rises in splendid unscalable cliffs. On these sides erosion is going on rapidly by the action of frost and weather, while the rivers are cutting back their canyons to the northwest and northeast."

As a result of my trigonometric levels, the altitude of Mt. Robson is here computed at 13,068 feet. It is derived from transit readings taken at three distinct bench-marks at wide intervals apart—placed by the engineers of the Grand Trunk Pacific Railway—upon signals set on the adjacent peaks bordering the Fraser River Valley. The elevations derived were then carried from summit to summit to the highest point of the mountain. In one case the reading from the bench-mark was directly upon the crest of Robson. The deduction is not absolute. It is impossible to make it so where no distinct signal, such as a rock cairn, has been sighted upon; and none can be placed on Robson, as the summit is covered by an immense snow cornice. Altogether, five sights were obtained on the crest from other summits, of which the altitude had been obtained through sighting on rock cairns built upon them, and one from the bench-mark referred to. Two of these were discarded as uncertain, as they had been carried for long distances. McEvoy established a height for Mt. Robson of 13,700 feet, but I do not think that any systematic series of observations were .employed by him. It is the fate of great peaks to have their reputed heights brought down, and I fancy that more extended observations will find Robson no exception to the rule. The Massif with its glaciers and glacial lakes covers an area of over thirty square miles and measures three miles through at it base where it rises one and three-quarter miles into the air above the Grand Fork

Valley.

When the circuit of Mt. Robson becomes an established route through the building of a pony trail by the Moose River Smoky River and Grand Fork valleys, it is likely that a chalet or a commodious hut will be built on the Berg Lake side of the Robson Pass, in full view of the Tumbling Glacier, where visitors may sit at their ease and see the ice fall into the lake as the avalanches come crashing from the heights. For magnificence of alpine scenery and grand spectacular effect this particular spot is unique in the Canadian Rockies. I have already selected a camp site for an Annual Meet of the Alpine Club of Canada and, as soon as a trail up the Grand Fork is available one will be held there.

It is only by spending some time in the close vicinity of the mountain that its wonders and various phases are seen. The peak is generally clear at early morning and clouds up by nine o'clock. On August 8th, we had a glorious view from our camp at the Pass while at breakfast. The mountain rose like a creation in crystal sugar into the clear blue sky and the rising sun colored the snow a delicate pink; across this lay a straight black band, perfectly regular and probably cast by some stationary cloud; below the band the pink slowly deepened to a full rosy glow and then turned brilliant gold, finally fading to silver; next the Helmet caught it and became a wonder-world of rose and golden towers and palaces; and then a great rolling-mass of fog came up the Smoky Valley and poured into the Pass, obliterating everything and casting a wet blanket over this glimpse of fairyland.

Sad to relate, all along the north side of Berg Lake the slopes are disfigured by the gaunt and whitened skeletons of fire-killed timber. They have, however, one redeeming feature: the ground is ablaze with alpine flowers. I never before saw them in such profusion and brilliancy, and all species were larger and finer, and in greater quantity than anywhere else we had met them. Our Smithsonian confreres made a good collection of the flora and have reported upon it.

The name "Robson Peak" dates back to 1863 on the map accompanying Milton and Cheadle's book and must have been given some time before then. I have been unable to trace its origin with any certainty. It is said to be after the Hon. John Robson, but at that time he was an obscure printer, publishing a newspaper at New Westminster, B.C., and did not become Premier of British Columbia until 1889. Here is the story; I give it for what it is worth:

In or about 1861, Mr. John Robson. who was Premier of British Columbia from 1889 to 1892, was editor of a paper published at New Westminster, named "The Columbian," or "British Columbian." While editor he printed in his paper an article upon Mr. Justice Begbie at which the judge took umbrage and committed Mr. Robson to prison for contempt of court. While in prison, Robson published the best editorial he had ever written, which was headed "Lines from a Dungeon Cell," or some such title. Robson's imprisonment caused quite a mild sensation at the time and, therefore, to perpetuate the memory of Judge and Victim the mountain peaks bearing their names were called after them. Mt. Begbie is on the west side of the Columbia River, a few miles below Revelstoke.

A more likely origin will be found in the following letter from Mr. H. J. Moberly, the well known Hudson's Bay Company's factor:

"Macdowall, 31st May, 1912.

"A. O. Wheeler, Esq.

"Dear Sir,—Your letter, dated 21st instant, I received a day or two ago, and am now answering it, stating, as far as I have always heard, the origin of the name given to Mount Robson.

"Years before the Hudson's Bay Co. and the Nor'-West Co. joined (1821), it was the custom for the Nor'-West Co. to outfit a party for a two years' trip, hunting and trading. They went west and north, even as far as the border of California. One party, under the charge of Peter S. Ogden, some two hundred men, chiefly Iroquois and French Canadians. When west of the Rockies, he scattered his hunters in different parties under the charge of a foreman, to hunt for the season. One of his camps, under the charge of a man named Robson, was somewhere in the vicinity of this mountain, and it was the rallying point where all other parties came together for their return east.

"'I remain, yours truly,

"H. J. Moberly."

When camped at Robson Pass, Harmon and Konrad started off one cloudy morning to get some photographs of the crevasses and snow formations in the Robson Amphitheatre, while, with Kinney, I made some investigations of the Glacier's forefoot and marked some rocks at measured distances from the ice for future reference as to advance or retreat. Unfortunately the black paint had been left at Moose City, so a makeshift of charcoal and grease was used; it is doubtful whether it will endure the action of the weather. A memorandum of the measurements and description of the rocks used is here given.

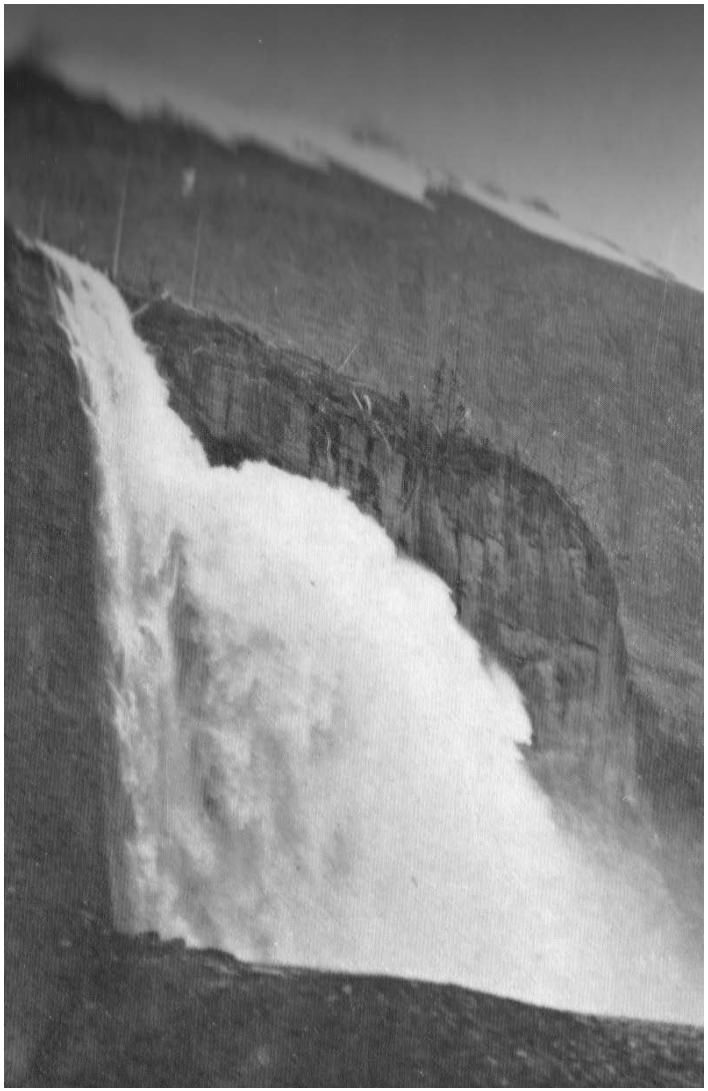
Harmon, owing to the dull cloudy weather, got a poor lot of pictures, but they, much to their satisfaction, made the first ascent of Mt. Resplendent (11,173 feet). They report this snow-crowned mountain as wonderfully crevassed. The piled up snow on the north and north-west faces was traversed by gaping chasms, set with long icicles like sharp teeth. A wide crack near the summit, then partially snow-filled, might be a dangerous obstacle. The crest is hung with enormous cornices reaching out a great distance.

From this splendid view-point Konrad confirmed his previous selection of a route up Robson. He stated that the horizontal south-east arête is quite possible, and that, once reached, little further difficulty would be encountered, as the slope to the summit does not exceed 45 degrees and the obvious route lies along the edge of a great snow mass clinging to the south-east face of the mountain. He reiterated the statement that a climb could be made from a camp below Mumm Peak in eight hours, once the route had been established.

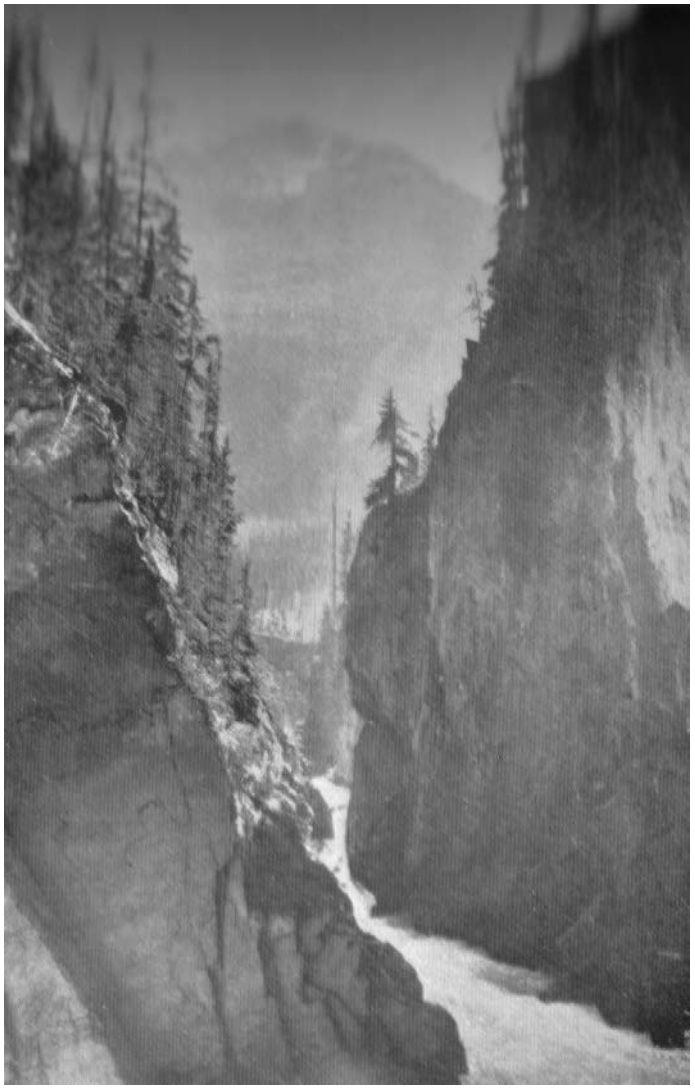
Robson Glacier

As previously stated, the Glacier heads in a magnificent snow-filled cirque, enclosed by Ptarmigan and Lynx Mts., Mt. Resplendent and Mt. Robson with its outliers, the Helmet and Rearguard. The cirque is four miles wide and the glacier from the head of the cirque to the forefoot is five miles long. Where it becomes a well defined ice-flow it is three-quarters of a mile wide. At the head of the cirque is a snow pass 9,700 feet in altitude, leading to the valley of a tributary of the Grand Fork, known as the Little Fork.

In front of the forefoot is the isolated point of rock, covered to a large extent by the terminal moraine. It rises from 90 to 100 feet above the shingle flat of the Pass and appears to have been at one time a continuation of the rocky timbered ridge down which the Continental Divide descends from Ptarmigan Mountain. The outflow from the eastern lobe of the glacier seems to have cut through and isolated the point from the main ridge, piling morainal debris all over it, and depositing boulders on both sides.



The Emperor Falls. Photo, Byron Harmon



Rainbow Canyon. Photo, Byron Harmon

Measurements East Of Isolated Point Of Rock

East edge of white crystaline rock over which water flows is distant from end if ice .....86 feet

West edge of white crystaline rock over which water flowsis distant from end of ice ..... 137 feet

From nearest ice to arrow on rock marked..... .338.6 feet.

Rock is 14 1/2. ft. by 7 ft. by 7 ft. high, of dark blue crystaline limestone.

Rock marked:

A.C.C. TO ICE
Aug. 10 338.6 ft.
1911

Main stream from ice flows just to east of and immediately below it.

The rock is in line with a square block of rock on the east moraine of a whitish crystaline formation (size 16 1/2 feet face by 13.7 feet high by 13.4 feet thick), and the first high point of the old moraine to west, where a pile of stones has been put together.

Measurements West Of Isolated Point Of Rock

Marked a vertical slab of blue slaty limestone which form the west wall of the isolated point of rock. Slab shows striation and is quite smooth. It was marked : "A.C.C., AUG. 10, 1911. TO ICE 175 Ft. ALONG WALL."

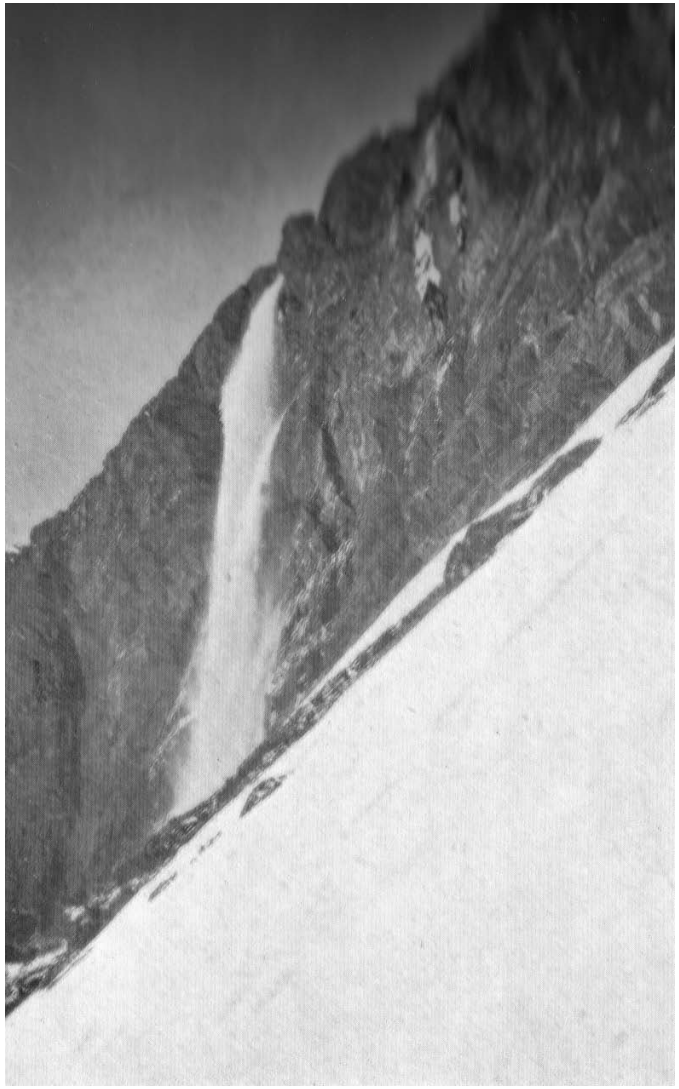
In both markings an arrow head was put at the point of measurement. The measurement in this case was made along the wall to where the ice of the glacier overhangs it. Here there was an irregular ice cave and the torrent poured from below it, immediately beside the rock wall — here a whitish crystalline rock.

Magnetic bearing from this arrow to the most advanced ice is S. 30 deg. W.

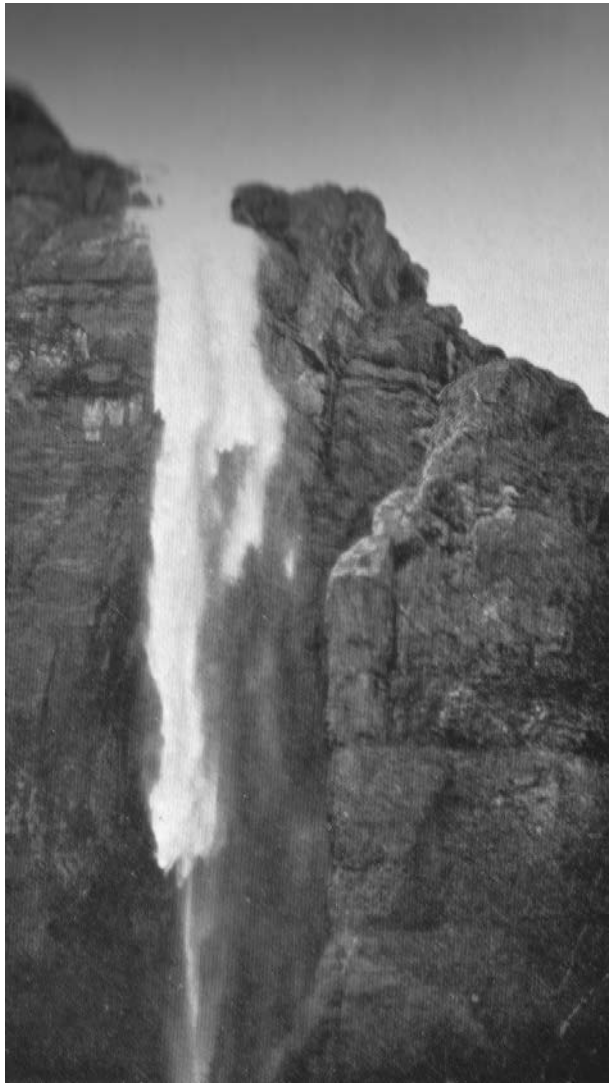
Just beyond where the rock slab was marked is a dry bed of the main torrent which sweeps outward around the old moraine farthest from the ice. This bed is not now in use, and the main stream, after leaving the cave, flowed to Berg Lake directly along the foot of the ice, in a position more westerly and much nearer the glacier. Three years ago the first mentioned bed was in use.

The glacier is of the Piedmont type, and is fed by icefalls from the hanging and cliff glaciers on the surrounding peaks. There is but one well marked lateral moraine, viz., that on the right side, extending from the Extinguisher, where a tributary glacier from Lynx Mt. is separated by it from the main ice flow. The only other characteristically formed lateral moraine is on the left side near the forefoot directly below the northeast face of Rearguard. The merest suggestion of a medial moraine extends down the centre of the dry glacier. The grade is generally easy and the travelling simply a matter of walking until you arrive about two miles from the forefoot, when, between the Extinguisher and the south end of Rearguard, the ice is much crevassed, but presents little difficulty to a passage over it. The upper portion is snow-covered, and perpendicular ice cliffs and wildly disrupted icefalls are seen in every direction around the cirque along the rock falls, buttresses and ridges that separate the various levels. Owing to the numerous differences of level and the many tributary glaciers they create, bergschrunds appear in many directions.

The glacier appears to be receding, for the ice cave referred to by Coleman (Canadian Alpine Journal, 1909, page 112), where the stream from the eastern lobe issues from the ice, was no longer apparent. It would be an exceedingly interesting glacier on which to conduct a series of



Avalanche From Lynx Mountain. Photo, Byron Harmon



One Of The Thousand Falls. Photo, Byron Harmon

annual observations with metal plates set out at suitable intervals. Seen from Mumm Peak, the ice shearing of past ages is visible along the front of the alps below Ptarmigan Mt., as well as along the northeast face of Rearguard, in the case of the former the top of the cut being several hundred feet above where the ice now lies.

The cirque and glacier with its many tributaries will be a magnificent attraction as soon as ready access to it is given; not so much for the ease and safety with which people may go on this large body of ice as for the splendid opportunities it affords to observe the effect of glacial action and obtain spectacular pictures amidst the wilder parts below the northeast wall of Mt. Robson.

Valley Of A Thousand Falls

Berg Lake collects the muddy waters flowing from the Robson Glacier and acts as a settling basin for them, thereby receiving its own beautiful turquoise-blue color. The stream forming the outlet of the lake, now clear as crystal, has cut through the boulder wash from the two glaciers previously referred to and provides the initial source of the Grand Fork of the Fraser River. It flows quietly in many channels over a shingle flat for a mile below the lake and soon again becomes muddied by glacial tributaries.

It was at the end of this flat our camp was pitched. Phillips having brought our outfit and a two weeks' supply of provisions, had gone back to pick up Hollister and Riley and go round with the horses the way we had come, to meet us again at Kinney Lake in the Grand Fork Valley below the cliffs that prevented our ponies from continuing further in the direction we were going. We had taken advantage of the return of the ponies to pack a fly-camp to Robson Pass and had come back to headquarters the day Konrad and Harmon climbed Mt. Resplendent. They were late that night and we were wondering what had happened to them, when Harmon rushed in breathless, gasping, "A bear! a bear!" It appeared that quite close by they had seen a black bear and Konrad had been left to herd it while Harmon came on for the hunters.

Blagden was mixing dough for a pan of biscuits; Walcott was cooking peas and Kinney was washing dishes, preparatory to getting the absent ones supper, for Konrad's yodel had been heard up the valley. At the word "Bear" there was a general jump for rifles—the peas were left in the pan, the spoon dropped in the biscuit and the other fellows' supper forgotten. Soon, rifle cracks were heard in the gathering gloom, quite number of them, as the chase waxed fast and furious, and about ten o'clock p.m. the party returned without the bear, which was said to have made off again up the hill badly wounded, but his trail could not be followed in the dark. Meanwhile, fortunately for Konrad and Harmon, the Chief had continued the supper preparations. Next day the trail of the wounded animal was followed to where it had crossed the river. It was unlucky to lose this specimen, for they were very scarce and wild and the hunters did not get another chance.

At the camp, wet and cloudy weather delayed us several days and compelled inaction. Overcome by ennui, Konrad went off one afternoon and did not come back at night; meanwhile the rain was pouring down in torrents. We kept up a good blaze and yelled and shot off rifles at intervals but to no avail. Next morning we found he had returned some time during the night. He claimed to have made the ascent of Whitehorn, and I have no doubt that he did. The blackness of the night had delayed his return. He reported that the climb, made by the north and west faces, was similar in difficulty to that of Mt. Stephen near Field; that the crest was snow-covered and he could not build a cairn there, but had built one at the nearest spot where there was rock. So his story ran. Knowing him I have no doubt of its truth, but it will not count as a fist ascent as there is nothing in the way of evidence except his word and that little cairn which may never be seen again.

Mt. Robson, Lake Kinney And Valley Of Grand Fork. Photo, A.O. Wheeler
Showing West And Southwest Faces Of Mt. Robson.

Just by camp the river enters a narrow rock canyon and careers wildly down a steep incline in a number of cascades and falls, making a great showing of white water. There are five leaps in half a mile, varying from ten to fifty feet. A line of cliffs now extends part way across the valley, and over this the river makes a grand spectacular leap of 145 feet to the rock floor below. Sixty feet from the crest the entire volume of water strikes a ledge and bounds outward for thirty feet in a splendid rocket. The feeling conveyed is one of immense majesty and power, and the name, "The Emperor Falls," suggested itself as symbolical of such traits. The rocket might be known as "The Emperor's Leap" and the rush of white water through the narrow canyon above as "The Royal Raceway."

Standing on a ledge beside the fall, which projects over it so as to enable you to look down the full distance, you see a very grand and fascinating sight. The impression is of huge handfuls of some white granular material being hurled outwards in furious haste and a dense cloud of spray is sent up by the water striking the rock floor below. The floor is corrugated, with an inward slope, and, as the sheets of flying spray fall upon it, they are caught at the crests of the ridges by the waterblast from the fall and blown outward in curious water-scuds that look like snow blowing off a mountain crest in late September.

Directly in front at the foot of the fall is a narrow rock-ledge with a precipitous face on the outside. To cross to the other side of the fall it is necessary to pass along the ledge, which means a passage through a heavy, driving rain storm, and it is well to look to your footing or the fierce blast from the compact body of falling water will throw you off your feet.

On striking the floor at the base of the fall, the river turns sharp to the left and races through a narrow rip in the rock with tremendous velocity. The crack is from six to ten feet wide and the water boils and churns in a wonderful manner. The channel is a comparatively modern one as geological time goes, the oldest bed of the river being a deep gorge, which descends from the level of the shingle flat, without precipitous drops, and parallels the present channel. It has been out of use for a long time, for trees, hundreds of years old, are seen growing at the bottom. The two channels, old and new, join about a mile below the falls in the midst of a network of gorges and cliffs that are appalling in their rugged wildness and magnificent depths. The older bed is here several hundred feet deep and the river from the new channel reaches it by a second splendid leap of 150 feet. Two-thirds of the way down is a tiny pool in the rock, into which the water drops and then dashes on more brokenly. The formation suggests the name, "Fall of the Pool." This leap is at the second line of cliffs. A third line of cliffs, which divides into two series, gives the stream an opportunity for a third great leap in a very striking curve of white foam. The name, "White Falls," would be appropriate. Almost directly after, the stream reaches a shingle flat, created by the torrent from the glacier below the east face of Mt. Whitehorn, which here joins the Grand Fork and largely increases its volume. From the head of Emperor Falls to the shingle flat, a distance of less than a mile, the river drops 1600 feet.

To return to Emperor Falls. Having crossed in front of the Leap you are on a narrow strip of rock slope between the old and new channels. It is a little more than half a mile long and is perfectly safe to travel over as far as the junction of the gorges. A pathway here will be unequalled to illustrate the wondrous power and spectacular effects of a glacial torrent, and will provide interest and excitement that will long be remembered. In two places the rift is not more than three feet wide at the top: you stand on a ledge that overhangs and seem to feel the rock vibrate as the torrent rushes madly, sixty feet" beneath. Some distance down, the ridge is cut in two by an old cross channel which can easily be bridged. Standing at its bottom, which can be reached without

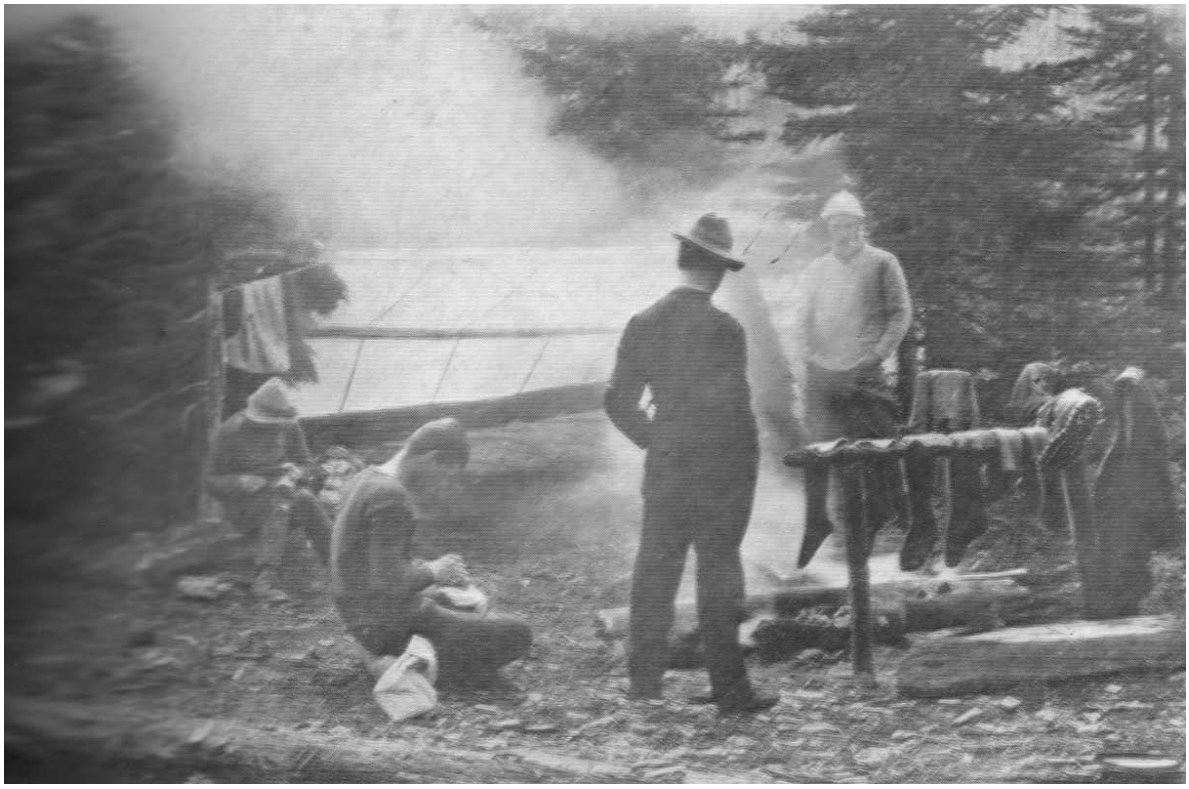
difficulty, and, looking up, you see a magnificent white-water cascade. It is wonderful! You are almost under it and the frantically leaping water can only be described as sheets of spray hurtling through the air as the torrent comes racing down the steep incline. It is difficult to describe the feeling it creates at such close proximity. I should fancy that a similar one would be created during a raging storm at sea, when towering waves are breaking all around and their crests are blown to spindrift. Looking on down the stream it is more of a box canyon than a crack, and the reach of white water, struggling like some wild captured thing, is fine. It conveys the impression of enormous-strength and power, seething and boiling in impotent madness to get free—a thing of Nature, utterly wild. Add to this the roar of the water, the gloomy and unyielding rock fastnesses with which you are surrounded, and it is difficult not to believe that you are in a world other than that which you know.

A little more than a mile below Berg Lake the northwest spur of Mt. Robson closely approaches the peaks across the Grand Fork Valley. Below this point is a wider circle which heads in a fine glacier and icefall, previously referred to as lying beneath the east face of Mt. Whitehorn. The icefall is of a peculiar pointed shape and drops perpendicularly into a deep rock gorge opening to the lower shingle-flat, already mentioned as that through which the torrent from the glacier flows to join the Grand Fork. This circle has been named by Kinney "The Valley of a Thousand Falls." It cannot be called a beautiful valley—tremendous cliffs and rock gorges are on every side and the feeling is one of austerity and gloom—but it is very impressive and very wonderful. On a bright sunny day the hanging and cliff glaciers on the surrounding heights of Robson and Whitehorn send down streams of water, which pour over cliffs in long, thread-like falls, some of them hundreds of feet in height. These, together with the falls already described and several others that come from the snowy peaks south of Mt. Whitehorn, give the appearance of numbers, and justify the name to some extent. Beyond the rock gorge of the glacier the eastern walls of Whitehorn rise tier on tier in awe inspiring precipices, and from between two titanic buttresses a tumbling glacier, showing a fine bunch of séracs, continually avalanches fragments to the valley below.

The main difficulties of making a pony trail up the Grand Fork Valley lie between the shingle flat of Berg Lake and that lower down at the mouth of the gorge referred to. Between the two is a steep, rocky incline descending 1600 feet, which is intersected by numerous old water channels. It is partly crossed by two rows of cliffs and entirely crossed by two other rows. The two higher can readily be passed on the north side, the two lower must be climbed. Up the lowest line of cliffs a path can be put with the assistance of some blasting of rock and a strong railing on the gorge side. The second line is more difficult and some bridging and platform work is necessary at the bad spots.

From the lower shingle flat the drop to the morainal delta at the head of the glacial lake in the Grand Fork Valley, named Lake Kinney by Coleman, is 460 feet, making a total drop of 2060 feet from the western end of Berg Lake shingle-flat. Down the latter section the stream, having rested for a spell from its wild race, again cascades with renewed energy.

August 16th, camp was moved from the Berg Lake flat to near Kinney Lake, beside a little island of spruce in the shingle-floored delta. The camp-outfit was now pretty light, as our commissariat for the last few days had only been able to produce cornmeal porridge and some biltong which Phillips and Harvey had cut from the caribou meat at Moose Pass camp and smoked over a green-wood fire. For dessert, however, there were quantities of luscious huckleberries to be had for the picking. It was rather nice work balancing heavy packs on our shoulders down the several lines of cliffs, but eventually all arrived safely.



Camp Above Emperor Falls. Photo, Byron Harmon

Rafting Lake Kinney. Photo, Byron Harmon

Here we nearly lost Konrad, for, between the spruce island and the main shore roared the glacial torrent of the Grand Fork, over which some prospector had felled a tree to effect a crossing, and Konrad had undertaken to go to the other side to get balsam brush for our beds. It was a thin tree and swayed back and forth uncertainly as the powerful torrent caught and held the branches. Returning loaded with an armful of brush, and unable to see where he was placing his feet, he slipped and fell. An agonizing yell was our first apprisal of the catastrophe. It was most expressive, and conveyed a full quota of dire distress. One grabbed an axe, another a climbing rope, all leaped to the spot to behold poor Konrad clinging frantically to the branches of the dripping tree with just his head above water and the surging current, stretching his legs down stream like ribbons. The rope was flung and, with the guide's instinct, he immediately secured it to his body, thus ensuring his recovery, dead or alive. With our united assistance he was soon extricated, but it was a pretty close escape from that which might have happened had he been obliged to let go and be swept under the tree at the mercy of the rushing water. It is indicative of the man that through it all he held firmly to a small hand-axe which he had borrowed from Blagden, thereby decreasing his ability to hold on.

Glacial Lake Kinney is held in by an ancient moraine which has created a natural dam. It is of a glorious blue-green color, and shows the square-cut upper shore line so frequently seen in lakes formed by silt-laden mountain torrents. On the east, the shores are most picturesquely wooded by large spruce and Douglas fir, for the altitude of the lake is only 3,259 feet, and the flora has assumed a semi-tropical luxuriance in the narrower valleys. The shore line is delightfully irregular, a prominent point protrudes in the centre and there are several small bays. On the west side the lake is hemmed in by bold rocky cliffs. It is four-fifths of a mile long by two-fifths wide.

All around the lake and its delta the scenery is extremely picturesque. Towering precipices and leaping waterfalls are on every side, except the valley opening to the south. Over to the west, across the delta, one specially fine fall comes down in a number of white leaps. The lake provides excellent camp grounds and, with the construction of a log chalet, would furnish a splendid base for climbing and exploring as far back as the summit of Robson Pass. A few boats on the lake would give delightful recreation and create a parallel attraction to Emerald Lake in the southern section, as soon as a driving road is built to connect the lake with the Grand Trunk Pacific Railway, now operating to the mouth of the Grand Fork Valley. Even as matters stand it only requires an improvement and extension of the existing trail to give ready access for camping parties to the shores of the lake.

Two stations were occupied here: one west of the Grand Fork, on an outside ridge overlooking the Fraser Valley, was named "Robson West" (7,290 ft.), owing to its location directly west of Mt. Robson. It is not a high station, but the ascent meant 4,000 feet of a climb up very steep slopes, thick with alder, devil's club, bracken and fallen dead timber. While doing instrumental work here a goat came up the ridge and stopped quite close. Kinney shot at it with a .22 Stevens pistol and it went away. Immediately after, a second one came the same way to within twelve feet of us, and Kinney got a point blank shot, but evidently made no impression as the goat promptly retired, apparently none the worse, and was seen later going up the cliffs beyond our station.

The second station is on a peak directly behind the big waterfall seen from the delta, which is fed by the glacier on its eastern face. The ascent was made the day after that of Robson West, and, sooner than make a descent and second ascent through the horrible tangle of alder, devil's club and matted brush lining the steep slopes above the Grand Fork Valley, I stayed all night in a little grove of spruce at timber line. Kinney, who returned to camp, had some biltong in his rucksack,

which served for supper. The night was warm and I managed to keep a fire going. Next morning Konrad brought up some breakfast, and we climbed to "Little Grizzly" Station (8,953 feet), an altitude of 5,700 feet above our camp.

It was a magnificent station, named on account of its resemblance, on a small scale, to Mt. Grizzly, near Glacier House, in the Selkirks. Eastward across the valley, the west face of Mt. Robson was exposed in perfect detail. Lake Adolphus, Robson Pass, Berg Lake, the Upper Grand Fork, the Emperor Falls and the other falls of the series were seen from a bird's-eye point of view, and the structure of the cliff-encircled Valley of a Thousand Falls was fully disclosed. The Robson Massif was magnificent. Six tiers of cliffs, sloping slightly upward towards the south, three of them of large magnitude, compose the lower half and support the great white cone forming the crest of the mountain. Between the cliffs are talus slopes of varying steepness, the lower ones grown quite extensively with spruce forest. The final cone appeared to be nearly perpendicular on this side, though really the angle of slope is between 60 and 70 degrees from the horizontal. The bands of strata forming it have a slightly downward dip towards the south and show, at their great height, like black lines through the snow. Between the cone and the cliff-terraced base is the long shale slope frequently referred to by Kinney and Phillips in their accounts of the ascent made by them in 1909 (Canadian Alpine Journal, Vol. II., No. 2, pp. 21-44). From top to bottom this tremendous shale slope measures 1870 feet. At the highest south-west corner of the mountain is a hollow, snow-filled the year round. Traversing the great shale slope, Kinney and Phillips, after numerous attempts in other directions, made their way into this hollow and 'by it reached the summit. Seen from our point of view, the route looked impossible, and certainly one of tremendous peril. The great wonder is that they returned alive, and, had the day not been cloudy and the snow not remained in good condition throughout it, there might have been a different tale to tell, as the opportunities for avalanching are here excessive. Kinney took a desperate last chance and succeeded. He has been criticised rather severely by practical mountaineers for taking on so extremely dangerous a climb a companion who had had no previous experience. Had it been any other man the criticism would hold good, but Phillips is a natural athlete and quite the equal of Kinney as a mountaineer. A careful inspection of this route brought home to us the fact that the one attempted by Coleman, by the English party of 1909, and that selected by Konrad is the proper route for a safe and rapid ascent.

Sighting on the summit of the mountain a remarkable feature could be seen through the telescope of the transit: a series of snow séracs, of eerie and fantastic shapes, formed through the action of driving snow-storms, fierce winds and hot sun, along the line of the crest. They are very peculiar and, seen at close quarters, would, undoubtedly, prove of much interest.

It is not likely that much time will ever be spent on the summit of Mount Robson. The structure of the mountain is not conducive to the building of a hut on the north or east faces, and, unless this can be done, all available time will be required to make the ascent and descend within the limits of daylight. It would be quite possible to construct one at several points on the west face, but I doubt much if a practical and safe route will be found in this direction. The most suitable place will probably be on the pass leading from the Little Fork to the Robson Amphitheatre, previously referred to. Such a hut would enable the ascent to be made in two days from a camp or chalet at Lake Kinney, spending one night at the hut. By this route the climb to the snow-field above the Dome would be largely obviated as the pass is nearly on a level with it, and Hastings, Mumm and Amery proved that it is a practical line of ascent through having circled around the Dome that way on their return climb (Can. Alpine Journal, Vol. II., No. 2, p. 18).

Northward, Mt. Whitehorn is a very striking feature, owing to the precipitous rock ramparts,

like mighty walls, that stretch out from it to the Grand Fork Valley. It is surrounded by glaciers and supports one on this face, but is not very white and does not convey the impression of a horn.

On the opposite side, to the south-west and west, lies a network of valleys tributary to a main one of large size and wide extent, leading back into the heart of an assemblage of striking peaks, of which the snow-clad pyramid of Mt. Longstaff is the most prominent. Hanging valleys cut the line of the main valley in every direction and small glaciers fill many of the hollows, the whole presenting a chaotic confusion of broken terrain that requires the occupation of many more camera stations than we had time for to disentangle and reduce to systematic order on a map.

The valley is that of the stream known locally as Swift Current Creek. A bush fire was raging directly below us, and the smoke, rising in dense clouds, rolled up the valley, spread over the ridges and filled all the adjacent valleys. The curse of bush fires handicapped us all summer, rendering the landscape always hazy and often so obscured that photography was out of the question. From this cause the original beauty of the Grand Fork Valley is greatly marred for its full length to the eastern shore of Berg Lake.

At the foot of Lake Kinney the Little Fork stream joins the Grand Fork. Its valley is very attractive and will be a favorite, as it can readily be reached from a camp at the Lake, and will provide some magnificent scenic effects. The south face of Robson rises directly from it and is eroded in towering precipices of alcove formation. Huge rock spurs stand out like giant buttresses, forming deep gorges, down which the ice and snow, lying in beds on the upper part of the mountain, pour in a continuous stream of avalanches on a hot sunny day. From stations close by, at the head of the valley, we watched them for several hours; there would be a crack, a crash, an immense mass would break away and, with a roar like thunder, come leaping from ledge to ledge into the gorge, and then go sizzling to the valley below.

About half of its length the valley turns from east to south and at the bend Mt. Resplendent rises precipitously, showing a mixture of snow and rock on this face. Between Resplendent and Robson is the high pass previously referred to as a site for a hut, 9,700 feet in altitude. I am of the opinion that this pass will be the popular route to the summit of Mt. Robson, when the hut is built, but until then it will be approached from the Robson Pass. A route may possibly be found up the south face, but I should think there would always be great danger from avalanching.

Beyond Mt. Resplendent are the peaks enclosing Resplendent Valley, which, on this side also, are seen to embrace glaciers. It is not unlikely that between these peaks a pass will be found, but it will be a mountaineer's pass.

At the head of Little Fork Valley are some fine alplands and a small glacier, with a mountaineer's pass to the Fraser Valley. Ponies could not be taken this way. The principal difficulty of the valley, which is of the "hanging" type, is that there is a steep drop near the junction with the Grand Fork, where the travelling is in a gorge through which there may be some considerable trouble to find a trail.

One thing is certain, Lake Kinney will be an important centre from which to make expeditions up the Little Fork and Grand Fork Valleys and to points of interest in the vicinity, and no time should be lost in putting a good pony trail to it from the railway, to be continued to Robson Pass as soon as possible. It will be strongly in the interest of the section of the Canadian Rockies catered to by the Grand Trunk Pacific Railway that this should be done, either by the Government of British Columbia or by the Railway Company, or jointly by both. Such a trail will open up one of the very finest of alpine resorts and give access to alpine scenery that is unique throughout the world. Eventually, no doubt, a good driving-road will connect the hotel, which the Railway

Monument Placed At Summit Of Yellowhead Pass. Photo, A.O. Wheeler

Company proposes to build near the junction of the main Fraser River and the Grand Fork, with Lake Kinney, and when this is done conditions will be similar to Emerald Lake and the driving road that connects it with Field and Mt. Stephen House.

Phillips arrived with the horses in good time at the foot •of the Lake and, on August 19th, we rafted our outfit across and joined the camp which he had established about three miles below on the Grand Fork.

After leaving the Lake the stream flows some six or seven miles before joining the Fraser. To the west is a rocky spur where the station called '"Robson West" is located. On the east side are high rounded hills rising to near 7,000 feet. The existing trail passes through a magnificent forest of giant cedar and fir where long festoons of moss hanging on the boughs and the tropical growth of devil's club and ferns with the sunlight glinting on them through the openings in the dense foliage overhead remind one of the forests of the Selkirks, and particularly of the path from Glacier House to the Asulkan Valley.

Three stations were occupied on the eastern hills, known respectively as Lake Kinney Nos. 1 and 2 (6,765 and 6,849 feet), and "Little Fork" (8,158 feet). The first presented a bird's-eye view of the Lake and the two latter, as also the station Robson West, showed as on a map, the wide Fraser Valley. Along its floor could be seen the main stream and the Grand Fork winding to their confluence in sinuous curves. and then on to Tete-Jaune Cache. Below the junction they spread out in many silver channels embracing numerous tree-clad islets.

What interested us most was a range of high mountains lying due west immediately beyond the McLennan River, which flows into the Fraser from the south at Tete-Jaune Cache. The old line of travel to connect with the headwaters of Canoe and Thompson Rivers lay up the valley of the McLennan, and it was in this high range that the two streams named have their initial sources. It showed some bold, striking peaks and some very fascinating snow-fields, and the tops of the peaks seemed to be continually in the clouds. As far as known this range is unbroken ground. It is one of the five principal groups of mountain peaks, scattered over the district, similar to that of which Mt. Robson is the keynote.

One more station in the vicinity was occupied: a benchmark (B.M. 3088.93), on the line of the railway, from which a sight was obtained directly on the summit of Mt. Robson; and then, August 23rd, we turned eastward, as time was passing rapidly and there was still the Lake Maligne country of the Jasper Park to visit.

Eastward, the Fraser Valley narrows considerably and the enclosing hills on the south become steeper and more uniform. The higher peaks lie further back and are not visible from the valley floor. At intervals, the sides are cut by deep tributary valleys leading into the heart of the Selwyn Range. They have all steep pitches close to the Fraser, where the greater eroding-power of that main waterway has carried its bed far below their original openings, and in consequence often present a charming cascade or waterfall.

Moose Lake is a fine sheet of water, seven and a half miles long by one and a quarter wide, in color a clear bluish-green. The railway hugs the north shore. Along the hill-slopes on this side the original forest has, for the greater part, been burned and the unsightly remains make a most unattractive view. The south side and the east end of the lake, however, are adorned by beautiful green forest and the surrounding hills are refreshingly picturesque. Near the centre, some white waterfalls show very effectively as they drop down the steep incline from a tributary hanging valley, now high up above the bed of Moose Lake. These have been named "Rockingham Falls" by the Milton and Cheadle expedition of 1863-4. A very charming site for a summer hotel could be

had at the east end of the lake, and would furnish an excellent headquarters for boating and fishing. Already there are two motor launches in operation and a number of canoes and boats. A few fish can now be taken, but they are not plentiful and the lake would have to be kept stocked.

About a mile and a half below the west end of Moose Lake, a stream comes from a low dip in the hills on the north side of the valley. Above the dip, on the right as you face it, are some very striking rock exposures of brilliant red, mingled with yellow. They look as though they had been painted and are seen from a long distance as you approach up the valley. This dip is the "Red Pass," previously referred to as possible of being made a direct route from the railway to Resplendent Valley. A station, named "Moose Lake West" (7,542 feet), overlooking the pass, was occupied on August 24th. It would, I think, be possible to construct a pony trail to it on the Fraser side by keeping high up above the trough of the stream. On the Moose River side is a broad alpine valley with open alplands and numerous small ponds and clumps of spruce. Streams run everywhere through the grasslands and look very attractive glittering in the sunlight. It is a simple matter to make a trail from the pass to timber-line on this side, but at that point a steep wall runs right across the valley, down which a zig-zag trail would have to be made. From there on to West Moose branch there is no difficulty. It would be a direct route to Resplendent Valley and an alternative one to that by the Moose River. It would, more over, be high and dry throughout as there are no muskegs.

Mt. Kain was now close by to the west, and Konrad Peak again showed like a massive finger pointing heavenward. Directly at its base lay a glacier, and the peak looked a very difficult, if a possible, climb. To the north the Colonel stood out prominently, and beyond and around a sea of peaks.

Less than two miles east of Moose Lake, Moose River joins the Fraser. We were again at Moose City, having made the first complete circuit of Mt. Robson by way of Moose River and Pass, Calumet Creek, Smoky River, Robson Pass, Berg-Lake, Grand Fork and main Fraser River. The total distance, as near as I could estimate, is something over 85 miles. A pack-train had been taken all the way except for a short five miles, from the Berg Lake shingle-flat to the outlet of Lake Kinney, the break making it necessary for Phillips to take a five days' journey to connect with our party at the foot of the lake. It will thus be seen how important it is that this broken link in the chain be made serviceable.

In the northeast angle between Moose River and the Fraser, is a bold, striking peak. Owing to a resemblance seen from a certain point of view to the well known features of Sir Oliver Mowat, I called it "Mt. Mowat" (9,740 feet), and occupied a camera station on its highest point. The ascent was made from a camp on the Fraser River side close to the mouth of Grant Creek, a mile east of Moose City, where Hollister and Riley had remained collecting, while Phillips came to meet us at Lake Kinney. It was an arduous climb of 6,300 feet, but proved a valuable mapping station and gave a key to the location of the line of the Continental Divide. On the way up, as we topped a ridge, six goats were seen lying, sunning themselves on a little col immediately below us. We ducked out of sight, as we thought unheard, but in a few • minutes the leader, a fine old Billy, came slowly up to investigate. It is a well known fact that these animals have little fear of what is above them. He came within 25 feet and stood looking at us while Kinney photographed him and then shot at him with his .22 pistol. Apparently there was no result, and the goat ran back to its companions, and in a bunch they leisurely ascended the opposite ridge and passed out of sight.

Our next move was to Yellowhead Lake, where camp was placed in a grove of fir and aspen at the Narrows, a most beautiful and picturesque spot. The approach up the valley to the Yellowhead Pass from the west is very fine, showing on the south side miles and miles of green

forest, sweeping clear to the summits of the enclosing hill-sides, and then on to the wide snow-field seen over against Mt. Geikie. To the north the long serrated ridge of Yellowhead Mountain looms up like a mighty rampart; on the other side the isolated cone of Mt. Pelee stands a grim guardian and dominates the approach for many miles. The railway hugs the cliffs on the south side of the Fraser and, as it twists and turns following their sinuous outline, the great monolith frequently comes into view as the predominating feature of the landscape.

A high peak of the Yellowhead Mountain Ridge on the Continental Divide was occupied on September 1st and the station named "Yellowhead" (8132). It is not of high altitude but disclosed a number of features of very great interest. The whole of Yellowhead Lake was clearly displayed in all its three and a half miles of wonderful coloring; points, bays, narrows, and, just beyond the upper narrows, almost touching, another small lake of a deep indigo blue. Mt. Pelee was in clear view from base to summit and, immediately to the right of it, the upper part of Mt. Geikie could be seen. The lower half was cut off by a snow-field encircled by a line of rock ramparts, betwixt which and the mountain there was evidently a deep valley. What could be seen of Geikie showed that there was a magnificent first climb in store for some enterprising mountaineer, and one that would challenge the highest skill, patience and perseverance. On the side we were looking at there did not seem to be a possible route. Of equal interest were two attendant peaks, one on the right and the other on the left, which seen from our distance seemed to be part of the same mass, but might be separate. One was a sharp tooth, the other an irregular, flat topped cone and, though of slightly lower stature, seemed of even more difficult ascent than the main peak. All around Mt. Geikie are the summits of most exciting-looking peaks, the whole forming a grand group that would likely take a good part of a season to map.

Still to the right the deep, forested trough of the Fraser River lead down from between high, white peaks and wide snow-fields extending back as far as the eye could see. It is not impossible that the main source is in glaciers surrounding Mt. Geikie, as the valley seems to come from that direction, but I am inclined to think it lies further beyond. A mile below Yellowhead Lake the outlet joins the Fraser, which here turns sharply from south to west and winds down its valley, now in line with that of the Yellowhead Pass, in sinuous loopings.

Just before our view was cut out by the line of the Yellow-head Ridge, we saw, opening a way through the heart of the Selwyn Range, a wide, deep valley with timbered sides and a floor showing some meadow-lands. It had the usual steep pitch from the Fraser, but after that was nearly level, and extended many miles before it turned to the left out of sight, still deep and level. We had heard of a pass through the range to Canoe River, a tributary of the Columbia River, and I feel sure that this must be the one, as it had the ear-mark of a through pass.

Northward, on the other side of the Yellowhead Ridge, was a wild rocky basin, forming the western source of Miette River. There were numerous lakes scattered about it on benches set out at various levels; we counted thirteen, varying in colour from indigo to ultramarine, though some were mere ponds. The line of the Continental Divide follows a ridge, extending northward from the centre of Yellowhead Ridge, which forms the boundary of the basin. It soon closes to a valley, collecting the various waters and flowing eastward. The stream is joined by the eastern source of the Miette which comes from behind a rock mass of peculiar shape: at one end a blocky tower stood up like a clumsy smoke-stack, and the whole looked so like a child's toy locomotive that I called it "'Mt. Toot-Toot."

We occupied one last station in this section on September 2nd, which overlooked Yellowhead Pass. It is designated as "Pass Station" (6,203 feet), and gave good views of Yellowhead Lake, the

summit of the Pass, the exit of Miette River from its canyon and a view of the watershed on the south side of the Pass, which is densely timbered, while the north side is for the most part brule.

Before leaving the vicinity there was one more duty to perform, viz., the placing of a definite visible mark to establish the line of the Continental Divide where it crossed the summit of the Yellowhead Pass. Mr. Donald Brown, Grand Trunk Pacific Engineer in charge of this section, Residency No. 13, at the Narrows of Yellowhead Lake, kindly came up and assisted me with his knowledge of the ground to obtain the necessary levels at the Pass summit.

A post was planted on the line of the Divide, close to the north edge of the Railway Right-of-Way, of which the following notes are descriptive:

Spruce post 6 inches square, 5 1/2 feet high. Surrounded by stone mound, 3l/2 feet high. Altitude of ground at post=3,727.98 feet above sea-level. Altitude of ground at bottom railway cut—3,718.21 (sub-grade).

Post marked as follows:— East side, "ALBERTA."

West side, "BRITISH COLUMBIA."

South side, "SUMMIT, 3,727 ft." North side, "Broad Arrow."

Four bearing trees were marked.

Of the Robson group of mountains as a whole—and by the Robson group I mean not only the immediate peaks surrounding the great massif, but those lying north, south, east and west of it for twenty to thirty, miles or more—it may be said it has vast possibilities and will open up a field for research and recreation to the scientist, the mountaineer, the artist, the Nature lover, the hunter and the every-day tourist and traveller that cannot be surpassed. While the majority of the peaks are between 9,000 and 10,000 feet, a number rise to over 11,000, and in the case of the central massif to 13,000, but the alpine character of the region cannot be judged by these altitudes. Owing to the fact that the range forms the dividing line between two vast watersheds draining to mighty oceans, and that the annual precipitation is excessive, snow fills every hollow and produces an endless array of snow-fields, glaciers and icefalls that add greatly by contrast to the scenic beauty of the gray and brown rock masses, clothed at their bases with forests of pine and spruce.

Among the wonderful and charming characteristics of the Canadian Rockies are the number of gloriously coloured lakes and lakelets of all shades of blue and green—some of such wonderful colours that no name has yet been found to describe them—and the milky green glacial torrents rushing swiftly between walls of pine, ever breaking into cascades and falls that are such an unspeakable joy to the lovers of the beautiful. The Robson group is singularly blessed in this respect and is quite the equal, if not superior, to other parts of the Range. While this is true as a whole, it may be reiterated that the alpine scenic combination of snow-crowned mountain, ice-encircled amphitheatre, tumbling glacier, turquoise lake and leaping waterfall beheld at the immediate vicinity of Robson Pass is distinctly unique, and nowhere throughout the whole of Canada's mountain areas can more striking, more impressive or more lasting memories be secured. But good pony trails are required above everything. There is no practical access—or such very costly and slow access that it is only open to those of wealth and leisure. The railway has done its part. It has trains running daily that will bring crowds to the foot of all this galaxy of alpine glories, and it is now open to the Governments of Canada to give ready access to the crowds brought by the railway, and thus materialize the enormous revenue that will accrue from visitors, who are not only willing but anxious to come and enjoy these beauties of Nature at her outposts.

Expeditions to Maligne Lake

Fitzhugh is a terminal point of the Grand Trunk Pacific Railway. It is at the junction of the Athabaska and Miette Rivers and is a delightfully picturesque spot. Three great valleys here meet: that of the Athabaska, leading southward to its main sources in the glaciers at the head of the Whirlpool and Sun Wapta Rivers; that of the Miette, coming from its source in a series of beautiful glacial lakelets, directly adjacent to Yellowhead Pass; and the main valley of the Athabaska after its confluence with the Miette. The Athabaska (Whirlpool branch) and Yellowhead Passes cross the Continental Divide, and the waters of their western slopes flow to the Pacific Ocean; while the Sun Wapta Pass (Wilcox Pass) divides the waters of the Athabaska from those of the Saskatchewan River. Both these waterways, after hundreds of miles of wandering, enter the Arctic Ocean, the former through the medium of Mackenzie River, and the latter at the southern extremity of Hudson's Bay.

Fitzhugh, named after a vice-president of the Grand Trunk Railway, is, owing to its central position at the junction of the three valleys, bound to become an important centre. There is plenty of room for it to grow and expand in the park-like situation that has been chosen. Not the least among its future-utilities will be the outfitting of parties crossing along the eastern slopes of the Rockies from steel to steel—from Fitzhugh on the G.T.P. to Laggan on the C.P.R. This route, I now prophesy, will be one of the future important scenic routes of the Canadian Rockies. It has been travelled in early days, by Indians and voyageurs in connection with the fur trade, and in later years by explorers and mountaineers. During the past summer a party of the Alpine Club's Expedition made the first travel from steel to steel by this route. A party of considerable size is planning to make the crossing next summer. And so it will go on, until the constant flow of travel demands the making of good pony trails where now little better than tracks exist, leading by a line of blazes through dense primeval forests, through muskegs, through wide areas of burnt and fallen timber and along rough and steeply sloping hillsides. Trails will be made with hard, safe beds and easy grades, stopping-places built at suitable intervals and, in the still more distant future, a broad, well-ballasted motor road will connect with that now being built up the Bow River Valley and through the Vermillion Pass to join the "Great White Way," stretching in a continuous ribbon band of macadam from Vancouver at the Pacific Coast to the wide-spreading prairie lands of Alberta, Saskatchewan and Manitoba, and connecting by greyhound ' steamers with Vancouver Island and the Grand Trunk Pacific port of Prince Rupert.

Three high passes have to be crossed; the Maligne Pass at the head of upper Maligne River, falling on the south side to the valley of Poboktan Creek, altitude about 6,900 feet; the Sun Wapta Pass (Wilcox Pass), crossing to the Saskatchewan headwaters, altitude about 8,000 feet; and the Bow Pass, altitude 6,870 feet. All three show beautiful park-like alplands, brilliant in spring and summer with exquisite alpine flowers, and the home of the wild goat, sheep (the Bighorn), and caribou; where marmots, little chief hares, mountain grouse and ptarmigan break the silence by shrill, unusual calls—a silence otherwise only broken by the roar of an avalanche, the crack of an icefall or the rattle of a volley of rocks falling from precipitous heights. When fully in operation this wonder-trail will be a world-renowned link between the two great transcontinental roads of Canada. The party that crossed from steel to steel took fourteen days doing so, and that in the face of a heavy snowfall that draped the landscape in white and made some of the travel very difficult. The return journey was accomplished by Phillips and Konrad in thirteen days.

The surveys made by the Alpine Club's Expedition were carried southward from Fitzhugh to cover Maligne Lake, some thirty-five miles distant by trail, and the territory adjacent to the route

leading to it. This had only just been done when the September snowstorm put a stop to further operations. Using established land survey corners as a base, a triangulation was extended southward and data to map the district obtained by photographs taken at the summits of the peaks.

Directly at Fitzhugh, eastward down the Athabaska and for twelve to fifteen miles up it, the country is composed of grassy opens, mingled with bodies of spruce and Douglas fir, and presents a very park-like appearance. Many beautiful little lakes are in the vicinity, and may be seen collectively from the heights. From one central point, at an altitude of 8,700 feet, the Athabaska Valley lay before us as on a map, showing the river from its junction with the Whirlpool winding in serpentine loops to beyond the site of Henry House. Lakes and ponds of various sizes appeared on all sides—we counted forty-five in the circuit. They showed many shades of blue, violet and green and some were of quite large dimensions.

One in particular lying below us to the west, surrounded by small pines, was of a wonderful colour; at the edge the water showed a bright emerald green and then shaded to peacock green, while in the centre the colour got so deep as to appear almost black. It was long and narrow and sparkled in the sun like an emerald of the first water.

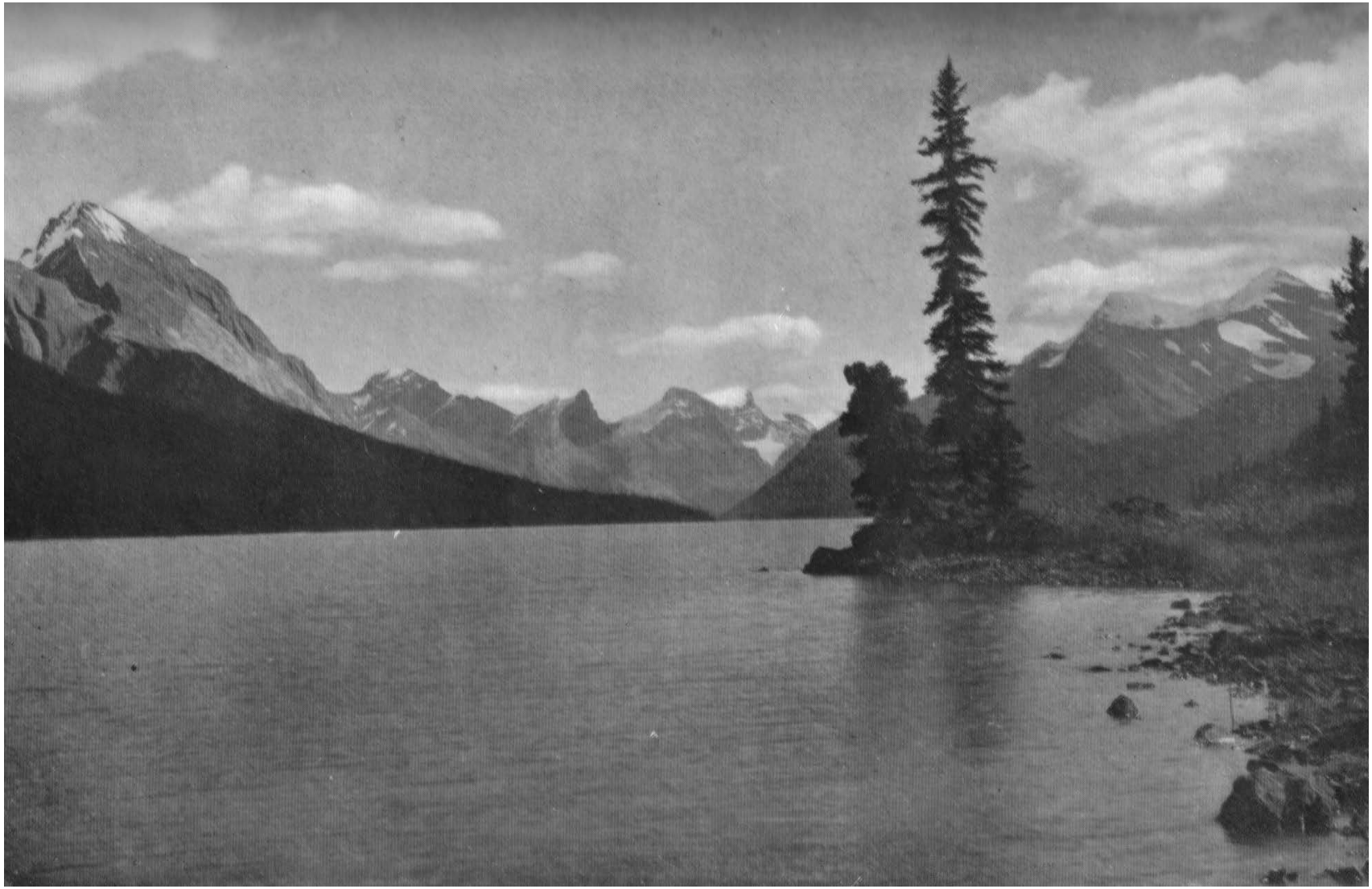
About four miles from the junction of the Miette River with the Athabaska, Maligne River flows into the latter from the south. It parallels the upper Athabaska, and its valley and that of Maligne Lake is the demarcation line of the sharp-peaked limestones of the Colin Range. West of the Athabaska are high rugged peaks, of which Mts. Geikie and Fitzhugh are central points. Between the valleys of the two streams lies a low range of hills, which rise from rounded shale-covered bases to rugged ridges and distinctive rock shapes. The rock is composed of conglomerates made up of quartzite pebbles, slates, shales and schists.

The high point referred to is at the north end of a ridge, overlooking the three valleys, and gave a fine view on three sides. Westward across the river toward Mt. Geikie, of which the ragged precipitous crest could just be seen, were two smaller valleys inviting exploration, the gravel wash that paved their floors showing their glacial origin. One led around the base of Mt. Fitzhugh, which rose supreme up the Athabaska Valley. All that tract of mountains is unknown. It showed some magnificent peaks, offering great attractions and possibilities for the mountaineer, which can be reached in two days' travel from Fitzhugh, when a direct trail is made to connect with that now leading up the Athabaska. Some of the peaks rise to as great, or greater, height than Mt. Geikie (11,016 ft.). This is one of the groups of peaks referred to, the exploration of which will be begun before long, now that the railway has a daily passenger service in operation. In the short season at our disposal, less than three months, it was found impossible to get to it in addition to the Robson group. It seems to have an intricate valley system, and a whole summer will be required to obtain a knowledge of what that system contains.

To cross the Athabaska it is at present necessary to go about two miles below Fitzhugh, where there is a boat owned by the Jasper Park authorities. You then come back up the river on the opposite side and cut across a rocky spur bordering the main valley. Doubtless the roundabout way will shortly be improved upon by a direct trail from Fitzhugh.

While at the Crossing, Capt. J. P. Farrar, of the Alpine Club, England, accompanied by his son and a man-servant, arrived on the train. He was on his way to visit Mt. Robson, and intended returning by the Big Smoky and Stony Rivers. I at once got in touch with him, and had the pleasure of his company at our camp for a couple of days while his outfit was materializing.

The trail up the Athabaska Valley from the Crossing is good travelling throughout its length. It has been put in by the Otto Bros., who are old and experienced guides and outfitters, and who



Maligne Lake From North End Looking South. Photo, Byron Harmon

may be depended upon to give the very best satisfaction to their patrons. For the first two miles, it follows along the flat of the valley and is delightfully attractive. Nearly opposite Fitzhugh it debouches to the south and follows a hollow between two long spurs from the ridge between the rivers. This part of the valley will become a beautiful summer recreation ground for the future city of Fitzhugh. The trail winds between shady firs and spruce trees and crosses little park-like opens. Lakelets are scattered here and there and the path passes close to several of them. One was especially beautiful: the sunlight illuminated it in long slants of silver and the play of colours on the water was very fine— green, violet, blue and purple. The shores were nicely wooded and it was of sufficient size and irregularity of contour to make boating upon it a pleasurable entertainment. There are several other small lakes like it whose borders would be lovely spots on which to camp. This part should be set aside as a park within a park for the special benefit of Fitzhugh, and I can see the day when it will be graced by the handsome summer residences of those who come from the turmoil of the prairie cities to obtain rest and a renewal of health amidst the snow-clad mountains. If these little lakes were stocked, with fish and the fish properly taken care of, they would become a .great additional attraction and asset to the vicinity.

Leaving the park-like spot, the country assumes a wilder aspect. It has been swept by fire and is thickly strewn with windfall and standing lobsticks. The bare, broken and hilly character is redeemed by grassy slopes on the south and west sides of the ridges. Great isolated boulders, transported by the glaciers of a by-gone age are seen on the crests—one in particular had a very striking aspect from the trail. Humped-up humps and rock outcrops are prominent. The trail passes up a little rocky draw and crosses the westerly spur from the ridge between the rivers, thenceforth proceeding up the main southern valley of the Athabaska.

An ascent was made to the high northern end of the ridge referred to, shown on McEvoy's map as "Maligne Mountains." The views were very grand and have been previously referred to. Two stations were occupied, named respectively "Fitzhugh No. 1" (8,724 ft.) and "Fitzhugh No. 2" (8,871 ft.).

Once the main upper valley was attained the trail again became very attractive. It would alternately pass through deep cuts beneath rock escarpments of steep smooth limestone and bunches of fine green fir trees; now into a valley with a nice brook rippling through it, which in places has been dammed by beaver to the detriment of the trail; anon it dipped into a park-like hollow, enclosed by open hill slopes dotted with scattering fir along the sides and crests; again it passed along a tiny lakelet grown with sedges and water lilies, where ducks float peacefully on the surface, unafraid of the unknown intruder.

Ten to twelve miles up is Buffalo Prairie, a more open spot with several little meadows fed by limpid brooks, in which are small sized trout that have worked their way up from the Athabaska River. Here the trail divides, that to the extreme sources of the Athabaska proceeding to the right up the main valley to divide again further on into less beaten trails leading respectively to the heads of the Sun Wapta and Whirlpool Rivers. From the point of departure the trail to Maligne Lake climbs the low ridges on the left and follows them up the side of a minor valley for a space. Buffalo Prairie is an old-established camp ground and an ideal one. There are pine groves, clear fresh water and plenty of good feed for ponies. It is naturally the first day's camp ground from Fitzhugh to Maligne Lake.

The trail now follows the crests of two long ridges for several miles, passing from one to the other. The Athabaska Valley, here three to four miles wide, is traversed by many of these low ridges paralleling the general trend of the valley. A torrent bed is reached, up which the trail

follows for a stretch, and then climbs the hillside by a series of zig-zags to a pass between the hills confining the Athabaska Valley on the east. The trail is well selected, well made and for the most part dry. Throughout the distance from Fitzhugh to the Pass it has prominently in view the splendid peaks on the western side of the Athabaska, and most prominently in view the snow-clad monolith which I have called Mt. Fitzhugh (11,188 ft). Almost directly opposite is the pass through which the Maligne Lake trail makes its way. While ascending by the zig-zags referred to, four mountain sheep (bighorn) went by quite close, and did not seem the least disturbed, although less than 200 feet distant.

The pass is narrow and is bounded on the south' by steep rock faces, while on the north side shale slopes rise to crags and heights of jagged rock. Spruce groves are picturesquely grouped at timber-line and provide a second delightful camp ground, about twenty-five miles from Fitzhugh. On the morning after our arrival a mountain goat stopped to inspect us at early breakfast as he passed along the face of a rock slide beside our camp. From the time he took doing it—nearly half an hour—he evidently could not make head nor tail out of our outfit. The summit is at the east end of the defile and lies at an altitude of 7,300 feet. The pass opens over easy shale slopes, leading to higher crests of broken conglomerate slabs and castellated rock formations.

When taking in a boat to use on Maligne Lake with the earliest party of last season, the Ottos had to dig a path for the pack ponies through the snow and had left one of their impromptu wooden shovels sticking in a snowbank. Since then the pass has been spoken of as "Shovel Pass." It is not a good name, and "Bighorn Pass" would be a better one, for we saw flocks, aggregating thirty-five mountain sheep, in and around it, in three days.

Two high points directly south of the pass were occupied as photographic stations, and are recorded as "Athabaska East, Nos. 1 and 2." Their respective altitudes are 8,663 and 8,454 feet above sea level. They disclosed wonderful views: to the north rose the brown hills and peaks of the massive ridge-like pile between the rivers. In a pocket across the gap lay a little deep blue lake, from which comes the main flow of the stream on the west side of the pass. Directly below was the summit. In every direction, back and forth, crossing and recrossing on the shale hills could be seen innumerable sheep-tracks, like black irregular lines on the brown surface. To the east, sharp and clear, the high pointed grey peaks across Maligne River stood out in seemingly endless array and the valley of the stream could be traced along their base. Southeast was the deep trough of Maligne Lake, not yet visible, surrounded by some fine snow-capped mountains, which rose a little over 10,000 feet. Below the pass, great stretches of open alplands extended for three or four miles, and then shale hills and other passes and more grassy alplands stretching out southward for miles and miles, with sky-blue lakelets in the hollows and a great blunt-nosed hill standing out prominently in the centre. Alpine valleys, clad with groves and clumps of picture spruce lead towards the wider valley of Maligne River, but on the south rose a mighty wall of rock shutting off egress in that direction. It was a scene of fairyland, intensely attractive and uncommon, and one that pertains alone to altitudes such as that at which we now were. In spring and summer the alplands are ablaze with every species of alpine flora found in the district and, on this account, are specially attractive to the traveller. They looked very beautiful in the sunlight, and, if properly taken care of, will remain a natural resort where game can be seen at all times by those passing along the trail. All destruction of game in this particular spot and along the hill slopes enclosing Maligne Lake should be at once absolutely prohibited. It will readily be seen that to preserve these wild animals in their native habitat will prove of infinitely greater value to the country than to advertise them as spoils of the chase, when they will soon cease to exist. Action cannot be too prompt to attain this end.

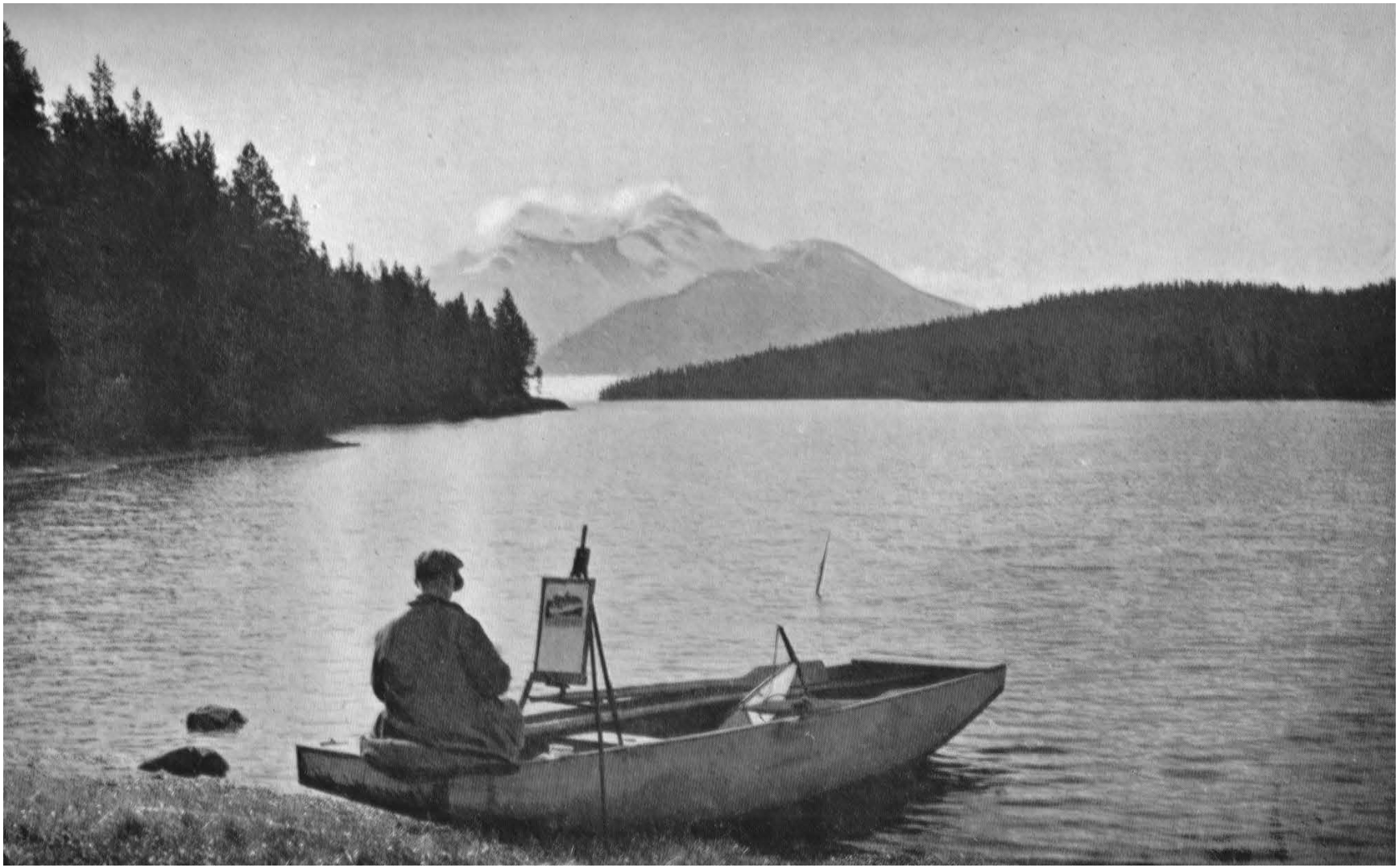
The magnificent rolling alplands are a feature of the region and are to be found nowhere else in the Rockies, that I know of, to such a wide extent. It was a wise selection on the part of the trail-makers to have it cross this particular pass. Beyond the alplands are the snow-caps at the end of Maligne Lake, and then peaks, snow-fields and glaciers in endless array, the peaks rising in pyramids, cones, towers and domes of every conceivable form. Some rose to great heights and loomed up hazily in the distance. It seemed likely that several of the higher and more distant masses were mountains named by previous explorers, but in the vast chaos—a boundless ocean of peaks— it was impossible to identify them, and it will take years of exploration and topographical work before the gigantic tangle is reduced to accurate order in map form. Those lying directly before us were the ones I have referred to as the Maligne Lake group.

Moving the eye still further to the right, Mt. Mostyn was seen rising in precipitous heights as a portal to the gloomy depths of the Athabaska Valley where it narrowed, above the junction of the Whirlpool River. The mountain supported a fine glacier with two distinct icefalls and commanded the approach to a deep timbered valley-pass at its north base, leading to the upper Maligne River. The altitude of Mt. Mostyn is 9,778 feet. Past Mt. Mostyn, the deeply hemmed in upper depths of the Sun Wapta Valley are always in shadow. The principal features were the long reaches of the Sun Wapta and Whirlpool Rivers, displayed in narrow, far-reaching valleys, with open meadows scattered through them. The gaze into the depths of the historic valleys ended all too abruptly. It simply whetted the appetite and created a strong craving for a closer acquaintance. Their heads seemed lost in a maze of peaks of every shade and form, and snow-fields and glaciers peeped out tantalizingly. One great peak with two enormous towers gave the impression of a storm-swept leviathan, floating a hopeless wreck, and seemed to call for the name of "Mt. Derelict." Huge pyramids, all snow-clad, rose into space; great dome-like masses swelled out; sheer precipices, where snow cannot lie, showed black; and serrated ridges with ends cut square off stood clear out against the sky. In this direction also, away and beyond, were seen still greater giants that looked like Mts. Columbia and Bryce, showing dimly through the haze. Deep valleys with silver streams rushing from dark, dismal gorges were on all sides in this vast group of peaks. It is the group I have referred to as lying at the heads of the main sources of the Athabaska, and can easily be reached from Fitzhugh as an outfitting centre.

The old Athabaska Pass trail lies up the Whirlpool River, and now that a passenger train service is operating to Fitzhugh, it would seem to be appropriate that it should be cleared out and made fit for travel with ponies. Unfortunately, it lies without the confines of the Jasper Park, and it is doubtful whether the Federal Government will take action.

Nearly opposite stood Mt. Fitzhugh, rising misty in the sun-haze like a dim giant. Its 11,188 feet of altitude were, for the most part, covered by snow and a low, flat glacier swept around its northern base. Directly north of it the black, vertical faces of Mt. Geikie showed conspicuously; and, one on each side of it, like two gigantic fangs, the towers that flank the mountain on the east and west; then a jumble of peaks, spires and pyramids, crags and precipices. The sun was low behind the group and great shafts of light swept upward like an aurora, giving a mystic, far away look, while rolling billows of white cloud topped this glimpse of a new and eerie region. I have classed the Geikie coterie as a group by itself. While access to it may possibly be had by valleys tributary to the upper reaches of the Whirlpool River, there is also a valley opening from the main Athabaska Trench northward of Mt. Fitzhugh, which appears to lead into the heart of the group and up which a trail will probably, some day, give access to it.

It is impossible without actual knowledge to furnish a conception of the vastness, the



Mr. Proctor Sketching On Maligne Lake, Looking Northwest. Photo, Byron Harmon

grandeur and the difficulty of these last two groups of mountains. They will provide work of the finest order and will require several season's explorations to ascertain the many wonderful natural features of scenic splendour, and of geological and topographical interest they are bound to contain. They, as also the Maligne Lake Group, afford splendid fields that are almost, if not quite, unknown and call the explorer with no uncertain voice.

On the way home a flock of ten bighorn were seen cropping the sweet tufts of grass on the opposite slopes, making fifteen seen so far. It tantalized tremendously Konrad's sporting instincts to see their tails and sides flashing white in the sun as they moved here and there. A porcupine was on the hill crest in the mouth of a small tunnel through a snowbank, up which it seemed to have come. What it was doing there is hard to say, for the place was above vegetation and things to eat.

On the opposite side of the pass a station was occupied at an altitude of 8,874 feet. It is recorded as "Medicine Lake Station," because it disclosed a peep at Medicine Lake in the Maligne River Valley, about ten miles up from its mouth; a blue sheet of water, four miles long by a mile wide. Directly below to the north a fine alpine valley leads to it from the shale hills east of Bighorn Pass. Our hunters described the valley as very rough and broken, but excellent for goat and bighorn. Across it, on the north side, a huge, ragged rock tower rose to 9,224 feet, standing in its isolation like an immense obelisk. The station peak is a dome-shaped mass with very remarkable precipices on the north face, falling sheer fully a thousand feet and standing out in great tiers. It also shows precipices on the south side. The summit is nearly flat and is composed of rock slabs thrown together in wild confusion. The formation is a conglomerate in which round, egg-shaped pebbles of quartzite, of varying sizes, are a large component.

To the southeast, some ten miles distant, could be seen Maligne Lake. It showed a turquoise blue sheet of very irregular form and reached in the distance to narrows, where thickly timbered islands and points shut off the upper stretch of water which lay beyond. The upper reaches were enclosed by snow-topped peaks with a number of glaciers showing in the hollows.

Between our station and the lake lay a rough, rocky burnt-over country through which the Maligne River flowed in a deeply-cut canyon. To the south-west we could follow the valley of the upper Maligne River, densely timbered but showing some considerable stretches of open golden meadow-land. It was a delightful scene and the peak will prove a simple and favorite climb, from which visitors can obtain a comprehensive knowledge of the surrounding country.

On the way up we had to round the shoulder of a shale hill; looking back a little later we saw on its crest two bighorn; one a fine ram. Although we had passed quite close our approach had not disturbed them. While working at my transit on the crest, a wild shout from Konrad, who was sitting some fifty feet away, caused me to look up; as I did so, a bighorn passed between us within twenty-five feet of where I stood. Konrad declared it had jumped right over him, but if so he must have been asleep. Again, later, a band of fifteen crossed the hill within 100 feet of us, and while on the way home we came on one evidently asleep amidst the rocks. Its back was turned to us, and, although we approached within thirty feet it made no sign. Konrad had a .44 Colt pistol with him, but in his wild desire to get it off missed his aim. This was an exceptionally fine ram, and made a number of nineteen we had seen on this peak in one day.

The trail descends to the valley of Maligne River by way of a very charming alpine valley that leaves the alpland basin, already described, about its centre on the east side. We occupied a station to the south of it near the head, at an altitude of 8,188 feet. It is called "Maligne Lake N.W."

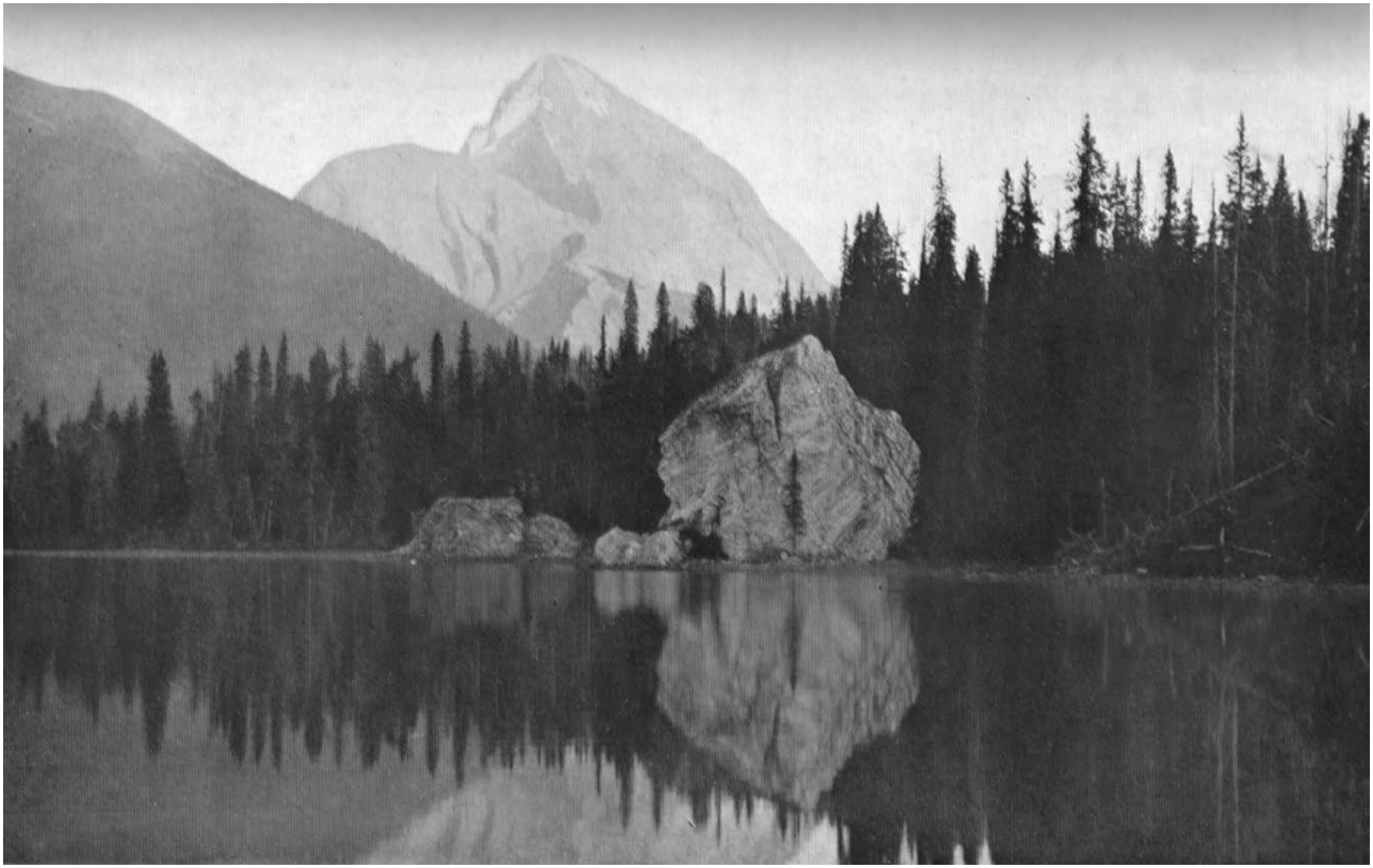
Before leaving these beautiful alplands, so gorgeous with brilliant flowers, so filled with animal and bird life—for here the handsome ptarmigan and the whistling marmot, as well as the little rock hare and ground squirrel, are specially populous —I must make mention of a very fine rock-slide on the north side of the basin. The fall, which is a large one, has come down the adjacent mountain side and spread in a perfect fan-shaped layer of wide area over the grassy alps. It is a remarkable instance where the motion has been uninterrupted and looks to be of comparatively recent origin.

While here we met Mr. Proctor and Dr. Rogers, of New York. Mr. Proctor had just returned from Maligne Lake, where he had been sketching. He is a well known artist. Both were delighted with the locality, and expressed an intention of returning. Indeed, although Mr. Proctor had to go, Dr. Rogers could not yet tear himself away, so, as we had to move on to the lake, he kindly offered to accommodate our two hunters, Walcott and Blagden, at his camp. They were old friends, and together they spent a week in this heaven of huntsmen. The result was the securing of four bighorn, of which one was a ram with excellent horns.

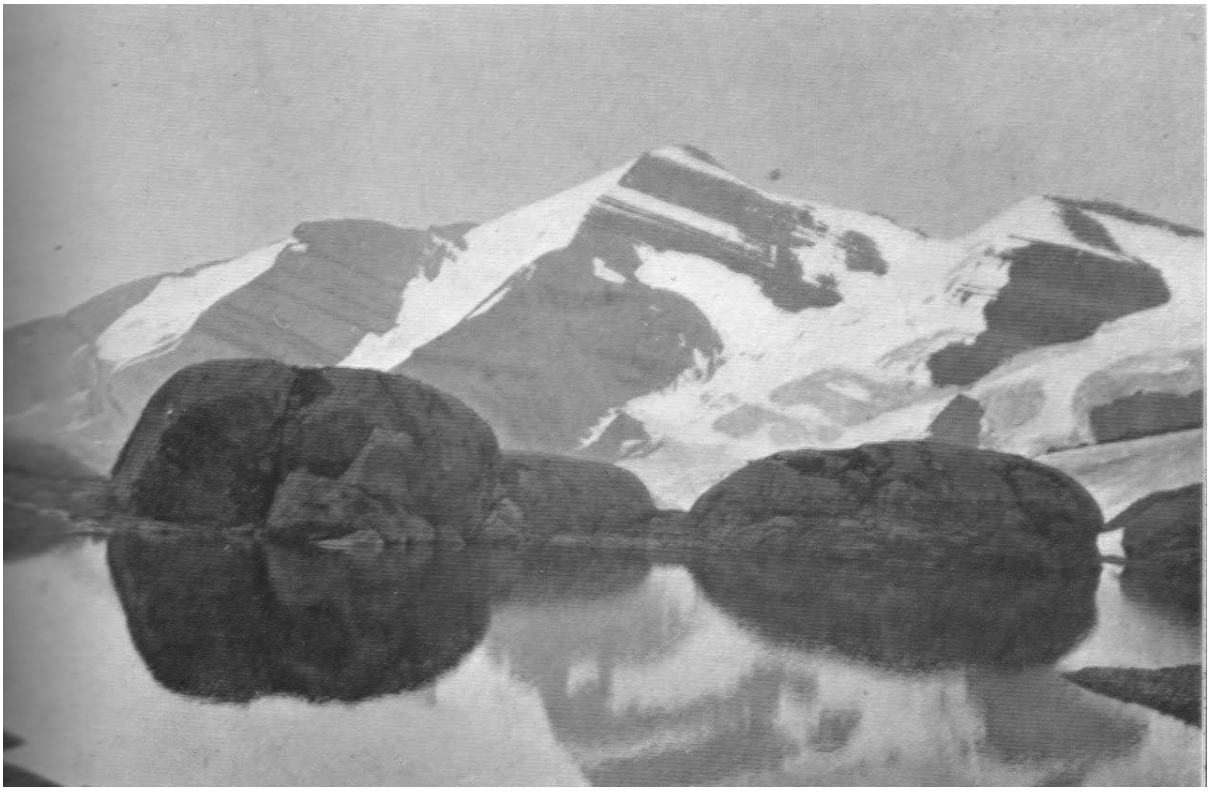
The floor of the Maligne Valley is of very deep interest. It is probably five or six miles from where the valley of the trail debouches into it to the north extremity of Maligne Lake. The floor has a width of from one and a half to two miles, is very rough and uneven and has been subjected to severe glacial action. It is all burnt over, and here and there, in the hollows, are bunches of green pines and second-growth jack pine. The terrain is wonderfully broken. Everywhere are perfectly cone-shaped hills rising to as much as fifty feet in height. Locally they call them "Bee-hives." They are for the most part perfectly rounded cones of boulder-clay, boulders and gravel, only of giant proportions. I do not know how they have been formed. Dr. Coleman tells me that they are probably geological features known as "drumlins," and that there is considerable doubt as to how they have been formed, although it is supposed to be done by action taking place on the under side of a glacier—the side which rests on the ground. In the valley they are very frequent and close together, are sparsely sprinkled with fire-killed pines, and are now nourishing a second growth of scattered jack pines. All are not perfectly cone-shaped, some having an elongated form.

A number of steep escarpments are also seen following the trend of the valley, which are undoubtedly old lateral moraines. The glaciers of a by-gone age in this weird valley must have been of large size and extremely active to produce the evidences that are left. Scattered through the tract are a number of little, gloriously blue lakes of half a mile or more in length. Eventually, after a sinuous winding between and around the cones, the trail comes out at the river side and for, perhaps, two miles follows along the edge of its deeply-cut rock bed. The path is picturesque, leading through shady pine woods beside the river. The water is a clear greenish-blue and flows swiftly down the canyon in a series of rapids. It was a perfect afternoon when I came to the lake and I could see no difference between its color and that of the cerulean blue sky. This was not the result of reflection, for the sky soon clouded over, and the water of the lake retained its clear sky-blue color. At the upper end of the lake, where the glaciers discharge their flow, the color becomes a translucent turquoise-blue, doubtless owing to the greater quantity of silt held in suspension near the glacial sources.

The upper Maligne River enters the lake on the west side about five miles from the north end. The lower Maligne River leaves the lake directly from the north end. Around the lower end, for about two miles up, all the timber on the western side has been burned. It is a sad blemish, for otherwise throughout the entire length the surrounding forest is a beautiful green: golden green where the pines grow and dark blue-green when the forest covering is of spruce.



Isolated Boulder On Shore Of Maligne Lake. Photo, Byron Harmon



Glacier Boulders At Lake On Rearguard Col Close To Mt. Robson. Photo, Byron Harmon

Huge Boulder in Maligne Lake Presumably Transported by a Glacier. Photo, Byron Harmon

Seen from the adjacent heights the lake shows a very irregular outline, with numerous well-timbered points stretching into it, which create delightful little bays and lagoons. About two-thirds of the way up the opposite shore lines are but a few hundred yards apart. Here it is very irregular and several points stretch out in such manner that they hide the passage way and give the appearance of two separate lakes. Here, also, are several small timbered islands, which add greatly to the general picturesqueness and create several channels.

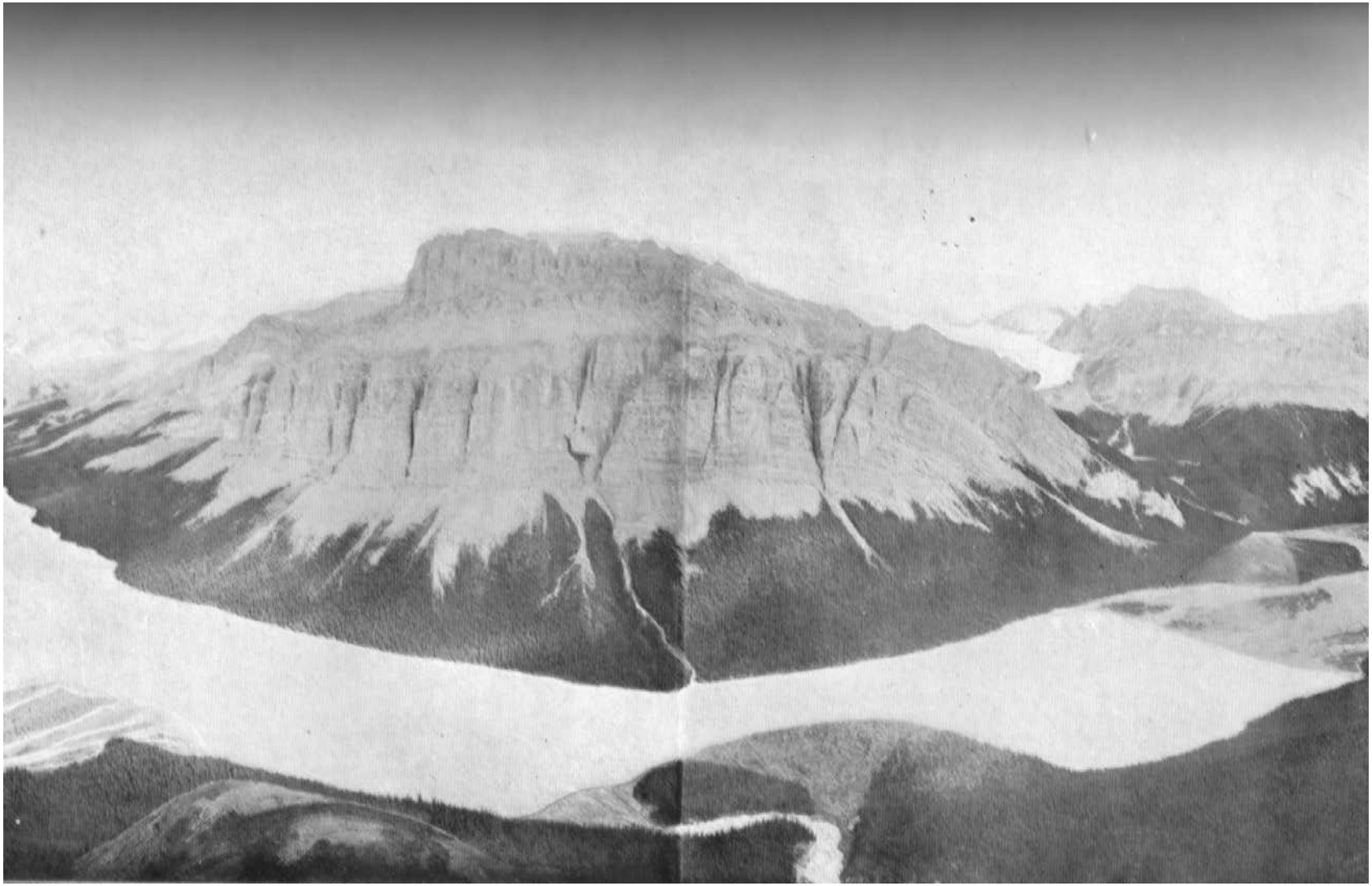
The lake is about fifteen miles long, or a little less, and the Narrows nine or ten miles from the lower end. One feature of special attraction is that you can walk for miles along the shores, which, although very stony in places, are generally clear of fallen timber and other obstacles; while at parts, particularly at the Narrows on their eastern side, are shingle bars that make travelling very easy. Generally speaking, the woods along the lake margin are fairly open and little difficulty is experienced in finding a way through them.

A good site for a chalet can be found at the extreme north end on the east side of the river, where are charming woods and behind them grassy slopes rising to sharp limestone peaks. A road up the Maligne River Valley would give access from the railway and would be shorter and more direct than the present trail, which is estimated at 35 miles, while I do not think a road up the river valley would exceed 15. There are several suitable sites along the shores of the lake, to all of which it would be possible to build a road; it is only a matter of selection. Even if a road were not built beyond the north end of the lake, two or three light motor launches would easily and quickly convey tourists and supplies to any point by a very delightful water route.

We found a good rough boat, built by the Otto Bros., on the lake and used it to make the trip from end to end. A sufficient number of stations were then occupied to enable the lake to be mapped with a fair degree of accuracy.

The lake lies at an altitude of 5,525 feet. The key-note of the eastern margin is a high central peak (altitude 10,091 ft.) of grey limestone capped with snow, rising 4,566 feet above the water surface. From all points of view it stands alone, and suggests the name of "Mt. Lone Spur." I had so named it, but find that another name has been given by Mrs. Charles Schäffer that has been adopted by the Geographic Board of Canada. Mrs. Schäffer has spent many summers in the Canadian Rockies, first coming to them with her husband, the late Dr. Charles Schäffer, of Philadelphia, a charming personality, an intense lover of Nature and a good botanist, altogether a man whom it was a delight to meet. So frequently has Mrs. Schäffer visited the Canadian Rockies, that she is altogether Canadian in her love for them, and has done much as an original explorer to bring their attractions to public notice through her writings and lectures. She first visited and brought to notice this beautiful lake, which had previously been known only to the Indian and the hunter. She has, therefore, undoubtedly the right to name its features. I could wish, however, that personal names had not been so prominent, for the surrounding peaks have many striking characteristic features that seem naturally to supply the names.

The lake is very beautiful, and will become one of the-most distinguished attractions of the Jasper Park, provided the boundaries of that park are again enlarged to include it. It is not comparable with any lake I have yet seen, and is marked by many characteristics all its own. Our trip up and down brought a number of things to notice. With the exception of the lower western corner, which is burned over, the lake is surrounded by green pine and spruce climbing the sides in more or less open formation to the limit of timber growth. Many open grassy slopes are seen mingling with the pine forest and lying above it at the base of the bare rock buttresses that reach outward from the enclosing mountain masses. Lying along the water's edge are immense blocks of



South End Of Maligne Lake. Photo, A.O. Wheeler
Showing The Pallisades Of "The Thumb"

rock that, in some cases, seem to have broken from the rock walls above and to have come crashing down to the level of the lake. In other cases, where there are no nearby heights, they seem to have been transported by and dropped from the glaciers that at one time filled the bed of the lake. Here and there very large blocks stand out in the water like islands. Their shape is unusual and indicative of their origin, and the small spruce trees that have sprung from the seeds resting on their crests give them a very picturesque appearance. In one special case, about three miles up on the west side, a great isolated block is quite a distance from the shore. Close by is a little island separated from the mainland by a narrow, shallow channel.

Between four and five miles up the lake the upper Maligne River comes in from the west. At the point of junction is a low spruce-covered flat, and a wide timbered valley leads to the south. An old Indian trail, in very fair condition, follows the western slopes to the Maligne Pass, about fifteen miles distant. A descent of the Pass on the south side brings you to Poboktan Creek, the valley of which in turn leads westward to the Sun Wapta River, one of the two principal sources of the Athabaska.

Five miles further up the lake are the Narrows. The approach is guarded by a tiny islet of above two acres, thickly clad with spruce. I named it "Spruce Island," but I think Mrs. Schäffer has given it another name. Beyond it a point runs out from the east side close to which is another tiny islet, creating two narrow channels between the larger expansions of the lake. As already stated, the lake is about fifteen miles long by one and a half miles at its greatest width. The Narrows lie about two-thirds of the way up and the width of the larger channel is about 300 yards. The surroundings are very pretty. There are a number of small islands close to the west shore and some rock shoals on the east side. On this side also is a level flat covered by open timber with a wide shingle beach along the water's edge. It is a delightful camping spot, well sheltered and safe, and the woods are full of rare flowers, such as orchids, wintergreens, etc. Directly opposite an icefall tumbles from the masses of snow resting on the north faces of the two most prominent peaks of the group surrounding the lake.

Beyond the Narrows the lake extends for about four miles, widening to a mile and swinging eastward for another mile or so. This upper portion of the lake is most interesting. There are four distinct glacial valleys opening to its perimeter. The two most easterly ones join in forming a morainal delta at the extreme end of the lake, which extends outward in the form of a great fan of shingle, boulders and boulder-clay. Each of the other two valleys has a similar fan-like delta reaching out into the water. They are grown with patches of spruce and willow, and present from a height a network of streams, glistening like molten silver in the sunlight—the many channels by which the outflow of the melting snow and ice of the glaciers finds its way to the lake over the gravel bed which it has formed. At the heads of these valleys are interesting looking glaciers and icefalls.

It is not unlikely that at the head of the south-eastern valley a pass may be found that will lead to the valley of Rocky River, up which an old Indian trail now exists, and which is said to contain many delightful alpine features. An alternative route could thus be had for the home trip of visitors to the lake—one that would bring the traveller back to the railway opposite the site of the old Jasper House. Even if such a pass is not possible, one may be found near the lower end of the lake, and it is strongly recommended that a connecting pony trail be constructed by the proper authorities as soon as possible.

Between the centre valley and the most westerly one, an ascent was made to an altitude of 7,700 feet and a station occupied that commanded a complete view of the upper end of the lake.

Directly across the south-east corner is a fine rock mass with a little blunt point projecting from the snows which form its crown. I think it is what Mrs. Schäffer calls "The Thumb," The face towards the lake shows vertical cliffs divided at regular intervals by deep chimneys which make the appearance of gigantic palisades. These might aptly be called "The Palisades." I had named the peak "Mt. Bastion," owing to the mighty bastions by which it seemed to be supported.

The glacier at the head of the westerly valley is much shrunken and has now the appearance of a hanging glacier, clinging to the cliffs below which it lies. At the end of the lake the water is of a creamy turquoise blue, very beautiful in colour with a soft velvety look when seen from a height.

On the way to the peak ascended we saw two goats at very close quarters, and for a long time could hear them sending down rocks as they slowly took their departure along what seemed to be the vertical face of the cliffs. Again, during the day, a flock of some ten or more was seen moving from spot to spot grazing on the slopes across the central valley. Indeed, so numerous were they that on the way down the lake, this seeing of goats resolved itself into the game of "Find a goat?" The demand would hardly be uttered before Konrad would exclaim "I see one," and he would be invariably correct. This son of Nature has eyes as sharp as needles and there is little that moves on the slopes or crags that he does not see.

Snow fell on September 16th and clouds generally blotted out the landscape. However, I succeeded in getting one more station, on the east side, at an altitude of 7,021 feet. It gave the western shore line and showed to good advantage the islands, points and irregularities of the Narrows portion of the lake.

On the same day (September 17th) we returned to the main camp at the north end, to find Phillips had secured two goats, some of which we had for supper, both as soup and roast.

The weather during this latter part of the expedition had been very broken, but the few fine days enabled us to secure data to map the lake and its surroundings, and enabled Harmon to obtain some very beautiful pictures. On the 18th it settled down steadily to the September snowstorm and thereafter, for a long time, the country became practically a snowscape, and all further possibility of doing topographical work was over. It had been planned for the party to return by way of Indian trails across the mountains to Laggan on the C.P.R. and thus investigate the possibilities of a favorite tourist route from steel to steel by pack-train. Such a route is possible by proceeding directly up the Athabaska and its eastern branch, the Sun Wapta, but a decidedly more picturesque and delightful route lies by way of Maligne Lake, as also a better trail.

The snowstorm rather upset things. I had to catch a boat at Vancouver on the 29th September and the Smithsonian party were due in Washington early in October. The snow made it doubtful whether we could make our connections if we went across country to Laggan, so I returned with the Smithsonians to Edmonton and sent Harmon, Konrad and Kinney across the mountains in care of Donald Phillips, whom I knew would get through, if anybody could. Notwithstanding the heavy snowstorm which lasted from the 18th until the 23rd, with but one day's intermission, Phillips got through in eleven days from Maligne Lake. The distance is close on 120 miles— about 150 miles starting from Fitzhugh.

The heavy snowfall made travelling very bad, and covered the surface and surrounding mountains with a mantle of white. This naturally prevented a useful detailed report being made, as the snow covered everything, and the travel being correspondingly difficult, no side explorations could be made and what information was obtained had to be largely guessed at. The snow covering remained until the party was well below the Sun Wapta (Wilcox Pass) and a considerable distance down the Saskatchewan River.

The fact, however, was established that a good trail can be carried over the Maligne Pass, at the head of upper Maligne River, at an altitude of about 6,900 feet and down its southern slopes to Poboktan Creek, which is followed to the Sun Wapta River; thence up the valley of the stream to the Sun Wapta or Wilcox Pass, altitude about 8,000 feet. From here on, the old trail down the North Saskatchewan is followed to the mouth of Mistaya Creek, or Bear Creek, according to the old local name. Up Mistaya Creek the path leads to the summit of Bow Pass, altitude 6,870 feet, and so down the Bow Valley to Laggan.

Thus, the first trip through the mountains from steel to steel of the two great transcontinental railroads was made by a party of the Alpine Club of Canada—all members. There is little doubt that it will become a favorite expedition in conjunction with the great peaks on the west side of the Athabaska above Fitzhugh, and also with a visit to Maligne Lake. The trails, therefore, should be taken in hand and made passable. No doubt much will be done in this direction by the outfitters who take parties across, but it will be slow and unsatisfactory work unless the Governments and the Railways lend their aid. As previously mentioned, one large party from Chicago is already planning to make the expedition next summer, and I do not think it will be the only one. There is no other route of so great a length that presents such a continuous exhibition of magnificent alpine scenery of every form, and Fitzhugh will be a natural centre for the outfitting and starting of such expeditions from north to south.

A report by Mr. Kinney is appended. I have also added a private report by Donald Phillips. He is a practical man and knows about trails, so I think that his estimate of the cost per mile from Maligne Lake to the Sun Wapta Pass would be a conservative one. To the summit of the Sun Wapta Pass is essentially within the Grand Trunk Pacific sphere, in the same manner as with the Canadian Pacific sphere to the summit of Bow Pass. Between lies common ground. I do not suppose that within the distance from Fitzhugh to the Sun Wapta Pass there are many miles where absolute trail construction would be required and, most likely, the clearing out of fallen timber would permit of a passable trail that would answer all requirements for some time to come.

Conclusion

The foregoing report is a collection of notes made at the time of the exploration and elaborated later. Both text and illustrations serve to show that the northern alpine region is fully equal to the best that lies in Canada. The magnitude of it is so stupendous that it has been found impossible to do it even an approach to justice in details. These will have to be worked out by subsequent visitors as has been done in other similar regions that are now better known.

Although there are no great peaks to climb immediately along the line of the railway and the low altitude of the Yellow-head Pass and the railway bed necessitates a laborious and irritating climb to timber-line, over slopes covered by fallen tree trunks, yet there are five distinct groups of great peaks within easy reach: the Robson group, the group lying west of Tete-Jaune Cache, which has yet to be discovered, the group of which Mt. Geikie is a centre, west of the Athabaska and south of Whirlpool River, the group surrounding Athabaska Pass and the group that focuses around Maligne Lake.

There are already a number of excellent outfitters and guides in the district, of whom Otto Bros., of Edmonton, and Donald Phillips, of Heatherwood, Alberta, are specially competent and reliable, owing to their skill as hunters, their ability to climb and their training in all kinds of water travel, and as soon as the trans-continental road is in operation from coast to coast, trails to the various centres will give ready access to the thousands of visitors that will crowd in to enjoy the new playground opened up by the Grand Trunk Pacific Railway.

Trail From Maligne Lake To Laggan.

Report Of The Rev. G. Kinney To The Alpine Club Of Canada.

Sept. 18, 1911.—From Camp at foot of Lake Maligne we followed the lake shore for a mile, then struck through pine timber and over old rocky moraine rock on easy grade for five or six miles, making an elevation of some 570 feet; then our way led down to the Maligne River, up which we followed by easy grade till we had gone some fourteen miles. Good goat and sheep country.

Sept. 19, 1911.—Snowing hard; some swamps; several inches of snow, but succeeded in crossing the pass and camped below tree line on its south side. Good trails.

Sept. 20, 1911.—Snowing. Rough trail; zig-zag trail near Poboktan River. Stormed all day. Cut trail down Poboktan to Athabaska, where we camped.

Sept. 21, 1911.—A foot and a half of snow. Yet we broke camp and ploughed all day through the snow, making some eight miles. Forded the Athabaska; swamps; saw some ducks. Passed a couple of Dr. Coleman's camps of 1907.

Sept. 22, 1911.—Wallowed all day in deep snow. Beautiful country; some swamps. Followed Athabaska up past eight or ten miles of shingle flat and climbed the Wilcox Pass by zig-zag trail for a thousand feet and camped near tree line.

Sept. 23, 1911.—Climbed through deep snow to the summit of the pass, and then crossed its long miles of weary snow, Splendid view of Mt. Athabaska; then followed the Saskatchewan S.S.E., camping away below tree line.

Sept. 24, 1911.—Good camp site. Sheep, deer, fine falls and got fine glimpse of Columbia Glacier. We followed a heavily timbered valley bottom for some twelve miles.

Sept. 25, 1911.—Shingle flats. Six hours of hard work. Fine mountains. Pine woods. Goats. Camped at foot of Mt. Wilson. Good site.

Sept. 26, 1911.—Fourteen miles. Fine day. Forded Middle Forks and Bear Creek. Zig-zag trail in part. 800 feet by aneroid in four hours. Heavy timber; rough trail. Bear tracks in snow. Lots of fish. Camped beneath Kauffmann Peak.

Sept. 27, 1911.—Passed the Waterfowl Lakes to-day, and camped within a few miles of summit of Bow Pass. Lots of feed. Some soft places along trail.

Sept. 28, 1911.—Much fallen timber; some soft places. Travelled for miles through beautiful alp country. Good big game country. Fine camp spots. Easy grade down from pass to Bow Lake, where we found the new Government trail to Laggan.

Sept. 29, 1911.—Followed Government trail all way to near Laggan.

Sept. 30, 1911.—Reached Laggan this a.m.

ANEROID READINGS.

Sept. 18	11.45 a.m. Maligne Lake	5630
	1.10 p.m.	6060
	2.00 p.m.	5810
	6.00 p.m.	6100
Sept. 19	7.00 a.m.	6090
	3.30 p.m.	6850
Sept. 20	7.15 p.m. 6.25 a.m.	6800 6925
Sept. 21	4.30 p.m. 8.00 a.m.	5450 5400
Sept. 22	8.25 p.m. 8.20 a.m.	5350 5320
	3.15 p.m.	5850
Sept. 23	5.30 p.m. 6.25 a.m.	6850 6900
	12.00	7475
	12.45 p.m.	7900
	9.30 p.m.	6600
Sept. 24	8.10 a.m.	6600
	4.10 p.m.	5300
Sept. 25	6.00 a.m.	5325
	8.15	5300
Sept. 26	6.45 a.m.	5350
	8.50 p.m.	5900
Sept. 27	6.50 a.m.	5850
	8.45 p.m.	6425
Sept. 28	7.00 a.m.	6375
	10.15 a.m.	7400
	12.00	6900
	8.15 p.m.	6500
Sept. 29	6.30 a.m.	6600
	9.00 p.m.	6250
Sept. 30	6.00 a.m.	6250
	12.00 Laggan	5650

Fitzhugh To Laggan

Report By Donald Phillips To A. O. Wheeler, Director Of The Alpine Club, Canada.

Early in September, 1911, we swam our horses across the Athabaska River below Fitzhugh in the Jasper Park, on the line of the Grand Trunk Pacific Railway. Our party at that time consisted of Mr. A. O. Wheeler, Director of the Alpine Club of Canada, Rev. Geo. Kinney, of Mount Robson fame, Konrad Kain, the Austrian alpine guide and also official guide of the Alpine Club of Canada, Casey Jones as cook, and myself as packer, guide and outfitter. Mr. Ned Hollister and Mr. Riley, of the Smithsonian Institute, who had been with us, remained at Swift's Ranch, near Fitzhugh, to collect birds and small mammals, and to await the return of the members of the party who were not going to make the whole trip from steel to steel.

Three members of our party had preceded us to Maligne Lake. They were C. D. Walcott, Jr., H. Blagden, and Byron Harmon, of Banff, Alberta, with my second packer, Jas. Harvey, in charge of the outfit.

Byron Harmon was the photographer of the expedition, C. D. Walcott and H. Blagden were the big game hunters of the Smithsonian party.

The weather was fine and warm during the day, but the frosty nights had already started to change the shades of the foliage and grasses to their autumn colors. The trail from Fitzhugh to Maligne Lake is a good one, built by the Otto Bros, last spring. Ten miles out from Fitzhugh is Buffalo Prairie, which is on a low bench along the Athabaska River and through which several streams flow which head on the. mountains. These streams have rainbow and bull trout in them,. From Buffalo Prairie you start climbing up the Big Horn Pass., 3,500 feet higher than the prairie, and from the Pass to Maligne Lake is mostly down hill. The distance from Fitzhugh to Maligne Lake is about thirty miles by pack-train.

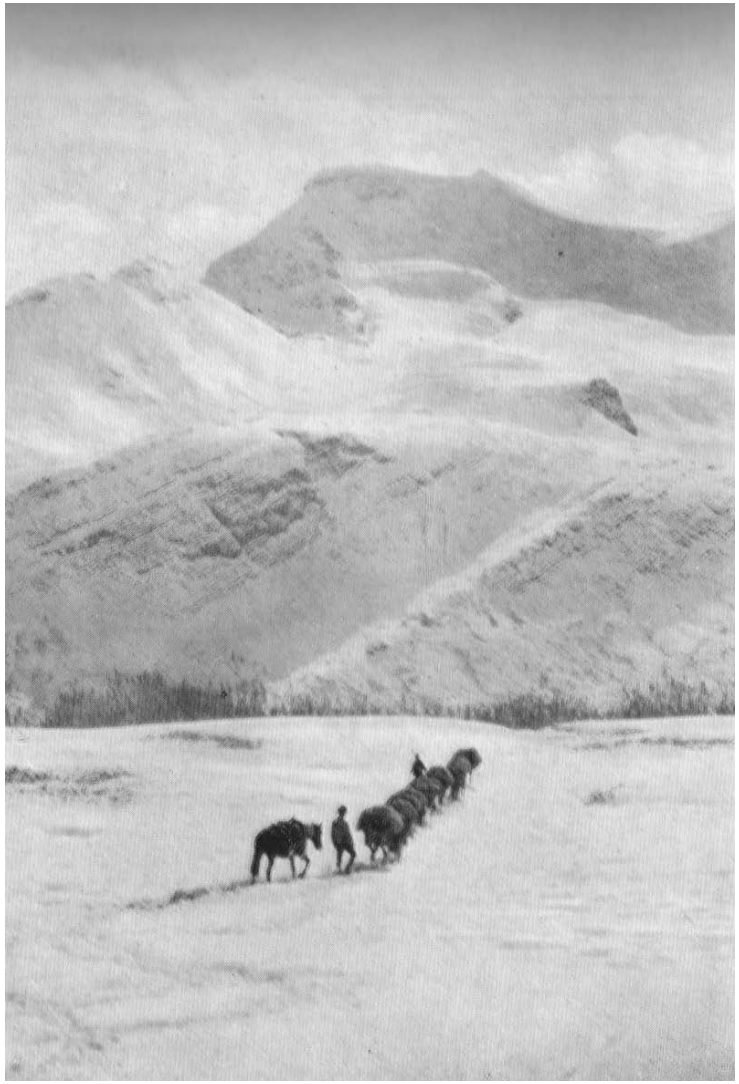
We reached Maligne Lake the fifth day after leaving Fitzhugh, having lain over two days while Mr. Wheeler and his assistants, Konrad Kain and Mr. Kinney (who were conducting a topographical survey), got several stations on peaks that we passed en route.

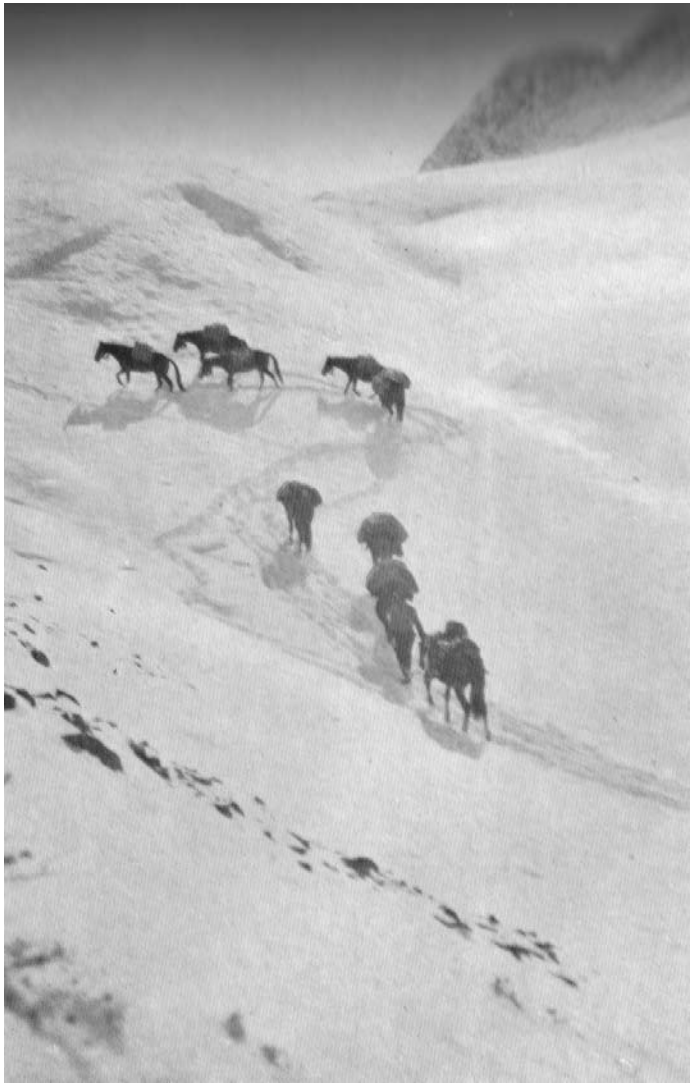
Maligne Lake has no equal that I have ever seen. Water as clear as crystal stretched away for fifteen miles or more into the very heart of the range. The shore line is grand—points, bays, beaches, towering cliffs and great boulders of varied colors; and back and above it all dark green jack pines and spruce cover the mountains to timber line; while above it rise the snow covered peaks of the mountains.

There is a great deal of big game to be seen about Maligne Lake, especially goats and sheep. The advance guard of our party counted ten goats on the mountains across the end of the lake from their camp the first night they camped there, while we saw thirty-four sheep and a goat on our way into the lake.

The weather changed after we arrived at the lake, and the next few days were wet and cloudy. Harvey and I cut a trail from the foot of the lake to the Maligne River, which comes into the lake about five miles from the outlet, and when Mr. Wheeler and his assistants got back to camp from the head of the lake on September 17th, we were all ready to start on to Laggan. So on the 18th we divided the outfit. I took nine head of horses, and, with Mr. Kinney, B. Harmon, and Konrad Kain, started southward; while Harvey, with the rest of the party and outfit, returned to Fitzhugh.

That day we left Maligne Lake behind, and got several miles up the Maligne River. The





The Return From Maligne Lake To Laggan. In The Wilcox Pass. Photos, Byron Harmon

following day we crossed the Maligne Pass over on to a branch of the Poboktan River. There is a good deal of soft ground on the Maligne River, but the worst trouble was the cripple brush out on the river flats, and small knolls or mounds like ant hills. The pass is easy and is very little above timber line, but there was about a foot of snow, so we had trouble in keeping on the trail.

On the morning of September 20th we passed up in a snowstorm, which turned to rain when we got down to a lower altitude. The branch on which we came down to the Poboktan from the pass was only about four miles long, but we got into a lot of down timber before we got to the main stream. The trail went up the Poboktan, and as we wanted to get down to the Sun Wapta River, we had to cut a trail most of the way. Windfalls and muskeg were all the way, so that we left the river altogether and cut across the ridge and came out on the Sun Wapta above the mouth of the Poboktan about two miles, tired, wet and hungry, having travelled about seven hours and covered about eight miles. That night before supper was over it started to snow as if it were two months behind the time and wanted to make up.

On the 21st there was a foot of snow and it kept on snowing hard all day. We got a late start and could find no trail along the Sun Wapta. It was snowing so hard that we could only see a short distance ahead at any time. We had only gone a mile or so when we struck the big rock slide and had to go back and hunt a ford. We found a pretty deep one. Mr. Kinney and I crossed with the pack-train and Konrad and Harmon kept on up the side they were on. We made about six or seven miles that day in snow knee deep, and no sign of a trail all day; but it cleared off in time for us to camp, and got cold.

September 23rd dawned clear and cold and the river was running full of slag. We started early and travelled on flats and shingle bars most of the day until we left the river and started up the hill on the left hand side to the Wilcox Pass. The hill was very steep and dangerous for the horses with so much snow on the ground and sloping rock. Part way up the hill we came to an open slope, and at the top of it struck a blazed trail leading into the timber, and finally came to a trapper's shack, but could find no trail any further. As it was late and snowing again we pitched camp.

Next morning we were up early, but the horses were scattered and I had quite a time to find them and get them all together again, but by hunting them I found the trail. However, we lost it again near timber line, so I gave up trying to follow it, and keeping well up, came out on the pass above the trail ordinarily used. The snow had not drifted on the pass, and so we had no difficulty in crossing except that the sun was very bright and burned us pretty well. When we again dropped down into the valley at the south end of the pass we were surprised to find that we were still on the Sun Wapta, but a mile further on we crossed the Divide and started down a small stream towards the Saskatchewan River. At the end of seven and a half hours' ride we camped at the Nigel Creek camping ground. Tired, wet and cold, we scraped away the snow and prepared for the night.

On September 24th we got an early start and had very little trouble in keeping on the trail which, for several miles, kept up close to timber line along the side of the mountain. But at last we started to go down and finally came out on a shingle bar on the North Fork of the Saskatchewan River. Here the snow was only a few inches deep and was fast disappearing. We camped that night a few miles above the junction of the north and west branches of the Saskatchewan.

The following day we made good progress, as most of the time we were travelling on flats or shingle bars above the river. We camped that night above the falls on the north branch of the Saskatchewan. The next morning we passed the falls where we saw a big black bear, and forded the river below where the north and middle branches come together, starting up Bear Creek. The trail up Bear Creek beats anything I ever saw for windfalls; if these were cut out and the trail straight-

ened the distance would be shortened by about a third. We camped that night opposite Pyramid Mountain.

Next day we got to within three miles of Bow Pass and camped. The day following we crossed the Bow Pass, passed Bow lake and the Crowfoot Glacier on the new trail that had only been finished a short while, and camped that night where we could see Mt. Whyte and Mt. Temple, near Laggan.

Next day we kept along the new trail which stays up high on the side of the mountain all the way, and camped that night six miles from Laggan, as I had been informed that there was no feed near Laggan for horses. But when Harmon and I rode on into Lagan we found that there was plenty of feed a mile and a half from town. Harmon caught a train for Banff, and I took the saddle horses back to camp. We all got to Laggan by noon the next day and unpacked, and then took the horses back to feed and turned them loose for a few days' rest, which they needed pretty badly, as they were all more or less footsore from so much rock and shingle bar.

The trip was done in twelve days from Maligne Lake to Laggan. It is one of the most interesting trips in the mountains. The mountains all the way are high and very beautiful A large number of glaciers are also passed en route.

When a good trail is put through from steel to steel it wilt be a very popular trip. The cost of a trail will not be very great. There is about five or six miles of it that will have to be graded and "switchbacked," but very little bridging to do. Going back we had a lot of trouble on the Sun Wapta and Athabaska, but a very fair trail can be put up all these streams to the foot of Wilcox Pass for about fifty dollars per mile. We made the return trip Fitzhugh in thirteen days, but we travelled pretty long hours. We got a bear on the way and saw plenty of sheep and goats, but did not kill any as we did not need them.

The Finding Of Lake Maligne.

By Mary T. S. Schäffer.

In the summer of 1908, a party of six, three guides, three tourists, and twenty-two horses, left the well known station of Laggan on the main line of the Canadian Pacific road, traversed the Bow Valley, over the pass of the same name, descended Bear Creek to its junction with the Saskatchewan, crossed that river not a day too soon (as the spring floods had already started), ascended the North Fork as far as Nigel Creek, travelled up Nigel Creek and across Nigel Pass, then down the main branch of the Brazeau River to the junction of that stream, with the waters from Brazeau Lake; then ascending this last stream, crossed it at its exit from the lake. From this point the way was an unknown one to the entire party.

The route, in spite of the rather lurid descriptions I have seen written of it recently, is a very travelled one, very easy and very beautiful. Every mile of it, barring the fireswept district just north of Laggan (and that has been materially improved by leaving the old Indian route in the valley and following the eastern hill-slopes), a child could take.

Having reached new territory (to us), it was in slow but steady marches that we left the shores of the Brazeau behind us—our only guide the word of a Stony Indian[1] that Chaba Imne[2] existed, and a grimy piece of paper on which the said Indian had traced his ideas of mountains,

1 Samson Beaver

2 Beaver Lake

SPECIAL NOTE FOR THE CAJ DIGITAL EDITION

An oversized fold-out map of Maligne Lake was included in the hardcopy version of the 1912 Canadian Alpine Journal.

It is not included in this digital version due to size restrictions.

streams and passes to be followed.

With the exception of an occasional prospector's deserted camp, Dr. A. P. Coleman's blazes were the only sign that a white man had ever gone that way before; he had followed the trail of the Indian hunter, we followed the footsteps of both, and learned by bald experience the length and breadth of Poboktan Pass with all attendant miseries of the same, learned the horrors of Poboktan Valley, and peered into every cross valley looking for our mythical lake.

About half way down Poboktan Valley, a few comparatively fresh blazes from an Indian's axe attracted us, we accepted the suggestion and mounted the hills across which they led. The following day we climbed yet higher, made our way across an unmapped pass, and looked down upon a beautiful unfire-touched, flower-strewn valley about twenty miles in length. Too tempting to ignore, we travelled by the banks of the ever-increasing stream for two days, and then—Chaba Imne of the Stony lay before us.

What her length or breadth, in those days, might be, we had no means of knowing, though, after a partial navigation of her waters on a raft, we realized that she had been made on no mean proportions. That she was fair to the eye beyond all compare, all admitted, and her beauty haunted us long after we had said "Farewell" to her—as we thought forever.

Having almost lost two horses at the lake's very quiet looking outlet, and having learned that Maligne River (named these many years, and which empties into the Athabaska River opposite Henry House), headed not from Medicine Lake, as it appears on McEvoy's map, but merely flowing through it, came direct from our "new" lake, all the party decided the river named the lake, and it has since been so recorded.

Ten days later, when we stood on the banks of the Maligne River at its junction with the Athabaska, its turbulent condition was reason enough to our minds why some old French half-breed trapper had called it thus—he forgotten, its troublous water never, as long as those waters flow.

At the suggestion of Mr. D. B. Dowling, of the Canadian Geological Survey, who himself would be working in the valley of the Athabaska during the summer of 1911, I again went to Lake Maligne that spring—not by the longer and beautiful route from Laggan, but entering the country via Edmonton and the then uncompleted Grand Trunk Pacific road. In my duffle-bag reposed a log, compass, protractor, scale, lined paper and, most valuable of all, intricate and detailed directions how to use, what to me was at that time a set of very formidable weapons. I confess my doubts were grave indeed that anything seriously worth while could possibly result from an expedition of this kind in such unskilled hands, and if the knowledge brought back has any value, it must be owing entirely to the careful notes and instructions so patiently worked out and sent me by Mr. Dowling.

It was a trip of interest from beginning to end; from the moment we left the last semblance of a railroad behind us and followed miles of country where men, like ants, were preparing the way to carry the new trans-continental road on its last lap to the Pacific Ocean; left the Athabaska and her dusty dunes behind us, and, surmounting the high intervening hills, with clothing, food and sixteen foot timbers for a boat to ply the Maligne waters, fought our way through the still deep snows of a high pass and at last stood on the shore of that lovely sheet of water.

The boat was built at the lake's outlet. With doubting heart forth came the long hidden paraphernalia and it was solemnly studied; but there was no sense of elation as, with the log securely attached to the stern of the boat, the surveyor took her first readings of the compass to the next visible point of the lake, stepped aboard, tossed out the log and was silently rowed to the site

Moonlight On Maligne Lake. Photo, Byron Harmon

in question. The nervous sensation that something important might be forgotten was great enough, but the rowing of that clumsy boat was equally bad. To sit hour by hour, with nothing to distract the mind from the rower's weary task but to guide the rudder with a piece of frazzled twine taken from a side of bacon, was nothing short of painful; for the readings quickly became a mere matter of moment.

When three days had been consumed working from the lower end of the lake as a base, a day was taken for drafting. With figures and sketch obtained (trifling details too small for the log to be used were noted), the novice poured for hours over the result—drawing, re-drawing, going over and over each measurement—something was found to be wrong. What was it? Who was to blame? Again and again Mr. Dowling's notes were studied—they had been followed to the letter, but that shore line was incorrect.

Blunders are usually suppressed in print, I think, but should this case of mine reach the eye of even one who has the temerity to attempt to use such unaccustomed tools, I am willing to sacrifice my pride and expose my stupidity. No amount of juggling the figures obtained, righted the matter, we were forced to look elsewhere for the trouble. The tripod used on the work was examined, it looked all right, but to make doubly sure, the compass was read first from it, then from a stout post driven into the ground—the secret was solved. A steel screw in the brass head of the tripod had been the undoing of three days' hard labor. The entire sighting of the compass after that, was done from a stick of wood driven into the ground at every landing. Three readings were always taken, and the average was used.

The length of the lake and our clumsy craft combined, called for three bases of work. Our camp lay just within the Narrows —Samson Narrows as we called them—quite under the shadow of Mts. Unwin and Charlton. Here we were detained for two weeks by a prolonged storm, often so violent that it was scarce safe to be many feet from shore even in the punt—wonderful as its ability to weather any sea was warranted to be by its builder. Life, however, was far from stupid. The scenery at that point is magnificent, and the storm accentuated the beauty by flinging wonderful rainbows across the lake, tossing blankets of snow over the peaks and over our little home. One day we had the excitement of beholding a water-spout (probably two hundred feet high) sweep round the bend, tear madly up the middle of the lake, sucking up the water as it came, then die before us with such rapidity that we wondered if we had been dreaming the moment before.

Besides the desire to obtain a sketch-map of the lake, we were also in quest of an old trail which the Indians said lay between Maligne and Brazeau Lakes. When the low clouds lifted sufficiently one morning, we explored the valley back of our camp—Sandpiper Valley[3]. It proved a blind valley, a valley for goat, or sheep, or bear, but with all the respect I have for an Indian's pony's capabilities, I saw no chance for a footing in the upper reaches of that valley. To its furthest limitations the distance is about five miles, with a fine, double-headed peak (snow and glacier-crowned), which we called Mount Maligne. Signs of goat and bear were numerous.

At the upper end of the lake we made our third camp. At that point the scenery is positively dramatic. Waterfalls, the grand cliffs of the Thumb, avalanches thundering down on hot, sunny days, hundreds of wild duck skimming with pathetic little quacks across the glass-like lake, and in the distance, upon the green meadows of the Pixie Hills, little white dots (goat) moving, all combined to make a picture worth many a troubled hour to reach.

Here the days were as fine as in the Narrows they had been dull, and with our log and

3 So called as the alluvial fan at the mouth of the stream was a wonderful breeding ground for the sandpiper.

compass work completed, we searched the valleys for the lost Indian trail. Behind, or east of the double-headed mass of rock and snow known as Mt. Warren, we found a stream leading from large ice-fields about two miles distant, and from the mountains on either side of her course, innumerable waterfalls adding their quota to her flow. The first view of this valley looked very promising for the lost pass, but we followed it to its highest limitations—the glaciers —and there was no sign of other footsteps than the ever-present mountain-goat. Hundreds of rocks perched on end just below the ice-line, reminded us of guardians to some vast, wild haunt, and thus suggested the name Pixie Valley. We returned to our tepee home late in the evening still wondering where the trail to the Brazeau lay.

Fagged with that day's trip, our guide tried what was apparently the only other available valley the next day, and at night reported "Bear Valley as a horseshoe of glaciers at its southern-most end." Personally I have my doubts if the Indians ever came to the upper end of the lake with horses; first there is not enough feed to hold a horse more than a couple of days, and second, we never saw a sign of a camp. Lower down the lake we found many a decaying wickiup, little shelters where the hunter had crouched from the bitter blasts of winter, as he laid over at night, while making the round of his traps. It is the lower end of the lake where we found tepee poles in every stage of decay and, in the meadows beyond, as well as on the Opal Hills, an inexhaustible supply of feed. Doubtless the little brown jacket of the marten had attracted the hunter, for we saw several of them playing about our camps. The beaver, for which the Stonys had named the lake, had long been completely destroyed. Only a very few, old rotting stumps remained to show where the busy workers had lived, and stood there, sad pathetic reminders of the improvidence of the Indian hunter.

With our entire measurements completed, we spent one day drafting results, and by drawing a line directly through the centre of the lake, we had a length of eighteen miles. This is probably crude and will bear more scientific inspection; but no science, no other plotting can ever rob each mile of its great charm and beauty.

Lake Maligne, in its altitude of about 5,000 feet, surrounded by picturesque mountains, glaciers and falls, must ever remain one of the Chosen Places.

First Ascents In The Southern Selkirks.

Edward W. Harnden.

In telling the Canadian Alpine Club of exploration and first ascents in 1911 in the Windermere Southern Selkirks, a preamble is hardly necessary. In the 1911 Journal you were well introduced to that fascinating region. Mrs. Parker, in her delightful paper on "The Upper Columbia," put you on good terms with the neighbors; Mr. Ellis, one of our 1910 party, in his "First Ascent of Mount Hammond" (Nelson), took you along into the hills; and Dr. Longstaff, in describing his trip of 1910 "Across the Purcell Range," with Messrs. Wheeler and Harmon, justly appreciated the Alpine glories of the near-by country to the south, with which this story deals.

I had visited the region in 1910 with an old mountaineering friend, Mr. Herbert W. Gleason, of Boston, who was a guest of Earl Grey on a Toby Creek trip several years ago. We obtained in 1910 tantalizing glimpses of fine peaks, unclimbed and unknown; but the protracted forest fires of that summer enforced an idleness which left us with unaspiring legs and so shortened our time that, instead of sitting haughtily aloft, "like Jupiter on Olympus looking down afar upon men's lives,"

we had simply "Walked right in, and turned around, And walked right out again."

In the summer of 1911, Mr. Gleason's plans taking him elsewhere until late in the season, I had as companions on the Southern Selkirks expedition two other Boston mountain-climbing friends, Mr. and Mrs. George D. Emerson; and Mr. Ellis, though sorely tried with business cares, was able to join us on one good climb.

We were prepared not only to climb, but to map and otherwise size up the country as well as time would permit; were equipped with a light transit, two standard English aneroids—a Hicks-Watkin and a Short & Mason—ice-axes, rope and camp outfit, and were our own guides, packers, cooks and dishwashers. While each took a hand at everything, specialties were recognized. Emerson was the engineer and man of figures; Mrs. Emerson, the Recording Angel, chef and botanist; I, the official photographer and philosopher; and "Charlie" certainly could build "a whale of a cairn."

For the map Emerson took careful bearings from summits and prominent points that we reached, checking and crosschecking, and mountain-top and other photographs helped to fill in the details of creeks and doubtful territory. We kept voluminous aneroid data and later checked up the peculiarities of the instruments under the vacuum, with a mercurial barometer ; while Mt. Gleason, we not only aneroided, but roughly triangulated (10,550 ft.) from a base line on Toby Glacier, using a bench-mark in Earl Grey (Wells) Pass, the triangulation and aneroiding checking up closely. Many of the names used are our own, for identification because of lack of local nomenclature. We paid a brief visit to the Paradise Basin, described last year by Mr. Ellis, which affords a superb panorama of the Rockies and the finest view of Nelson; but our first real work was in North Fork, the second important northern tributary of Toby Creek. Here we camped in an open flat about a mile up the Fork, close to the mouth of Nelson Creek (named "Hammond Creek" on our map, before we got word of the action of the Geographic Board identifying Mt. Hammond with Mt. Nelson). This creek drains the snows of Mt. Nelson from the southwest. Ellis and I had looked down into it from the east in 1910 from the ridge of Nelson between Paradise Basin and North Fork, deciding then that it offered the best approach to Nelson and would make the most interesting climb. Our 1911 ascent of the Monarch Peak ridge, directly overlooking Nelson Creek and Mt. Nelson from the west, seemed to confirm this, filled in details, and gave us a grand view of the jagged western wall of North Fork and a foretaste of the grand glacier scenery at the head of the Fork.

Ellis, who greatly desired to make the second ascent of Nelson with us, was called away on business, and, while awaiting his return, we packed sleeping bags and provisions on our backs for a several days' trip to the head of North Fork. Here, camped high on the eastern slopes of the Upper Fork, commanding a full view of the fine icefall of the splendid two-mile wide Delphine Glacier and of the jagged and glaciered western ridge of the valley, a summit above us to the east attracted our attention. This afforded us, on July 11th, an interesting climb and first ascent, the snow-gully and rock work giving us a good try-out and test of condition. Mt. Catherine (the name we suggested before learning that there was already a Mt. Katharine near Assiniboine), is about 9,900 feet in height, overlooks on Boulder Creek a fine series of hanging glaciers, and offers a superb panorama. To the east and north-east, close at hand, facing each other across Boulder Creek, where Mt. Nelson and Boulder Creek, framing between them the distant Rockies, while to the west, tier on tier, rose the noble peaks of the Crest, Southern Selkirk Range, with some of which we were to hobnob —and hobnail—later. From south sweeping the west to north the landscape fairly bristled with typical glittering, crevassed glacier fields and projecting rock summits of the Selkirks.

July 12th found us back at our lower North Fork camp in good trim for Mt. Nelson. On that day Charlie was to be back, but he had not returned by noon on the 13th, so we started without him.

SPECIAL NOTE FOR THE CAJ DIGITAL EDITION

An oversized fold-out map of the Watersheds of the Toby and Horsethief Creeks was included in the hardcopy version of the 1912 Canadian Alpine Journal.

It is not included in this digital version due to size restrictions.

Our route took us straight north up Nelson Creek, from our camp at about 4,000 feet in a sharp and steady rise to a base camp for the climb at about 6,700 feet, in a strip of woods overlooking from the left the snow gully at the head of Nelson Creek. The rapid rise involved striking changes from temperate to sub-arctic conditions in trees and flowers. The trees rapidly dwindled from lodge pole pine (Pinus Murrayana) and western larch (Larix occidentalis) to stunted growths of Lyall's larch (Larix Lyallii), Engelmann's spruce (Picea Engelmanni), fir balsam (Abies balsames), and an occasional white bark pine (Pinus albicaulis). On the benches in the Windermere Valley we had already identified, we think without question—although there seems to be much controversy about this section being its habitat— the grey, or as it is sometimes called, the Jack pine, the Pinus Banksiana[4]. We found, besides a few that we could not identify, these flowers:

Yellow avalanche lily (Erythronium giganteum), white glacier lily (Erythronium albiflorum), white heather (Cassiope Mertensiana), red false heather (Bryanthus empetriformis), western anemone (Anemone occidentalis), mountain phlox (Phlox Douglasii), laurel (Kalmia microphylla), harebell (Campanula rotundifolia), large purple beardstongue (Pentstemon Menziesii), mountain Larkspur (Delphinium Brownii), wild clematis (Clematis Columbiana), western forget-me-not (Echinospernum floribundum), red indian paintbrush (Castilleia septentrionalis), Rocky Mountain (Oregon) grape (Berbens repens), mountain phacelia (Phacelia sericea), yellow columbine (Aquilegia flavescens), fringed grass of Parnassus (Parnassia fimbriata), red wintergreen (Pyrola asarifolia), and wild onion (Allium Schoenoprasum).

From our base camp, sharply outlined against the northeastern sky-line, stood the steep rock and snow profile of Mt. Nelson, for which the early morning of July 14 saw us headed. We knew that that sky-line arête looked down on the further side vertically to Boulder Creek. A sharp rise of about two hours, scrambling over broken rock slopes and up steep snow gullies, brought us to the arête, a sharp ridge of shattered, unsettled rock slabs and fragments. To our left was a sheer, terrific drop to Boulder Creek; to our right the alternate snow gullies and rock ridges forming the badly disintegrated southwestern slope of the mountain. Some care was required on the arête because of the unstable equilibrium of the rocks, the fragments being so uncertainly and loosely heaped, that in places where we had to dip to the right of the ridge we looked through openings or windows in the rock pile to Boulder Creek.

We ascended this ridge to the base of the magnificent crown of Nelson, composed of huge, cubic rock bastions. The summit is attainable through one of three sharp V-shaped gaps or Chimneys, eroded by frost and weather through the limestone walls. The first gap had seemed impracticable to Mr. Ellis last year, and at first so impressed us. But it offered a sporting climb, there were three of us with a good rope, and we decided to take it. Avoiding the gully itself, a treacherous channel for falling stones, we took the left side rocks. A half hour or more of delicate and careful work, over boulders and up chimneys of rotten limestone, testing every foot and hand hold, one only moving at a time in places—and with the pleasant sensation at one stage of feeling an apparently firm boulder upon which we were all depending give way—placed us at the top of the crown, a scramble then landing us on the shattered and crumbling rock knife-edge which forms the higher and more disintegrated of the two chasm-separated summit peaks.

Mr. Ellis' aneroiding last year placed the elevation of Nelson at 12,125 feet; but better instruments and more reliable data to work from reduce this elevation to about 10,330 feet. This is

4 Since the above was written Mrs. G.D. Emerson has kindly sent cones, claimed to come from a similar pine, to Prof. Jon Macoun, Dominion Botanist, who states that there is no doubt the cones sent him belong to Pinus Murryana. ED.

Earl Grey Peak From Earl Grey Pass. Photo, E.W. Harnden

Lady Grey Peak From Earl Grey Pass. Photo, E.W. Harnden

still well up to the Northern Selkirks, however, and the climb is, for instance, more interesting—and more dangerous, because of the rapidly disintegrating limestone—than that of Sir Donald. The view, too, is finer. Much of the danger is eliminated by taking the third gap from Boulder Creek, through which we descended.

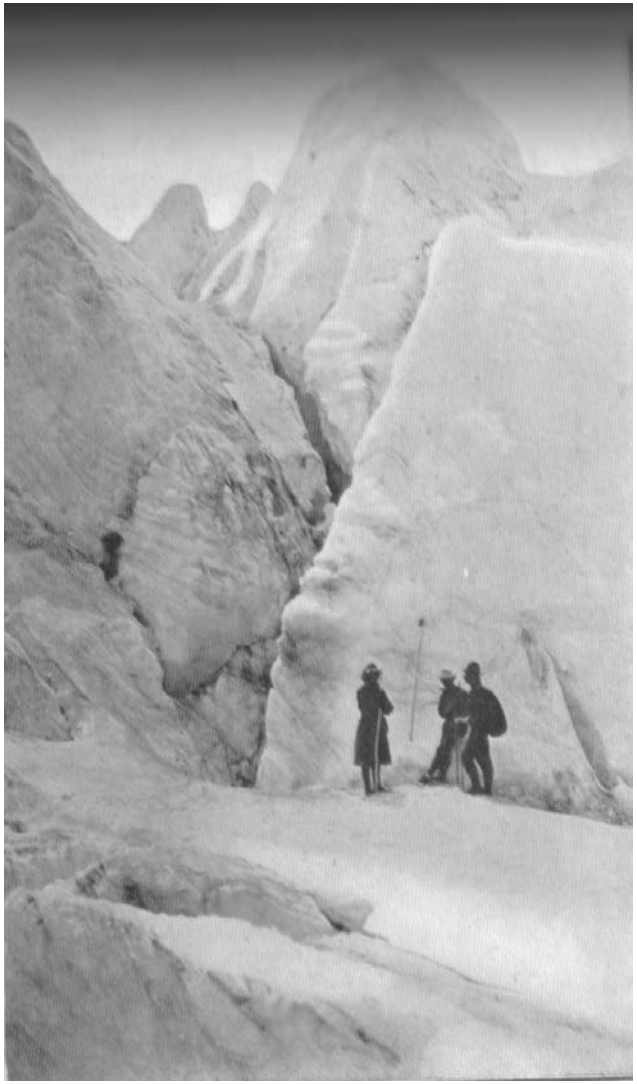
With the hypothesis of Mr. A. O. Wheeler that "Mt. Hammond" was the Mt. Nelson of Thompson, Gleason, Emerson and I, after independent study on the ground, have been in entire agreement, and believe the Geographic Board of Canada this year acted well in standing by the old name. A striking eastern sentinel of the Selkirks, it is the only alpine peak that stands out prominently from the lake, and its location on the maps of Thompson and Dawson—although they only saw the mountain from the lake—practically agree with the location given by Emerson. To be sure, Thompson puts in a sort of twin peak to the north of Nelson, and this is equally unquestionably what we call Boulder Peak, a fine mountain across Boulder Creek to the north, also visible from the lake and snow-capped, but several hundred feet lower than Nelson.

Thus standing like a sentinel, in view of Windermere Lake and well east of the crest range, Nelson affords a fine sweep of that range, while in the distant north-east there is a grand sweep of the Rockies. To the south, nearly twenty miles away, rises Sir Donald's twin, Coppercrown, south of Toby Creek; southwest, nearly thirty miles off, the striking group of mountains about Earl Grey Pass, where we were to climb later; to the west peaks between Toby and Horse Thief Creeks; a little north of west Mt. Farnham, an eastern-lying sentinel of Horse Thief Creek as Nelson is of Toby Creek, and unquestionably the "thumb" peak which Huber, Topham and Foster saw from Sugar Loaf in the northern range, when they thought they were looking at Nelson (Wheeler's "The Selkirk Range," page 262); in the distance, to the right of Farnham, the Northern Selkirks, near Glacier; and in the northern distance the Spillimacheen Range, dominated by Ethelbert.

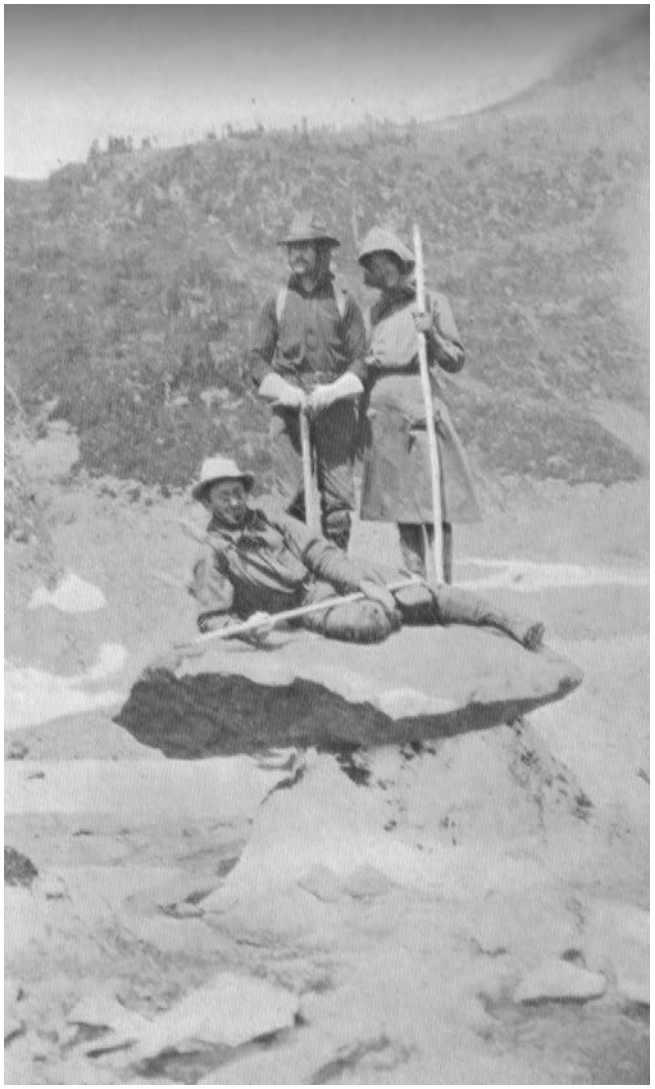
We descended Nelson by the third gap from Boulder Creek, which is much more eroded and broken-down than the first gap and is the route I would recommend for a possible future Club climb of the peak, and night saw us at our Nelson Creek camp, from which the next morning we rapidly swung down to North Fork. Ellis soon joined us, and two days' packing landed us in Earl Grey (Wells) Pass, between the heads of Toby and Hamill Creeks, the latter an eastern tributary of Kootenay Lake, to the west.

The view from a point slightly above the pass is one of Alpine perfection; to the northeast and east, at the head of Toby Creek, the noble gradually-rising and curving Toby Glacier, the source of the Creek, with its background of near and distant snowpeaks; to the south a splendid, sheer, Weiss-horn-like summit (Mt. Gleason, which we later climbed); to the southwest, on a beautiful peak at the head of Hamill Creek, the glorious icefalls of the Hamill Glacier, with a sheer drop of over one thousand feet in its lower part over which at frequent intervals huge iceblocks solemnly boom, roar and are shattered to dust, the powdered fragments reuniting in a large secondary glacier below—while the Hamill Creek valley opens up a fine West Kootenay vista. Earl Grey considered this panorama, suggestive of that from the Gorner Grat, the finest he had seen.

Along the main line of the Canadian Pacific road there are fine glacier centres, but many of the outlying snow and icefields, particularly as viewed from the heights, are rather scant and shrunken. In these Southern Selkirks, however, the great precipitation produces superabundant ice and snow-fields, huge mountain-top plateaus being at times covered with seas of ice and snow miles in extent, which spill and ripple over the edges, and down the splendid hanging glaciers. The coverlet is ample., there is no skimping of the blankets. We arrived in the pass a trifle early to find grass for the pack horses. The snow had not yet departed, although there was tent room and



Seracs On Toby Glacier. Photo, G.D. Emerson



Glacier Table, Toby Glacier. Photo, G.D. Emerson

the white and yellow erythroniums and giant anemones were already blooming almost out of the snow. So we prepared for several days' campaign and sent the horses down the line. We were at an altitude of 7,400 feet; the only trees left were the Lyall's larches and a few stunted fir balsams.

I had dreamed during the winter of an attempt on that splendid peak commanding the Pass from the south. It seemed unassailable, but I had faith in an unseen side; so the early morning of July 18th saw the Emersons, Ellis and myself dropping down to the Toby Glacier, bent on a voyage of discovery. We travelled the curving stretch of the great glacier for four or five miles, starting east and gradually swinging round to the southeast and south, until, near the head of the glacier, turning a particularly forbidding rampart of our mountain, the south side came into view. It was hollowed out and in the depression was a steeply rising tributary glacier, surmounted by an upper neve and snowfield, with a rock ridge at the summit. With the combination of steep ice slopes and crevasses, careful step-cutting, rope-work, sounding and steering were, of course, necessary, and I have a broken finger which attests the interesting character of the rockwork above; but one o'clock in the afternoon of a beautiful day found us the first ones on Mt. Gleason (named for Mr. Herbert Gleason, the well known mountain photographer), enjoying as grand an alpine panorama as I have seen in Switzerland. At our feet, to the north, the mountain fell away in a sheer, appalling precipice; on every hand were the glorious snow and ice fields and rock-capped summits, characteristic of this range. To the north, near at hand, across Toby Creek, rose a fine sharp peak which will some day afford a splendid climb, a mountain which stood out prominently from every viewpoint of the summer, and which we called Needle Peak. A little to the north of northeast were Mt. Nelson and the summits of the North Fork; to the east, southeast, south and west an unknown mountain country, with noble peaks and glaciers; and to the northwest we looked along the crest of the range to the head of Horse-Thief Creek and beyond.

The summit rocks of Gleason are not the characteristic limestone of the region. There apparently crops out here, as in other parts of the range, a granitic belt, which in the case of Gleason may account for the retention of its sharp summit under erosion.

Mt. Gleason is about 10,550 feet high, the highest summit yet attained in the Southern Selkirks. For this measurement we did not depend upon our aneroids alone, but later roughly triangulated the height from a long base-line that we ran out to Toby Glacier, and the aneroiding and triangulation tally closely.

The running of the base-line and an interesting trip through the striking séracs of the glacier from end to end brought to a close our Toby Creek plans, so we retraced our steps to the Windermere Valley and started up Horse-Thief Creek. Mr. Ellis again had to leave us on account of business. In Horse-Thief Creek we outfitted at Thomas Starbird's Mountain Valley Ranch, a most delightful vacation headquarters about a dozen miles up the creek from Wilmer. I might expatiate at length on the varied wonders and attractions of Horse-Thief Creek—the beautiful lower canyon and the hoodoos; the delightful hospitality and attractiveness of the ranch itself, with its opportunities for horseback riding and hunting; the tremendous precipitous mountain walls that in one place shut us in almost like the walls of Tuolumne Canyon in California; Goat Creek, one of the northern tributaries near the head of the valley, with its glorious series of falls cascading from the mountain side; the interesting flowers and the trees, we being especially attracted by the beautiful western canoe cedar (Thuja plicata), of which there are fine specimens near McDonald Creek; and the wonderful fall where the whole of Horse-Thief Creek plunges over a high precipice.

The end of a series of days filled with interesting experiences found us camped near the head of the Creek, two miles below the great Starbird Glacier, in an open flat, a charming mossy

Sunrise From Earl Grey Pass. Photo, G.D. Emerson

Toby Glacier From Earl Grey Pass. Photo, E.W. Harnden

Seracs Of Toby Glacier. Photo, G.D. Emerson

brook flowing by our tents. Back of us was a jagged vertical mountain wall, across the Creek were three fascinating, plunging waterfalls, and at the head of the valley, dominating the magnificent glacier, was the peak we hoped to climb. This flat offers splendid facilities for a Club camp.

We were now, for some miles below the head of the Creek, beyond the help of horses and had packed in tents, sleeping-bags and food for about ten days, on our own backs, and those of some trail-cutters, who were then engaged for the Government in opening a trail up the Creek and who later worked up to us. We planned first to climb the peak and then to run a base-line on the glacier. For a reconnaissance we fixed upon the high ridge at the head of the valley and to the right of the glacier. The Emersons and I started out with sleeping bags and provisions on our backs, prepared for a trip of three days, the first being devoted to reconnaissance and locating a temporary camp, the second to the climb and a return to that camp, and the third to a return to our permanent camp below the glacier. A trip over the lower glacier was decidedly interesting, and the ridge, as we ascended, offered widening vistas of mountain tops, ice-fields and hanging glaciers. From a hanging glacier directly across the valley we saw within ten minutes of each other two tremendous ice avalanches, which finally precipitated the powdered fragments of the huge ice-blocks which had started from above on to the Starbird Glacier, thousands of feet below. Flowers abounded, the pretty little forget-me-nots and mountain phlox being especially noticeable. Parent goats proudly paraded their little families before us.

From our rocky perch on the crest of the ridge the huge glacier almost surrounded us with its horseshoe, and there was a glorious alpine sweep in all directions. We decided upon a probable and an alternative route, and, descending the ridge to a point overlooking the lower part of the glacier, where wood was available, camped for the night. We later found that the bleak Starbird Pass would have furnished water, and a sufficient, though scant, wood supply for a base camp.

Early morning saw us picking our way over the surface of the Starbird Glacier, following the curving length to the head of the Pass, which leads over into the West Kootenay country. The mountain mists and clouds hung low, but we had hopes. We made good progress to the pass, and weather conditions permitted us to obtain fine views of the surrounding country, the clouds not having settled down upon the Lower West Kootenay peaks. But our peak was capped, conditions grew worse, and we regretfully retraced our steps to our temporary camp, with hopes for the next day. The weather then, however, was even more threatening, and we finally had to return to our camp below the glacier.

Even worse luck awaited us there. Rafford, one of the trail-cutters, a Maine guide and woodsman who came up to camp after our return, hoping for a chance to make the climb with us, had not been in camp five minutes before he had cut himself deeply into the ankle with an axe; and then a telegram came up the line calling the Emersons home. My companions sadly departed, saying they would try to send up somebody to make the climb with me, and I kept camp and looked after Rafford. For an entire week it rained and we hugged our tent, and I was busy with the problems of bandaging, cooking and supplying dry firewood. And it snowed in the mountains. We read what little literature we had, advertisements and all, and I amused myself by working out, from things we had noticed, the theory of a deep lake, until recent geological times, in the upper valley where we had camped.

At last Nature yielded to our persistence, and smiled. August 10th dawned beautifully, and the tinkling bells on the horses announced the completion of the horse-trail up to our camp. Frank Butterfield, Superintendent of the Starbird Ranch, Jack Poorman, of Idaho, a trail-cutter, and Mitchell Coffin, a tourist, from Brooklyn, looking for a chance to climb, had arrived. Butterfield

Mt. Gleason From Earl Grey Pass. Photo, E.W. Harnden

Starbird Glacier At Head Of Horsethief Creek. Photo, E.W. Harnden

had to return to the valley and look after another unlucky trail-cutter who was badly hurt; but five o'clock in the morning of August llth saw Coffin, Poorman and myself well on our way up the glacier. It was a glorious day, and we saw numerous herds of goats sunning themselves on the ridges as we tramped over the ice.

We made good time to the head of the pass, whence I had planned turning sharply to the left and following a "switchback" glacier which bounded the north and east of our peak, to a point directly below the summit, from which the peak would have to be attacked by a steep ice and snow slope. But after following this switchback a way we were misled by the apparent superiority at short range of what, from our point of reconnaissance, we had considered only a possible alternative route—a sharp broken rock comb surmounting a western "beehive" spur of the mountain, which abruptly terminated at the pass. This comb appeared to join the back of the peak. Up to this we climbed, but we found the unstable and jagged nature of this rock ridge to be such that after hours of work there would have been no certainty of success. There was, in fact, no assurance that it would even connect up with the peak. So, having lost an hour and a half, we dropped down again to our switchback glacier, to try the route originally planned. The glacier was badly cross-hatched with crevasses, and we had to do a good deal of sounding for blind holes, and anchoring and broad jumping. Occasionally a leg went through, but we managed to keep above the surface. The most serious study was required on the steep ice and snow slope rising sharply from the switchback to the final peak. Here we had to deal with bad cross-crevasses—"glory holes" as Jack called them—a week's fresh snow on the old ice, and snow threatening avalanches, and a final bergschrund. There had, however, been one avalanche from near the top down to the upper "glory hole," and I steered our party in short zigzags in the main up this slide, as far as it went. Keeping the rope taut and making good steps we could probably have braced against any new slide that might start; and higher up a hummock promised to divide any avalanche that might come from above, so we availed ourselves of its protection.

But all went well. Even the final bergschrund—into which we were prepared to go, climbing up the further side—considerately offered a narrow splinter of a bridge for passage; and, surmounting the vertical 20-foot snow wall above the bergschrund by a straight frontal attack, digging in fingers and toes, I found myself, at 1.30 p.m., within striking distance of the crest rocks of the peak. Our reconnaissance was justified, even as to the time necessary for the climb. The others came up the rope in a twinkling, and the summit rocks felt their first human contact.

This peak, which we called Mt. Monica, is about 10,060 feet in altitude, and is the centre of a noble alpine circle of peaks, glaciers and valleys—doubly interesting to me as affording a new and striking viewpoint of scenery already familiar from previous climbs. We returned to our camp below the glacier at 6.30 p.m., our summer's work ended—work in a magnificent alpine region, which my companions and I hope to revisit.

As this is a region which, of course, the Canadian Alpine Club will visit, perhaps a few suggestions are in order. In Toby Creek, an ideal camp, with feed for horses at about the end of July, could be had:

(1) In the Pass itself, keeping horses in the Pass or in a flat below, near the tongue of Toby Glacier;

(2) at Earl Grey Camp, near Pharaoh Creek, where there is a broad bowl-like valley, with a chance for expeditions to the Pass, up North Fork and up Jumbo Fork—a good central base;

(3) in the Jumbo Fork Basin, which we did not have time to visit, but which clearly offers good climbs, splendid scenery, and feed for horses. In Horse-Thief Creek, the ideal camp would be

located, with feed for horses about the end of July, in the flat where we camped, about two miles below the tongue of the glacier. But Starbird Pass is a glacier pass and cannot be reached by horses. The crest of the range appears to lie between Toby and Horse-Thief Creeks, at Earl Grey (Wells) Pass and in the vicinity of North and Jumbo Forks, the high peaks being generally more accessible from Toby Creek and its tributaries. We have reason to believe, also, that there is a timber-line pass from near the head of Jumbo Fork into a tributary of one of the head forks of Glacier Creek, on the West Kootenay side; and there is probably a relatively low pass from the Jumbo Basin into the head of Hamill Creek. These and other things will offer fruitful subjects for study in this region.

All hail to Toby and Horse-Thief Creeks! And there are other little known creeks leading to this fine Alpine region. There is a call to the climber and hunter—peaks for one, goats and grizzlies for the other—and charming camps, with glorious, never-to-be-forgotten scenery for all.

The Ptarmigan Lake Region.

James F. Porter.

In the Assiniboine country seventeen years ago I first came under the spell of the Canadian Rockies and it has held me fast even since.

By way of a warning to the friends whom I have persuaded on various occasions to cross the continent and join expeditions in the mountains of Alberta and British Columbia, I have frankly explained that they were running the grave danger of becoming the bonded slaves of the country if they allowed the charm virus once to get established. That a vacation then would not be a vacation unless spent in the wilds of the North West.

Every year as early as January I began to feel the pull from the mountains way down here in Chicago and I find myself walking past the C.P.R. offices oftener than the exigencies of my business demand. A wistful glance at the painting of Lake Louise always leads to the conclusion that a personal visit is necessary. This year the Grand Trunk Pacific offices are on the same floor with me, and Maligne Lake is making a big noise in my ears.

Last year about this time I ran across a good contour map of the Laggan and Field region in one of the C.P.R. booklets. A study of this map disclosed a region of many high passes and open country just across the railroad from Lake Louise, therefore very easy of access. A more careful study of a better map, kindly given me by Mr. A. O. Wheeler and his encouraging advice settled the matter. I gathered together a party of eleven friends, with Jim Simpson to take care of us, and about four-thirty one afternoon in the last week of July, 1911, the last member of our company reached our first camp, ideally situated near the foot of the waterfall that makes the outlet to Baker Lake.

Those of us who had not been in the mountains before found the walk from Lake Louise a little too strenuous as a starter after a year of office work. We were all surprised at the stretching out of the trail. It certainly looked much shorter on the map than it felt on our legs.

The trail up Corral Creek is good. Looking back the view of Mt. Temple, Paradise Valley and the Ten Peaks is a wonder, and you realize that in order really to see these mountains you must cross the Bow Valley and climb up on the other side.

The trail finally flattens out in a rather marshy meadow over-grown with willow and flanked on the right with the perpendicular walls of Mt. Redoubt, a mountain which could be used to make a perfect illustration for a text book on geology.

Leaving Corral Creek by keeping to the right a short climb took us over the pass and

The White Douglas And Baker Lake. Photo, Jas. F. Porter

Mt. Redoubt And Ptarmigan Lake. Photo, Jas. F. Porter

Ptarmigan Lake lay at our feet. Here we had our first view of the top of the south or White tower of Mt. Douglas, seen looking over the length of Ptarmigan Lake and the valley which drains it. Baker Lake is not visible until you have passed Ptarmigan Lake. The valley containing the two lakes has an altitude of about 7,560 feet. It is open and patched with large drifts of snow. Ptarmigan Peak rises very abruptly on your left and Mt. Redoubt on your right.

If you remain on the trail you will pass without ever suspecting its presence another large lake nestling close to the east wall of Mt. Redoubt. It is, perhaps, two hundred feet higher than Ptarmigan Lake and drains to the east and south into another valley. The perpendicular walls of Mt. Redoubt make a wonderful background for this lake, which we called Lake Redoubt, and a very fine echo can be had across it.

All the large lakes' basins in this region were formed by the tilting of the strata and the water generally overflows these rock dams in falls of from fifty to eighty feet.

On the east side of Lake Redoubt is a most interesting mountain from the geological point of view, because it has evidently had a past. It is literally covered from top to bottom with huge rocks at right angles, many of them as large as houses. We attributed this to a not very remote faulting or slipping of the strata. Knowing that we should find our camp and luncheon waiting for us below the further end of Baker Lake it seemed to take us hours to get by it, but the first of our party reached our camp a little after two o'clock, having left the chalet at eight thirty.

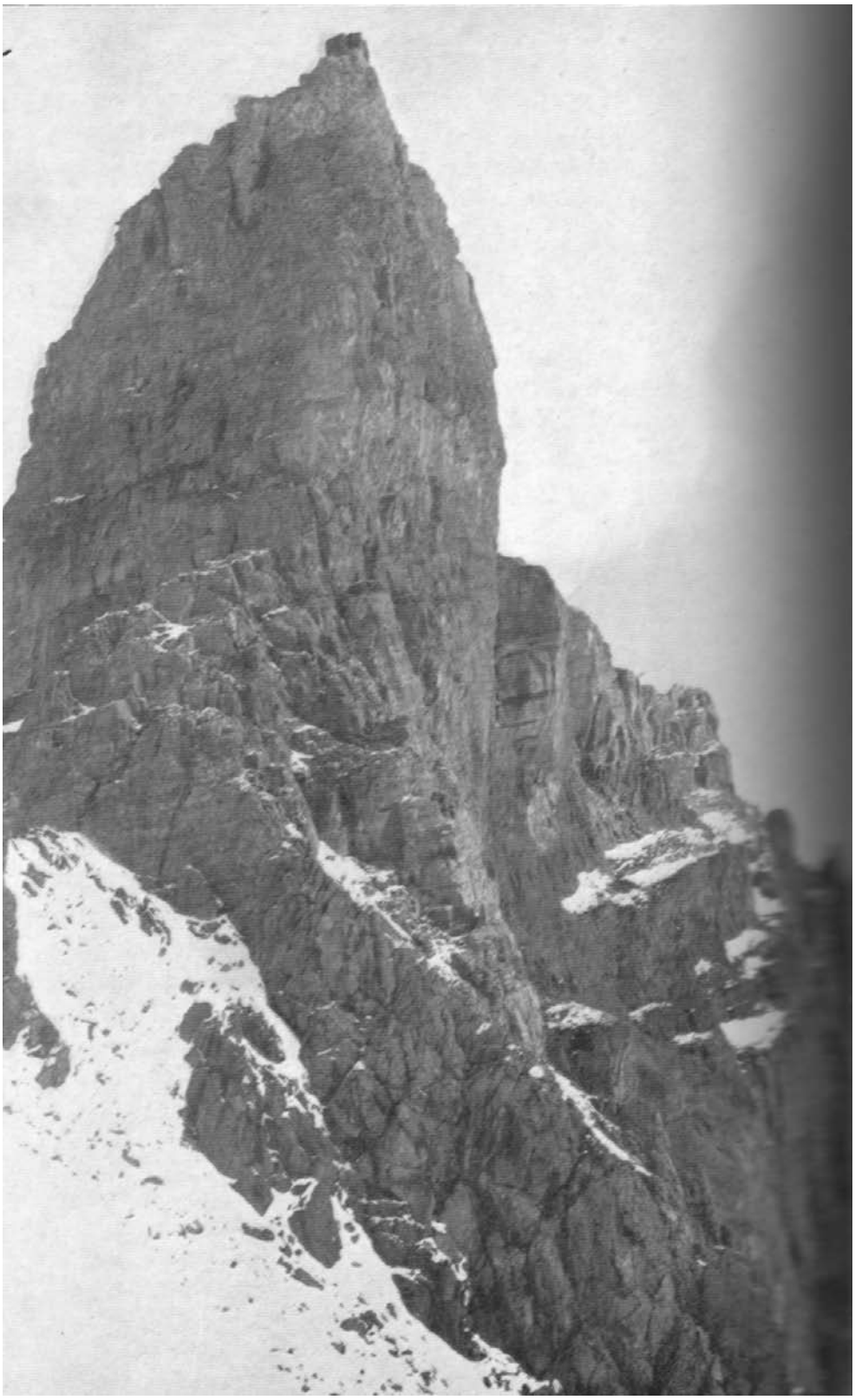
We found the region exactly what we had hoped for, meadow-land with not much timber, fine views in all directions and many inviting walks over the numerous passes; I believe-there were nine all told over which we walked. There is certainly a charm, something akin to the "wild surmise" felt by Cortez on his peak in Darien, in going over a pass in a country as little known as this.

Next to climbing a mountain, walking completely around it gives one a feeling of having conquered it and when one can do both the mountain may certainly be considered as having capitulated completely. Fossil Mountain and an unnamed mountain we called Brachiopod Mt, directly south of Fossil Mt., are two which we subjected to this humiliating treatment. Neither of them are difficult of ascent, although their slopes of broken rock lie at that steep pitch where everything is just balanced and the addition of the weight of one's body unless carefully placed may precipitate a more or less dangerous slide, especially for those coming up from below. The geologists in one party found Brachiopod Mt. most interesting. It might be described as a Devonian Coral Reef. On its western slopes we found five species of coral, three varieties of Brachiopods, a sponge and several other fossils such as Crinoids, Bryozoa, etc. These we could pick up in very perfect specimens completely weathered out. Some of the corals were three feet in diameter.

Half a mile south from our camp and about a hundred and fifty feet higher we discovered a group of three picturesque little lakes irregular in outline with rocky and grassy shores. Scattering larch trees on the north, and an island in the larger Sake made the place almost fairyland.

Across Baker Creek to the east of our camp and toward the south tower of Mt. Douglas was an interesting looking pass which invited exploration. The stream from a lake high up in the pass made its final bound into Baker Creek valley in a fall of eighty feet or more and at the bottom of this fall a few feet above the pool we discovered a cleverly built Water Ousel's nest. Although built on the face of the rock in plain sight we should never have seen it if it had not been for the mother bird flying back and forth to feed its young.

On reaching the top of the pass the magnificent spectacle of the two towers of Douglas rising from a large glacier and snow field lay directly before us.



The Wall Of Jericho. Photo, Jas. F. Porter

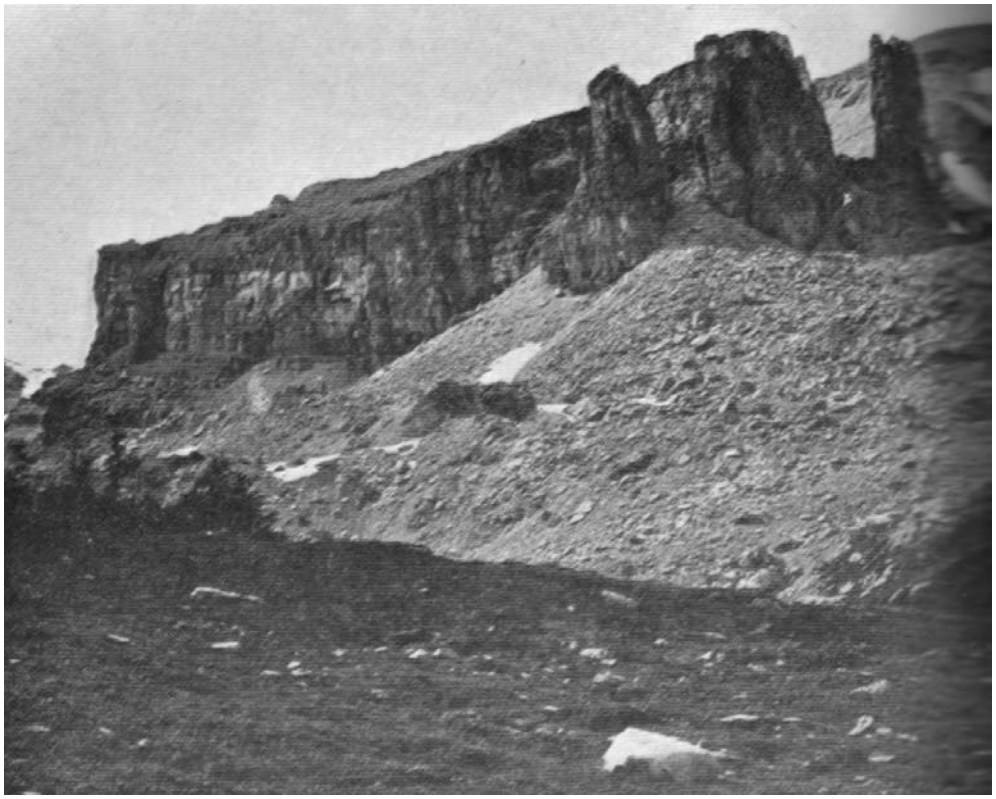
The head of the valley of the Red Deer was explored next. A trip around Oyster Peak to the foot of the North or Black tower of Douglas, really a distinct mountain, was made. We found the Red Deer Valley a beautiful thing to look down upon, but, owing to its dense timber, nothing could be seen from below and the mosquitoes were bad. The views from the sides of Oyster Peak down the Pipestone Creek towards Mt. Molar, which loomed up above everything else, with its two picturesque cusps, was considered by some of the party the most beautiful view we had. The foreground was made interesting by two green lakes sharply outlined in the timber. The larger of these lakes drained west into Pipestone Creek and the other into the Red Deer.

A spell of bad weather with low hanging clouds discouraged our attempts to climb, and at the end of ten days we moved our camp to the lower of the two small lakes west of Fossil Mt., one of those most beautiful sky-blue nameless foundlings. We called it Lake Myosotis, not only on account of its color, but also because of its forget-me-not qualities. It is in fact a miniature Lake Louise. Ptarmigan Peak, Pika Peak and a thin jagged mountain we called the Wall of Jericho, embrace it on three sides. A fine hanging foot from the Ptarmigan and Pike glaciers almost reaches the shores of the lake above and sends down a daily avalanche of icebergs. Both of these lakes are held back by high perpendicular dams over which the water flows in attractive falls. We found it quite a little study to find a way down the face of the lower dam to reach the valley below. Our camp was certainly well fortified.

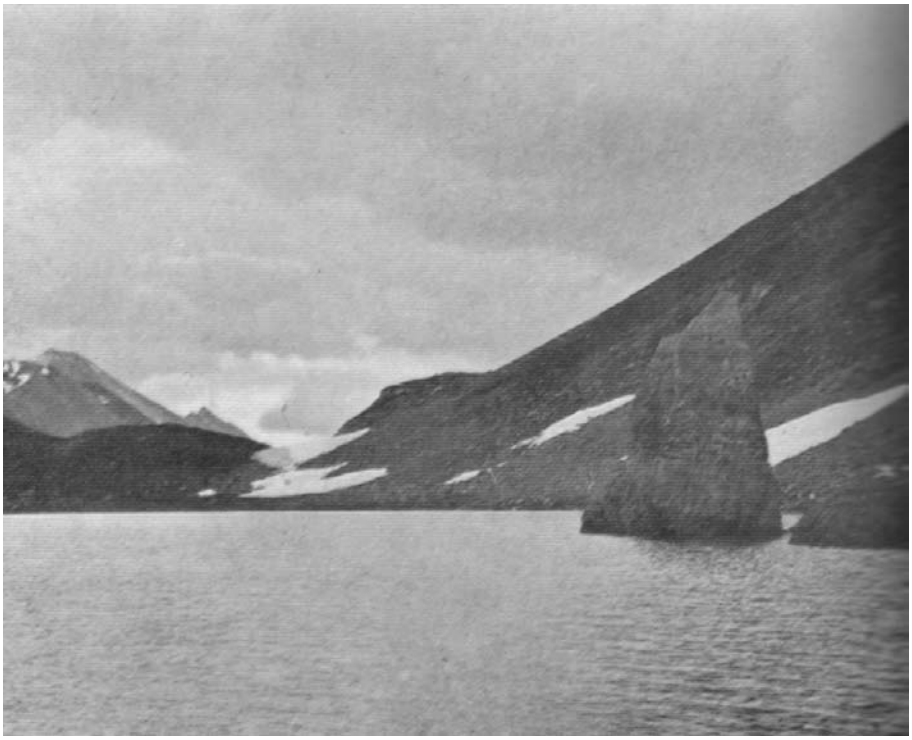
The next morning we started bright and early with all our climbing paraphernalia to find out what the mountains were like. We reached the upper lake through the gorge and past the fall where the water breaks over its retaining dam, and then by keeping to our right climbed up the steep slopes of the Wall of Jericho. It was interesting and took about half an hour to reach the comparatively flat Ptarmigan glacier. Following this we soon reached the Pika glacier, which comes down from the left behind a spur of Ptarmigan Peak and made our way toward the pass leading to the valley on the other side of the Wall of Jericho. Our surprise was great when we looked down upon a wide valley with scattering trees containing a glacial lake almost a mile long. Our impulse was to abandon the mountains and get down into that valley as soon as possible, but a further examination of the pass led us to believe it would be next to impossible to do this. We, therefore, looked around for other fields of investigation. In front a few hundred feet above us and cut off only by what seemed a comparatively short bad stretch was a fine snow cornice running right up to the rounded top of Mt. Richardson, and to our left was the long smooth concave slope of the Pika glacier extending with gradually increasing pitch almost to the summit of the ridge from which the cone shaped top of Pika Peak springs. The climb looked simple enough, and we decided to try it at once, but it proved to be too late, the snow was already getting soft and we sank deeper and deeper at every step. It was to hard work for some of the women and they asked to be left behind. There were nine of us and our one rope was just long enough to take us all in, and as we did not wish to cut it we all turned about and Pika Peak was not climbed.

On our way down below, the Wall of Jericho, we found many fragments of trilobites, which appeared to be the same as the Mt. Stephen fossils, placing this formation, therefore, in the Cambrian Period.

Disappointed in our failure on Pika Peak we attacked Ptarmigan Peak on the next good day with increased determination, and, finding a comparatively easy slope on the south, we made the ascent, eight strong, without difficulty. While the climb was in some places steep, it was nowhere dangerous, except perhaps a short distance along a narrow ridge some hundred feet from the top. Here there was a perpendicular drop on the north side and a rough loose slope too steep to risk



Merlin Castle. Photo, Jas. F. Porter



Pinnacle Lake. Photo, Jas. F. Porter

on the south side. We chose the ridge of balanced rocks, three or four feet wide, some of which alarmed us by moving under our weight. The distance was only thirty or forty yards, however, and then a short easy climb landed us on the top of the pinnacle. The view, as all extensive views are in these mountains, was most beautiful. Apart from the mountains across the Bow Valley, the thing that attracted our attention the most was the great number of lakes to be seen on all sides.

We had not forgotten that large blue lake beyond the Wall of Jericho, and our next excursion was there. We found this valley in some ways a duplicate of the one we were camped in. A climb of a few hundred feet up a tumbling creek brought us to a small lake surrounded by timber. A quarter of a mile back of this, running directly across the valley, was a perpendicular wall of rock, over which no water fell. The presence of a lake above it, therefore, would never have been suspected. On reaching the foot of this wall we came upon a great boiling cauldron and we found it to be the opening of the underground outlet of the lake above. A climb of sixty feet brought us to the top of the cliff where we could see the beautiful north face of Mt. Richardson looming up directly out of a magnificent wild lake nearly a mile long. There was an air of mystery in the place, the disintegrating rock formations on our right were weird and grotesque, we found gorges, canyons and falls and several small lakes. High up on our right a group of four tower-like rocks, each several hundred feet high, standing alone and as many more that had recently toppled over added greatly to the weird effect and reminded us of an old ruined castle. It was suggested that Merlin's Castle would be a good name for the mountain, and Merlin Lake for the large lake. A closer study of the north shore of the lake showed an old outlet over the top of the cliff along a waterworn channel. The new underground outlet had lowered the level of the lake some five or six feet. The original beach could easily be traced by the straight line of old stranded driftwood.

We were constantly surprised to find what a wild region this was in spite of its proximity to the railroad. Deer, goat, sheep and bear tracks were not uncommon, as we even saw them in the newly frozen snow. Pipestone Creek, as far up as the fall from the lower lake in Merlin Valley, swarmed with trout anxious to be caught, and we enjoyed several good fish dinners.

One dark snowy morning, three weeks after we had made our first camp, we climbed up through the clouds and over the pass to Ptarmigan Lake, where we picked up the trail to Laggan.

The vacation was over.

A Mountaining Experience Near Arolla.

J. W. A. Hickson.

After three weeks of varied and arduous, although very enjoyable climbing in unsurpassable weather last summer (1911), at Grindelwald and Chamounix, I went with a well known Grindelwald guide to do something easier at Arolla in the Canton du Valois—still unspoiled by tourists—to which place I had been attracted by reading Walter Larden's "Recollections of an Old Mountaineer," Mt. Collon, the Aiguille de la Za by the north face, and the Aiguilles Rouges were among our objective peaks; and we hoped to do the Dent Blanche by the western arete on our way to Zermatt. My guide had very high recommendations and twenty years' experience, gained chiefly on the great peaks in the vicinity of Grindelwald, but I discovered at Chamounix, his forte did not consist in finding the best routes on mountains that he had not hitherto explored; and he certainly lacked initiative.

We set out from the Hotel Mt. Collon (6,570 ft.) for the fine looking peak of the same name (11,953 ft.) at 3.30 a.m., later than our usual hour of starting, on July 31st. As neither of us had

been over the route before, I anticipated one of the chief delights of the sport, which arises from a lack of foreknowledge of the climb and consequently having to find one's way; a difficulty which it is, unfortunately, a main feature of a guide to eliminate.

About two hours' easy going over grass, terminal moraine and simple rocks, brought us to the snow, after which we soon reached the Glacier de Piece, which connects with the Glacier de Vuibez, and roped. As we did so we both agreed that it would be advisable to look out very carefully for concealed crevasses, as the great heat, which had prevailed for a month, had rendered them unusually treacherous.

We used an English alpine rope of most approved make, 80 feet long, and allowed about 30 feet between us; not nearly sufficient, I think, considering the state of the glacier and that we were a party of only two persons. What was perhaps of more importance, in the light of the accident to be related, is that we made the mistake of keeping too much to the right, i.e., too close to the Pigne d'Arolla, and thus were obliged to cross the glacier at, I afterwards learned from the local guides, was considered its most dangerous part.

Although the barometer stood fairly high, shortly after we started from the hotel the sky began to give indications of uncertain weather, and before reaching the Glacier de Vuibez became heavily overcast. Soon, a light mist came on, which gradually became thicker. We managed, however, to pick our way through the crevasses without having to do much circumnavigating. About seven o'clock the mist had changed to a heavy fog, and the Grindelwalder suggested the advisability of turning back, as under the circumstances it would not be possible to find the route up Mt. Collon, or even to its base. Stopping for ten minutes to see whether the fog would let up, we employed the time in consuming some refreshments, a lucky thing for one of the party at least. The outlook, however, appearing rather hopeless, we decided, much to the relief of my companion, to return.

It was now my turn to lead, and I was cautioned by my guide that it was highly desirable to retrace exactly our footsteps which were well-marked in the wet snow, in order to avoid the risk of going astray and wandering about for hours in the fog. I requested him to see that the rope was kept taut between us and pay out the full amount; for I had noticed with him, as with other guides, that after several weeks of successful climbing, he was apt to be careless, take for granted that no mishap would occur and carry some of the rope very loosely coiled around his arm.

We had not been more than ten minutes on the return route when the accident occurred which almost put an end to my mountaineering activities. The fog was then pretty thick, and there was a light drizzle of rain. I was moving in our previous footsteps when the snow fell from under my feet, and, literally in a second, I plunged down at least ten feet and found myself hanging over the side of a huge crevasse, too wide to span even with outstretched arm and ice axe. Fortunately we had struck the crevasse in the direction of its breadth, but unfortunately at its widest part. Its length was several hundred feet. There was a drop of about 60 feet below (as I afterwards estimated from the length of the rope). The guide managed with great exertion to check my further fall, being assisted by the temporary brake supplied by friction of the rope on the edge of the crevasse; and, having planted his axe securely in the snow, wound the rope around it. I could thus be held, and was safe, if the rope did not break. But the outlook was a bit unnerving, involving as it did the possibility of an immediate dissolution. I was swinging free in space, being unable to touch the opposite wall of the crevasse or to find the smallest ledge or protuberance of ice which could serve as footrest. Fortunately, I could see the bottom of the crevasse, in which there was no water.

Owing to these conditions and to the fact that the wall of the crevasse over which I was

suspended bulged considerably over my head, and knowing that under the circumstances one man can scarcely ever pull another out, I urged my guide to lower me down as far as possible on the rope. I believed that I could thus reach what seemed to be a solid resting place, while he could seek assistance at Arolla. To this course of action, which would have undoubtedly saved me some bodily injuries and a very severe physical and mental strain, he demurred; probably because he was anxious to get me out and thus be able to hush up the accident. He urged me to make every effort to save myself, and threw me down the other end of the rope, which I was able to fasten around my waist, thus doubling the machinery between him and me. During this operation my ice axe unfortunately slipped from my grasp, fell into the yawning chasm and was lost. By the guide pulling on one rope while I worked on the other, I partly drew myself and was partly drawn up to within three feet of the level of the glacier, but with every possible effort, I found it impossible to work up over the inclining wall of the crevasse. The more we jointly pulled the deeper the rope cut into the snow and ice, and I had to drop again to my former level.

Repeated attempts of a similar character, all of which were futile, resulted in painful injuries to my ungloved hands. I began to feel somewhat exhausted and could not but be anxious lest the rope might be unduly tested and I should spend the remainder of my life in plunging downwards. So I insisted that my companion should now follow my suggestion of lowering me as far as possible. After he came to the edge of the crevasse and took a look into it he realized that this was the only practical course to pursue. Unfortunately, I could not unfasten either end of the rope for the knots had become too tightened—after I was rescued they could not be undone, but had to be cut—and consequently did not have the benefit of its full length; otherwise I could have got down fairly comfortably almost to the bottom. As it was I became a bit tangled up in the rope, was lowered safely for about 40 feet, and then called to my companion to let me go and fell the remaining twenty-five feet. The fall rendered me unconscious, and I must have lain in that condition for from half an hour to an hour.

Repeated shouts to the guide brought no answer, for of course, he was already far away, having run off, as I discovered on analysing the whole event on the following day, without marking the place of the accident. What was still more peculiar from the standpoint of mountaineering etiquette, he did not return with the rescue party who, therefore, lost at least an hour in discovering my whereabouts. Had the weather not cleared up, or had a snow storm come on, I should in all probability not have been discovered before I was frozen to death. My guide undoubtedly lost his mental balance. He told me afterwards that it was the first accident he had had; a fact I ascribe rather to good luck and the limited character of his climbing, than to foresight and capacity.

When I “came to” I realized that some hours must elapse before I could be rescued, and that in the meantime it was important to protect my hands and feet from injury through frost. I felt the icy atmosphere all the more keenly inasmuch as, owing to the warmth of the weather, I did not wear a coat.

I was between two walls of smooth and almost perpendicular ice about two feet apart. Without my ice axe and without my aids to vision, which had been torn off in the fall, I felt rather helpless to explore my environment. I managed, however, to move into an upright position where there was sufficient room to kick my feet to and fro against the ice wall and so prevent further diminution of circulation. The few movements that I attempted in order to reach a slightly higher and more comfortable looking ledge of snow in the middle of the crevasse on my right led to some of it giving way; and as I could see only imperfectly I hesitated to undertake any further exploratory movements. My hands were badly lacerated and dreadfully cold, and so stiff and swollen that I was

unable to put them in my trouser pockets. Otherwise, although very much bruised, I had escaped having any bones broken, and felt quite hopeful that I should be rescued from my icy tomb, although, occasionally, some snow falling from the in-part-transparent snowbridge over my head kept me alive to an obvious and very serious danger. Through the hole which my body had made in breaking the snow I could see blue sky and sunshine, which added to the exasperation of my situation, for it confirmed the action of the barometer and proved that it would have been perfectly safe to have pushed on and so probably avoided this wretched mishap. During the next few hours of physical inactivity I went over some philosophical problems with which I had been occupied for some time and attained an insight into the weakness of a certain argument of a well known French philosopher on behalf of the freedom of the will. I thought enviously of the wonderful nerve of that parsimonious German, of whom it has been related that, having fallen into a crevasse near Zermatt and, having heard stories of the outrageous extortions practised by guides, although one of his legs was broken, he refused to allow the rescue party of guides to get him out until the amount of the Trinkgeld had been definitely stated. Lying on his back he kept on quietly smoking until all details had been carefully arranged. I decided that I should not be able to display any such practical stoicism and business capacity.

Notwithstanding the popularity of the Pigne d'Arolla and Mt. Collon, it happened that no other party was on our route that day; so my guide had to make his way to Arolla before assistance could be found, a matter of an hour and a quarter at the outside. Arriving at the Hotel Mt. Collon, in a state of collapse, he could only mumble out that he believed I was killed. Thereupon, a relief column of Swiss guides started out with admirable promptitude (so a resident in the hotel informed me). They could have reached me easily in two hours had they had someone to guide them, or chanced to strike the snow-field at the same place as we had. Following the usual route to Mt. Colon they kept rather to the left and had to wander about before they struck our trail.

I looked at my watch for the first time at ten o'clock and again at eleven. Some time afterwards I heard voices, which almost immediately died away. About half an hour later they were again audible, and I shouted, but not receiving any response began to fear that I had been a bit more knocked about than I had realized, and might possibly be the victim of a hallucination. It never occurred to me that my guide was not with the search party.

Another quarter of an hour must have passed before I heard the voices for a third time, very much closer, so that when I shouted an answer was at once returned: "N'ayez pas peur, Monsieur, vous etes sauve." As my hands were to benumbed to fasten the rope properly one of the party was lowered, who, having repeated the injunction about not being afraid and after emphasizing the foolishness of not having procured a guide at Arolla, made a sort of stirrup for my foot and tied me up very comfortably. It was not a matter of much difficulty for the remaining guides to pull me up; their colleague first, and me afterwards. Near the edge of the crevasse I stuck for a few seconds, but pushing off with my foot was quickly swung over its side and sprawled safely on the surface of the glacier.

Some refreshment from the well-filled sacks of two porters, who had been despatched by the business-like hotel-keeper, and a brief rest were the means of restoring my strength sufficiently to enable me to walk, and I was tied up to three guides to exclude the possibility of mischance. At some of the crevasses I felt a bit shaky, but stumbled along, feeling that my circulation was rising at every step. After leaving the snow, where we unroped, and while basking on the sun-warmed rocks, my guide, a picture of dejection, and accompanied by a Tyrolese professional, appeared on the scene. To my cheerful salutations he returned only a woeful mumbling. I really believe that he

was ashamed of himself.

After this experience a couple of days had to be spent in my room. During two nights my sleep was frequently broken by a startling feeling that I was dangling over a chilly chasm. But the glorious air of Arolla had soon a restorative effect on my nerves. For some days I lay outside looking at Mt. Collon and calculating the easiness of an ascent. In a week I was able to take a stroll up on the Glacier d'Arolla, and two days later to cross by way of the Bertol Hut and Col d'Herens to Zermatt. But any further serious mountaineering was excluded for the season owing to the injured condition of my hands.

The conditions under which the above accident occurred illustrate very well the force of the saying, that in mountaineering it is the unexpected that happens. At the outside not more than half an hour had elapsed since we had passed over the same place without any indication of danger; without having the least suspicion that we were on a snow bridge twelve feet wide. Could the presence of the crevasse not have been detected? This was a question which will naturally present itself to any experienced mountaineer. A celebrated guide and one of the few professionals who have expressed themselves in a book, Mathias Zurbriggan, has declared that it is always possible for the trained eye to note the existence of a crevasse; through a slight elevation of the snow or, when it is very cold, through the presence of a greyish line. Emil Zygsmondy held a similar opinion until a personal experience convinced him of the opposite. Zurbriggan's opinion seems to be extreme. Edward Whymper, who was accompanied by J. A. Carrel and another guide, broke through a crevasse on Antisana (one of the Ecuadorian Andes), which was bridged by ice. The danger "could neither be detected by any droop of the surface nor by sounding in the usual manner," and the place had been crossed three times previously on the same day.

On the morning of our experience the weather was unusually warm and the atmosphere was thick so that one could not see clearly for more than twenty feet ahead when we were returning. Just as the leader came upon the treacherous place he perceived a faint blackish yellow line along a very slight depression in the snow and was about to "sound" when he fell through. On crossing this place the first time, neither the guide, who was then the leader, nor the amateur perceived any sign of danger.

Whether a crevasse is always visible, except immediately after fresh snow, may be perhaps considered a moot question, but one is inclined to agree with the late A. F. Mummery that "even if the leader is careless and does break through, the rope, if used with any readiness and skill, ought to check his going in beyond his waist." From the fact that the leader in this instance fell at least ten feet before he was checked, it is to be inferred that the rope was not taut between the climbers.

High authorities maintain that a party should never consist of less than three persons, especially on a glacier; a view not shared however by the authority just quoted, who, after pointing out the absurdities to which such a doctrine leads, remarks: "It is a curious fact, that, from the earliest days of mountaineering, two guides, dismissed after crossing a pass, have been in the habit of returning home by themselves. When it is remembered that such extensive and fissured fields of neve as those traversed by the routes over the Col du Geant, the Monch-Toch, the Weiss Thor, the Col d'Herens and the Breche de la Meije are amongst those which have been habitually crossed by two guides alone, it would appear that the danger to such parties is almost or quite non-existent." ("Climbs in Alps and Caucasus," page 351). This view was upheld by two celebrated guides of Grindelwald with whom I discussed the details of my accident. Certainly I should not hesitate to cross the Col du Geant or d'Herens, both much more formidable snowfields than the Glacier du Vaibez, with one companion.

But your experience, it may be said, illustrates forcibly the view that if one man falls into a crevasse his companion will be unable to pull him out; and this is the strongest objection to two men climbing alone, which may in certain rock climbs be even advisable. Well, of course, no one goes out with the idea of falling into a dark and icy chasm[5]. It is something not on the programme, and may be regarded generally as a quite unnecessary incident. And it is not indulged in nearly so frequently as some people imagine, but it seems not to be always preventable. Those who have an irresistable impulse to test the depths of crevasses ought certainly to travel with several capable companions, and might do well in addition to possess themselves of a portable windlass. With the rope used in the ordinary way, as we were using it, it seems impossible for one man to get his companion out again. But if the rope be used doubled, as it ought to be in the case of a party of two persons on a glacier which neither of them knows, and one length of it be provided with two loops, one near to each other, it seems quite possible to extricate a companion in a manner described by Zygsmondy, Mummery and others. The rope can be then so employed that two men are engaged in pulling up one. This is what we attempted, imperfectly, to do, and came very near succeeding in accomplishing.

IN MEMORIAM.

Edward Whymper.

The death of Edward Whymper, which occurred on September 16th, 1911, at Chamonix, called forth many appreciative memorials both in England and on the Continent, reviving the story of his remarkable mountaineering career during the sixties and seventies of last century. He had gone on a round of visits to some old familiar centres, arriving at Chamonix on September 10th in such bad health that he told friends it was doubtful if he should ever come again to see his beloved mountains.

According to an English paper, during the last days he was haunted by that tragedy which carried his name over the whole world in 1865. “I am seventy-two and I am finished,” he said; “every night, do you understand, I see my comrades of the Matterhorn slipping on their backs, their arms outstretched, one after other, in perfect order at equal distances —Croz, the guide, first; then Hadow, then Hudson, and lastly Douglas. Yes, I shall always see them slipping in order on their backs with their hands turned back, and I shall never see Zermatt again, where I spent my most ardent hours, nor my Matterhorn.”

Within a week the old mountaineer was buried in the midst of the mountains, his coffin carried to the grave by ten of the most famous guides in the district. All the villagers, and every passing tourist attended the funeral, various Alpine Clubs being represented by individual members, every club in Europe sending wreaths of alpine flowers. “Nothing could be more melancholy,” wrote an eye-witness, “than the long procession under a grey sky, pierced here and there by lofty aiguilles brilliant in new fallen snow.”

Among the speakers at the grave in the English churchyard, one recalled “that fabulous age when, following John Tyndall and Edward Whymper, the youth of England rushed to the conquest of the mountains.” Among the humble friends present who had known him for fifty years was an old man who had helped to carry down the bodies of those killed on the Matterhorn in 1865. These

5 On rotten rock, or wherever conditions render desirable the utmost expedition, two men of experience, if fairly equally matched, seem to be an ideal number.

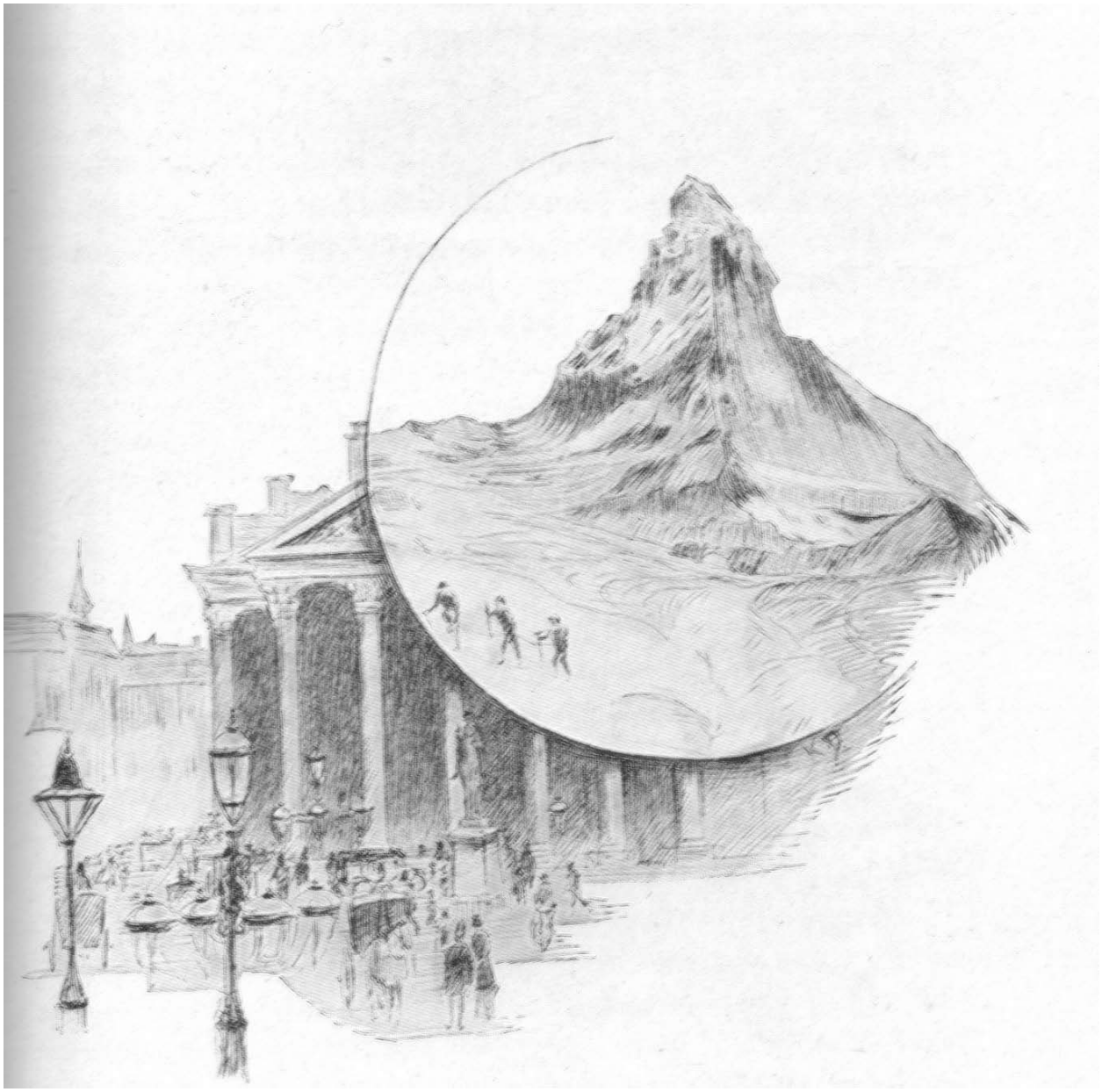
friends asked their spokesman to say "what a generous heart this man of steel possessed." No cloud had dimmed their relationship, and it comforted them that the patch of earth receiving his body for the long sleep was "a portion of his own true country." No doubt the grave will become a shrine for mountaineers as long as mountains are climbed.

Edward Whymper, born in London, April 27th, 1840, was the son of an artist engraver who attained distinction in the illustration of books and became a member of the Royal Society of Painters in Water-Colours. He succeeded to his father's business, maintaining its high reputation until the new photographic methods in illustration superseded the old. Indeed he was one of the last great wood engravers, and they are fortunate who possess the early edition of his books illustrated from his own etchings. He was, too, like his father, a talented artist in water colors.

It was solely as an artist that young Edward Whymper first went over to Switzerland, being commissioned in 1860 by Mr. Longman, the publisher, to make drawings for the second edition of "Peaks, Passes and Glaciers," a publication of the English Alpine Club.

Among the peaks on his list was Mont Pelvoux, then believed to be a virgin peak and the highest in the Dauphine Alps, which Professor Bonney and other members of the Club proposed to climb. But the season or the weather disposed otherwise, although a brave attempt was made. In the first chapter of his "Scrambles in the Alps," which can now be had for a nominal price in a popular reprint, Mr. Whymper gives a racy account of his tramps and scrambles during this first visit. Having tasted blood, as they say, he returned the next year to conquer Mont Pelvoux himself and to discover a higher mountain in the same chain, Pointe des Ecrins (13,462 feet), which was afterwards included in the brilliant first ascents made by him between 1861 and 1865. He was but twenty when he climbed Mont Pelvoux (12,973 feet), though this mountain according to one Obituarist, had already been climbed as early as 1848. Whymper's outstanding achievement during these years, indeed during his whole career, was his conquest of the Matterhorn. It was not accomplished in one assault nor in one season, and the tale of his nine attempts told by himself is amongst the great recitals of mountaineering. It occupies the greater portion of his "Scrambles Among the Alps." No Canadian climber can afford to be without that book. With his rare capacity of taking pains, he wrought at both text and engraving for six years, and it finally appeared in 1871. "Intellectual patience and perseverance" is the term applied by one of the climbing fraternity. These qualities it was, together with the sturdy physical stuff of the outward man, which won the Matterhorn, made the two Artic expeditions, and accomplished experiments at altitudes of 20,000 feet in the Andes, in times when a climber's equipment was not so luxurious as it is today.

Let us glance at the chronological list of Whymper's assaults on the defiant mountain, as set down by himself in a table of attempts, previous to the first ascent. There were altogether sixteen failures, Whymper making eight of them (seven on the Italian side), Tyndall preceding him by a year. In 1861 he made the first attempt with only one guide, reaching an altitude of 12,650 feet. The next year he returned to the attack five times, twice accompanied by a friend and always with guides save once, when he went alone and reached a height of 13,400 feet above sea, being the next highest altitude attained by him in that year. In the same year, Tyndall reached a point (13,970) below the final pitch, and then dropped out of the contest. Anyway, he had won the Weisshorn, upon which Whymper had set his heart. In 1863, Whymper made two attempts, and in 1864 he seems to have devoted all his attention to the Dauphine Range; but in June, 1865, he was back again on the Matterhorn, trying another route (still on the Italian side), and turning back at 11,200 feet. Notable among the guides employed by him in this determined enterprise, were Michel Croz, Christian Almer and Jean Antoine Carrel.



Great Things Are Done When Men And Mountains Meet. This Is Not Done By Jostling In The Street. William Blake.

The record of his solitary climb is a thrilling bit of narrative and a warning to every youth with ambition in that kind. Whymper slipped and fell nearly "200 feet in seven or eight bounds," and would had gone on bounding over a precipice 800 feet or more to the glacier below, but for his clothes catching on some rocks and arresting his fall. With quick presence of mind he staunched the flow of blood from his head with a lump of snow and scrambled to a safe place before fainting. When consciousness returned the sun was setting and the greater part of the 4,800 feet between him and Breil was descended in pitch darkness. In his interesting book on the Matterhorn, Guido Rey tells how, as a boy of ten, he was profoundly affected by the drawing illustrating the text of the story.

In "A Tramp Abroad," Mark Twain quotes Whymper's account, and adds: "His wounds kept him in bed some days. Then he got up and climbed the mountain again. That is the way with a true Alps-climber; the more fun he has the more he wants." Guido Rey was one day looking at the signature in an ancient visitors' book belonging to an Alpine inn: the autographs of Bonney, Tyndall, Grove, Leslie Stephen, Fresh-field, Mummery and other English climbers who came to "admire our Cervin" (the Matterhorn) or to climb it. Whymper's was there for the first time in August, 1860; and for the second in August, 1861, appearing in this wise, "Edward Whymper, en route for the Matterhorn." Says Rey: "That was the expression of his faith." Immediately below, someone had written in English: "This gentleman is always attempting the impossible, and then he curses everybody because he fails in his attempts." And, in another hand were the words: "Of course he went, and saw, and conquered," referring to Whymper's own remark in the preface to "Scrambles," when he spoke of the party failing on Mont Pelvoux: "They came and saw— but they did not conquer."

Guido Rey's account of Whymper's many trials and final success and his tribute to the man are good to read, showing as they do the noble spirit of the sportsman dominating disappointment over the failure of his own compatriots who were climbing that day on the Italian side, and who had the start of Whymper's party by, not hours, but days. The competition in this conquest was to him a matter of national pride alike for conqueror and route. Hitherto, Whymper himself had climbed on the Italian side; and it was only because Jean Antoine Carrel had, to use a western term, '"gone back on him," that he had hurried over to Zermatt to renew the attack on the Swiss side, racing the Italians. There is no space here even to give an outline of the expedition.

Whymper devotes one chapter to the ascent, and another to the descent, describing every detail with remarkable detachment and restraint, yet with convincing frankness. No doubt he erred in allowing so many to accompany him on a new and difficult and dangerous ascent, albeit two of them were climbers of some skill. It was the inexperienced man who slipped in a bad place and fell over Croz and so dragged the others when the rope broke. It was the broken rope that looked ugly. Some said it had been cut, but Whymper showed the world conclusively how impossible such cutting had been. Also, he told how, unknown to him, as he was sketching on the summit, when Croz, Hadow, Hudson and Lord Francis Douglas roped lower down, the old guide, Taugwalder, had used a weaker rope brought up in case they decided to attach pieces of rope to rocks in dangerous places. Climbers will always follow the narrative of this most famous ascent in the Alps with keen interest.

That Whymper held no grudge against J. A. Carrel for his defection, who was leading on the Italian side of the mountain against him, is proved by various high testimonials and by the fact that he took him out to the Andes. Carrel was a rare good guide and a man of character and intelligence, for whom the Matterhorn was a mighty obsession. He died an old man in 1890 on

his own mountain, from sheer exhaustion after sixteen hours struggle in a snowstorm, bringing his employer to a safe spot. A cross marks the place of his "fair death."

In 1867 and 1872, Whymper made expeditions into Greenland, discovering the interior of the country to be a plateau of snow-covered ice, and bringing back a collection of fossils and other things important to science, notably of the stone age in Greenland which came to an end only two centuries ago. From him Nansen learned the value of the sledge in that interior.

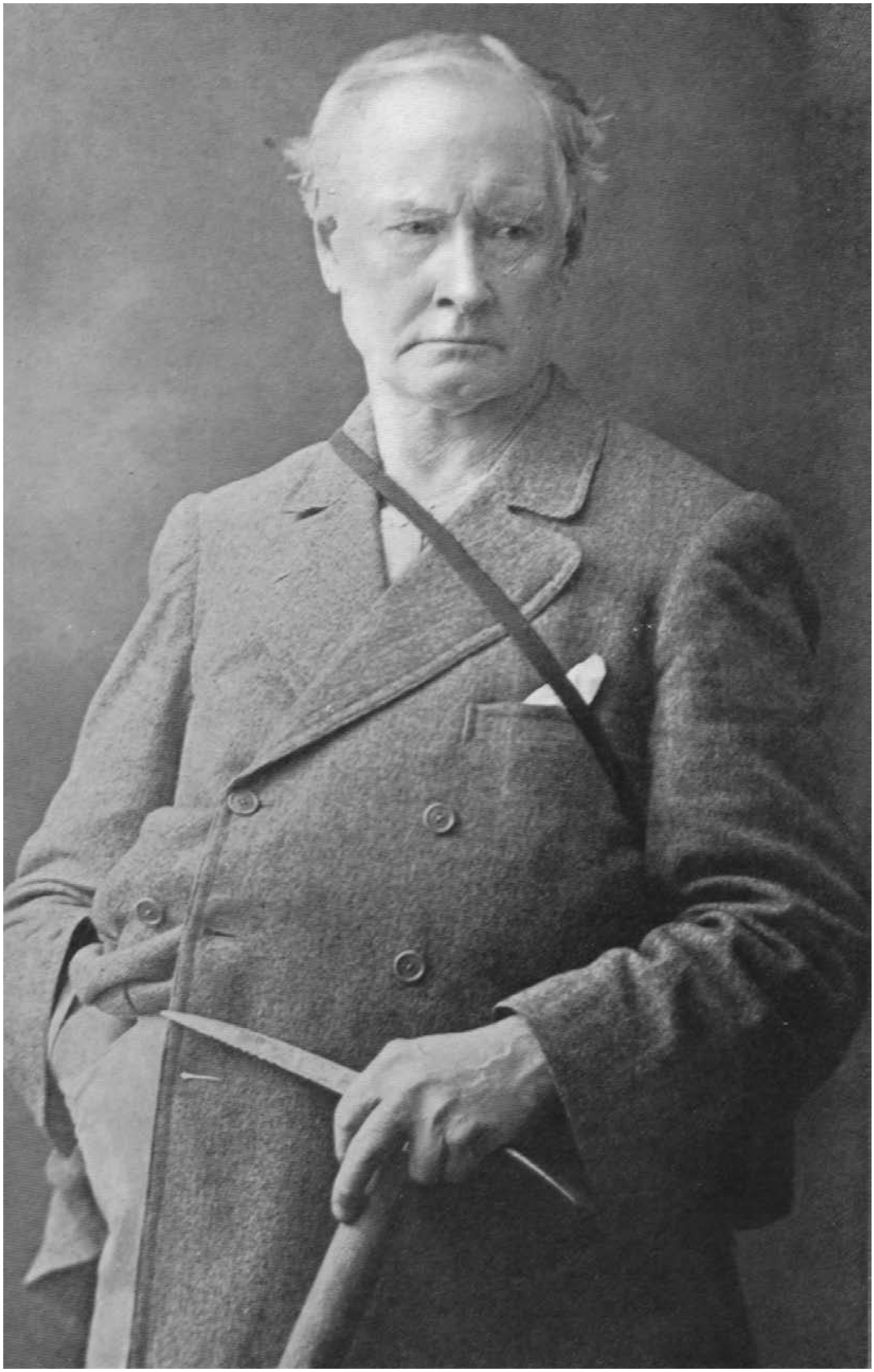
It was in 1880 that Whymper made his most important scientific expedition, when he chose the high Andes of Ecuador for making observations on the effects of low atmospheric pressure upon the human frame. Here he made, during about six months' exploration, many high ascents—twelve at least to altitudes over 15,000 feet above sea, half of them first ascents, as Chimborazo (20,545 feet) which he climbed twice. He spent twenty-six hours upon the summit of Cotopaxi (19,613 feet), the highest active volcano in the world, making an examination of the crater by night. Some weeks later, on his second ascent of Chimborazo, Whymper saw the mountain suddenly burst into eruption. Every quick observation of the phenomenon must have been minutely recorded on the spot, as indeed all the scientific researches made during the expedition, so vividly are scenes reproduced and so precisely are experiences narrated in his "Travels amongst the Great Andes of the Equator" which appeared twelve years later. His investigations included topographical surveys, comparisons of boiling-point observations, and of the aneroid with the mercurial barometer in measuring mountains; also collections in botany, zoology and geology from those great heights.

The scientific achievements of this great expedition won for Whymper the Royal Geographical Society's Gold Medal. His book closes with a noble testimonial to Carrel, whose death occurred before its publication. Carrel was his right arm all through every hardship and difficulty, deriving no advantage from the expedition but "hard-earned pay." Whymper points out how indispensable such men are to workers in elevated regions and calls upon the Society to acknowledge his unrewarded services "if not in justice, then upon the lower ground of policy." The appeal was not in vain, and a grant of £21 was made to Carrel's family, to mark "appreciation of the high services rendered to geographical science by the late J. A. Carrel ... by transporting delicate instruments to great heights with such care that on your (Whymper's) return to England they proved to have suffered no injury whatever."

It was in 1901, he being then in his sixty-second year, that Whymper came out to the Canadian Rockies, with four "crack" guides—Christian Klucker, Joseph Bossoney, Christian Kaufmann, and Joseph Pollinger. Upon his departure from London, one of those uncertain despatches informed us of Canada that the conqueror of the Matterhorn was on his way to conquer the Matterhorn of the Rockies (Mount Assiniboine), which for some half-dozen years had baffled younger climbers, and which had as effectually baffled the veteran we may be sure. I do not think Whymper attacked Mount Assiniboine at all, though he made observations from its base during a visit made to the mountain a year or so later. It is to be hoped that he has left some record of this visit and of his impressions of the mountain—its configuration, its ice and snow, its general setting, and the extent of its resemblance to his own Matterhorn. Had he been a much younger man, no doubt the Canadian Matterhorn had been his also.[6]

However, Whymper's first visit to the Rockies was not unfruitful. He accomplished considerable in another region of the Great Divide further north, making first ascents of high passes and three summits, besides discovering and exploring two new valleys, all in the region

6 Note.—Whymper did not reach the region of the mountain at all.—E.P.



Edward Whymper

of the Yoho. Also, he made expeditions in the immediate neighborhood of Lake Louise, camping at various altitudes and making scientific investigations. His four guides made the first ascent of the Mitre, that attractive though somewhat troublesome little peak standing back from the Lake Louise Valley between Mounts Lefroy and Aberdeen. Several good climbers have failed before and since on this peak, although it is now one of the stock climbs of the neighborhood, for skilful mountaineers.

Whymper published no account of his Canadian explorations. It was understood that he would prepare a climber's guide similar to his popular Swiss guide books. Happily we have slight records of his work in 1901, in "The Heart of the Canadian Rockies," by Mr. James Outram, who was Mr. Whymper's companion for several weeks in the Yoho. I remember reading a typewritten statistical report to the C.P.R. Company which had brought him out, and wondering at the abrupt stocktaking manner of the distinguished climber and author who had written at least one book whose literary charm gave it rank among Alpine classics. I wondered how he could avoid putting into these statistics some vital feeling of the mountain landscape in the new Alps which must have made the old appeal. Was it an instinctive thrift of expression in obedience to the ancient dictum against casting away pearls? I regret that I had not the wit to preserve this report. Two items only can I recollect, and that faintly; First, he reconnoitered for the Yoho expedition by climbing a spur on one of the minor peaks of Mount Cathedral; second, to a tributary of the Yoho, he recommended the name, Verdant Valley—probably the valley now known as the Little Yoho.

Whymper set up a camp on the meadows in the Little Yoho, and there for a fortnight, Mr. Outram was his guest. Their first joint expedition, however, was made from the Kicking Horse Valley, a few miles west of Field, up its north branch, the Amiskwi, as far as the mouth of the Amiskwi's tributary, the Kiwetinok, a stream rising near a pass of the same name which divides the valley from that of the Little Yoho. Returning by the same route to Emerald Lake, next day they crossed the Yoho Pass and followed a new trail, now well trod by man and bronco, over the steep terminal moraine immediately below Emerald Glacier, and on through the forest glades and open alplands that give such splendid views of the Waputik snowfields across the Yoho Valley,—and on to camp in the Little Yoho. From this camp, Whymper, with T. Wilson, the well known outfitter of these days, and C. Klucker, made the first crossing of Kiwetinok Pass into Kiwetinok Valley and returned to Field by way of the Amiskwi and the lower slopes of the President's Range, a tramp of seventeen hours, involving very heavy work in timber and thicket. Some days later Whymper and Klucker climbed and crossed the virgin Emerald Col, 9,800 feet high, in the same range.

Among the mountains climbed in this region by Whymper during August and September of 1901, were Mount Habel (10,600 feet), Mount Collie (10,500 feet), Trolltinder (9,600 feet), a peak on Mount Balfour, Isolated Peak (9,300 feet), and Mount Wapta (9,000 feet), the first four being virgin summits. Various cumbersome instruments, including a huge tripod, were carried and transit readings and panoramic photographs were taken, between two and three hours being spent on several summits. The round excursion on Mount Habel occupied fourteen hours and fifteen minutes; that on Mount Collie half an hour less. And this must be conceded very fair going for a climber in his seventh decade.

The ascent of Mount Collie makes interesting reading to those who know that wild garden set in a gusset of Yoho Glacier right under the shadow of the wall of Yoho Peak. Leaving camp at 4.45 a.m., with guides Klucker, Pollinger and Kaufmann, Whymper and Mr. Outram were at the forefoot of Yoho Glacier shortly after 5 o'clock. Some step cutting and an hour's tramp upward on the ice brought them to the garden which later climbers in enthusiastic mood have pronounced

more beautiful than the famous Jardin in the Mer de Glace. It is an alp, set with clusters of larch, spruce and low shrubbery, carpeted with heather and gay mountain flowers according to their season, watered by little streams falling from the wall of grey rock above. Leaving the garden, the party proceeded up the glacier and reached the south-eastern arête of Mount Collie at an altitude of 10,100 feet, by 10.40 a.m., having taken nothing to eat since early breakfast in camp. Here Mr. Outram struck for the second breakfast; and. after refreshment and rest, a scramble of thirty-five minutes brought them to the summit. Mount Collie had been attempted but once before, in 1898.

In 1901, June 18th, Whymper crossed the Vermillion Pass from the Bow Valley and explored that district until the 2nd of July. He then attempted the ascent of Mt. Ball, but was not successful. His investigations led him to conclude that Dr. Hector's Mt. Lefroy was not the mountain now so called; also that the mountain Hector named Ball is now called Storm Mountain.

At the end of August of the same year, he went into Ice River Valley, coming out the 8th of September. He again went in at the beginning of October, and stayed there until the end of the month. He was greatly attracted by the beautiful royal-blue sodalite found in Sodalite Valley, tributary to Ice River Valley, and carried a quantity of specimens back with him to England.

Whymper spent several seasons in the Rockies, once remaining as late as December, but he did almost nothing in exploration, at least in breaking fresh ground. It may be, and who that knows his "Scrambles in the Alps" and "Travels in the Great Andes" will not hope for it, that he has left in manuscript some record of these experiences and impressions of 1901. If his pen had not lost its cunning, the impressions of a climber so eminent in Alps and Andes had been an addition of great value in the literature of the Canadian Rockies.

Whymper's last visit was an extremely short one, in 1909, when he came as a guest to the A.C.C. Camp at Lake O'Hara, remaining three days only. Though sixty-nine years of age, he walked the eight miles of trail from Hector both coming and going. He was said to be broken in health, but his eyes and skin were remarkably clear for a man of his age who had endured the climbers' hardships in all altitudes and in different latitudes. His countenance was dour, and I did not once see him smile. His last published photograph, which appears in the Nelson reprint of his book on the Andes, is an excellent likeness. This portrait is reproduced in the English Alpine Journal ; also, one taken at the age of twenty-five, which is quite unlike the other, but bears a striking resemblance in feature and expression to one of the poet, Francis Thompson, taken at the age of eighteen.

Whymper was a Knight of the Order of St. Maurice and St. Lazare; an honorary member of the French Geographical Society, and of the French, Swiss, Italian, American, and Canadian Alpine Clubs; of the Sierra and Appalachian Clubs; and served as Vice-President of the Alpine Club (English) for two years. As already indicated, he had the gift of alluring descriptive narrative. A self-made scientist, he was a close and keen observer of natural phenomena, and the artist in him entered into his story always, so that 'his books are as full of charm as of information. There is no mirth in his occasional humor.

Here is an example from his introduction to "Travels in the Great Andes," in which he explains that the book confines itself solely to the objects of the expedition: "I concerned myself neither with commerce or politics, nor with the natives and their curious ways; and there are, besides, many interesting topics which might be dwelt upon that find no place in this volume. The Ecuadorian Loan, for example, is a capital subject, and a few pages might well 'be devoted to a matter in which the public takes so much interest, and from which it derives so little."

"Zermatt and the Matterhorn," "Chamonix and Mont Blanc" are models of what an Alpine

guide-book should be, and have gone into some fifteen editions.

Mr. Whymper's regard for the Canadian Rockies and the Alpine Club of Canada, of which he was an Honorary Member and a strong supporter, is shown by the fact that he left a legacy of £50 to the Club, with which it is proposed to erect a suitable tribute to his memory at the Banff Club House.

Elizabeth Parker.

Alice G. B. Jones.

It is with deep sorrow we record the death of Mrs. Stanley L. Jones, an original member of the Alpine Club of Canada, who died of pneumonia at Calgary, Alberta, on the 25th December, 1911, aged 34 years. She was the daughter of Peter Todd, Esq., of Walkerton, Ontario.

Her husband, Stanley L. Jones, is also an original member of the Alpine Club. They were married at Winnipeg, 27th March, 1905, by the Rev. Charles W. Gordon (Ralph Connor).

One of the earliest among Canadian women to take an interest in mountaineering, and by her example to initiate the noble sport, Mrs. Jones graduated to Active membership at the first Annual Camp of the Alpine Club, held at Yoho Lake, near the summit of the Yoho Pass. She was the first married lady to make the ascent of Mt. Vice-President, and was with the second party sent up on that memorable occasion.

In her quiet way Mrs. Jones was an active force in charitable work. She was a devoted supporter of the Club and its ideals, an enthusiastic lover of Nature as seen in the mountain wilds, and a charming and sympathetic comrade around the camp fire. She attended several of the Annual Camps and was with her husband, a frequent visitor to the Club House at Banff. Mrs. Jones is a distinct loss to the Club, and we shall miss her much.

ALPINE CLUB NOTES.

Mountains Of Northern Alberta.

J. Norman Collie and A. L. Mumm, accompanied by the guide Moritz Inderbinen explored a portion of the mountain area lying north of Robson Pass, and west of Smoky River in the Province of Alberta.

The scene of operations was reached by way of the Stony River, which enters the Athabaska near the site of old Jasper House. It took seven days to cut a trail a distance of twenty-five miles to connect with the trail made the previous summer up the middle fork of the Stony River. When at the pass at the head of the middle fork, leading to a tributary of the Smoky River, Hoodoo Peak was climbed and plane-table observations made for mapping purposes. The route of the year before was now followed, passing Twin Tree Lake, to the Smoky River. Arrived there, a stream which is referred to as Glacier Creek on Dr. Collie's map was ascended. It led to a glacier which he describes as the biggest he had seen in the Canadian Rockies, with the exception possibly of that from the Columbian Icefield, at the head of Bush River Valley.

"About two miles from the bottom is the first icefall, and about a mile further on the second and larger one." The first is reported as easily passed, the second is more difficult: "there is a moderately easy way between the ice and the rock, but it is distinctly dangerous, being overhung by huge séracs and walls of ice that are perpetually falling, sending down hundreds of tons of ice that sweep the route from top to bottom."

A peak on the west side of the snow-field above the glacier was climbed, which the map states to be 11,300 feet.

Leaving this valley the party travelled up the Smoky River to the valley below Mt. Bess, leading to the pass across the Continental Divide discovered the year before.

On August 24th Mt. Bess was climbed; altitude said to be 11,300 feet. "Starting from the pass with Yates and Inderbinen, we went in an easterly direction so as to get to the top of a spur of the big mountain. . . . Beyond this the real climbing began, and the rock changed to limestone. We had to make our way up steep slopes of snow, and then, in order finally to get on to the southwest arête high up, to climb up precipitous bands of rock. Fortunately small gullies helped us, and after a good deal of ice-work Inderbinen brought us safely on to the ridge that led up easily to the final summit. . . . We could see mountains one hundred miles away in every direction. For the first time, through a break in the hills to the east, I saw the level pine forests stretching away to the prairie. The Cariboo Mountains were, as usual, specially fine. Far away to the south was a grand mountain in the Selwyn Range with a great glacier on its east and northeastern faces. Mt. Geikie towered up, showing his grim precipice s plainly through the clear air, and far away in the dim distance at the head of the Athabaska was a shapely snow pyramid that looked like Mt. Columbia. As we gazed in every direction over peaks, glaciers, snow-fields and valleys, we recognized how much remained still to be done in this new land." (Dr. Collie in the Alpine Journal, February, 1912.)

Camp was next moved to the west side of Mt. Bess, and an old Indian trail followed to a mysterious valley which led along the west side of the whole group of mountains north of Mt. Bess. From neither of the two peaks climbed had it been possible to discover whither this valley led. It was surmised that it held the headwaters of the Beaver River, a tributary of the Fraser. To the southwest of the mysterious valley was seen a curious piece of country. "Instead of being a series of peaks, it is a rolling moor covered with grass. Over this one can walk for miles surrounded by great snow mountains, and with deep pine-clad valleys on both sides, and occasional glimpses

through gaps in the mountains of the far-distant Glaciers." The return journey was made by the same route, as far as the point where the Stony River flows southeast to the Athabaska, that stretch of twenty-live miles where seven days had been spent in cutting trail when coming in. Here, instead of following the Stony Valley, the party crossed over to the headwaters of Hay River and returned to the railway by the valley of Solomon Creek.

Accounts of the expedition will be found in the Alpine Journal for February, 1912 (Vol. XXVI, No. 195), and in the Geographical Journal for March, 1912 (Vol. XXXIX, No. 3). The article in the latter is accompanied by a map. It is a skilful piece of work, and a creditable result for two short seasons. The principal valleys and some of the principal peaks are shown; also the routes followed by Dr. Collie and Mr. Mumm, in their several expeditions. It is on too small a scale to show the country in detail, and, while it will be found of much service to future explorers in pointing out the main lines of travel, it is inadequate to show the true alpine nature of this glorious tract of mountain country. The fretwork of minor valleys, each a gem of alpine beauty, the hundreds of glaciers that line their sides, and the sparkling, jewel-like lakes that lie embosomed in them, require a more detailed survey and a larger scale map to enable them to be portrayed with justice. As an instance it may be mentioned that in the heart of the Lynx Range, close by Mt. Robson, is a snow-field, five miles long by two wide, with four glaciers flowing from it, across the centre of which passes the line of the Continental Divide. Dr. Collie is to be congratulated upon a good piece of map work that has paved the way to a more minute delineation of the region.

Two points in the accounts of the expedition stand out prominently:

(1) Referring to the large glacier first visited, Dr. Collie says in the Geographical Journal: "The glacier itself is most interesting and appears to be advancing very considerably; in fact most of the glaciers that I have visited in the Rocky Mountains, during the last fourteen years, seem to be advancing." This statement is at variance with the methodical observations that have been carried on for a number of years in connection with the Victoria and Yoho Glaciers in the main range, and the Illecillewaet and Asulkan Glaciers in the Selkirks, all four showing a generally steady retreat. Moreover, the observations made by the Canadian Alpine Club's expedition of the summer of 1911 seem to indicate a retreat of the Robson Glacier when compared with Dr. Coleman's observations of 1908.

(2) Dr. Collie refers several times to a fine group of mountains lying beyond Tête Jaune Cache, directly west of McLennan River. He says in the same article: "Far away in the distance beyond Fraser Valley and Tête Jaune Cache rises the great range of the Cariboo Mountains. We could see several high peaks, great snow-fields and more than one great glacier. This mountain land, in the near future, should prove a great field for mountain exploration. At the present time it is practically impossible to get at; even the hardy prospector has never penetrated into its fastness. The dense western forests with their fallen trees, their underbrush full of devil's club, and the turbulent glacier streams have stopped even the most venturesome. Possibly when the Grand Trunk Pacific Railway has opened up the Fraser Valley, it will be possible to send in men with saws to cut through the immense fallen logs and with axes to clear a trail, but it will need both time and money to do it. It will, though, be well worth accomplishing, for the Cariboo mountains, in my opinion, are a finer range than the Selkirks. They are probably higher, and certainly the peaks are very beautifully shaped mountains. This is to be expected as they are formed of a very old rock, namely the archaean."

The mountains above referred to as the "Cariboo Mountains" furnish the original source of supply for the Canoe and North Thompson Rivers. It is not thought that they extend so far west as

the Cariboo mountains of golden fame, but Dr. Collie's opinion as to their attractiveness is strongly corroborated in the report of the Canadian Club's expedition appearing in the earlier pages of this issue.—Editor.

Northern Selkirks.

Professors E. W. D. Holway and F. K. Butters, accompanied by Howard Palmer were again in the Northern Selkirk country.

The expedition, lasting through June, July and August was in two parts. The first followed their previous line of travel, via Gold River, a tributary of the Columbia on the eastern side of the Selkirks water shed, below Beavermouth. It brought them to the Sir Sandford Glacier on June 14th, where a headquarters camp was established for a period of five weeks.

A reconnaissance survey was made of the country north and west of Mt. Sir Sandford, using the camera and a light mountain transit to secure information necessary to make a map of the area explored. In the course of the survey six peaks were climbed, ranging, according to computations by Howard Palmer, from 9400 to 11,000 feet above sea level. Chief among these was the first ascent of a peak which they named "Mt. Austerity," 10,980 feet; one of a group of higher peaks, for two of which the following names are suggested: "The Gothics," 10,650 and Mt. Adamant, 10,980 feet. Beyond this group the end of the range encircled by the Columbia, with two exceptions, sinks to low uniform ridge, rising little above snow-line.

In an article appearing in the Bulletin of the American Geographical Society, Vol. XLIV, April 1912, Mr. Palmer claims that the party located Walter Moberly's line of travel and pass across the Selkirks in December of 1871. Moberly's reference to it is found in his pamphlet entitled "The Rocks and Rivers of British Columbia" published by him in London, England, in 1885.

The reference is meagre. He merely states that, with his Indians, he descended the Columbia River for a considerable distance, struck into the Selkirk Range, and came upon the head waters of Gold River, which stream he descended to the Columbia Valley on the west side of the Big Bend. The Gold River here mentioned is undoubtedly Gold Stream (flowing west to the Columbia). If the stream Moberly ascended from the east was Gold River (flowing east to the Columbia) it is quite likely that he crossed by the pass now located, as it would be the most direct route. At that time of the year Moberly's party would travel on snow shoes and would not necessarily be confined to any particular valley.

While camped here, interesting measurements were made of the Sir Sandford Glacier, and an average daily rate of flow of 6.73 inches computed for a period of fifteen days. Mr. Palmer states that during the time the weather was cloudy and rainy, with an average mean temperature of 66.7 ºF., so that the figures given indicate less than the usual summer activity.

Photographs compared with some taken on July l0th, 1910, from the same station, showed a marked retreat of the ice. Measuring with a tape from rocks identified from the photographs, and comparing with estimated distances from the same rocks in 1910, it was estimated that the average recession of the ice for the elapsed period of fifty weeks had been 37.3 feet. The estimated distances of 1910 is the weak point in the deduction. Still, there would probably be sufficient margin to establish the fact that the glacier was in retreat, which is the vital question.

A full account by Howard Palmer, with a map and some good photographs will be found in the May number of the Geographical Journal (Vol. XXXIX No. 5). Mr. Palmer is to be congratulated upon the observations he has begun in connection with the Sir Sandford Glacier. It is hoped that he will be able to continue them yearly, as it is only through a systematic annual series of such

Mt. Sir Sandford, From The North. Photo, E.W. Harnden

SPECIAL NOTE FOR THE CAJ DIGITAL EDITION

An oversized fold-out map of the Northern Selkirks was included in the hardcopy version of the 1912 Canadian Alpine Journal.

It is not included in this digital version due to size restrictions.

observations that they become reliable and of value to render true results.

The second part of the expedition led up the valley of the north branch of the Illecillewaet River. The first ascent was made of a peak five miles west of the pass between the north branch of the Illecillewaet and Downie Creek. The name Mt. Holway is suggested for it and its altitude placed at 10,100 feet. The second ascent of Mt. Sorcerer, 10,500 feet, close to the pass on the northeast, was also made. The first was by P. A. Carson, several years ago, when in charge of the Dominion Government triangulation of the Railway Belt.

The work done on this side of the watershed, combined with that already done on the eastern side, has provided useful information concerning the intricate valley system of the northern portion of the range. The party is to be congratulated upon the results obtained and the interesting information it has given to the public, entailing much hard work and physical energy, and great patience and perseverance in travelling through the wilderness of densely forested valleys enclosed by snow-enshrouded peaks and passes. A fair knowledge has been obtained of a region of great alpine interest; one especially attractive, through the vast quantities of ice and snow that cover the mountain crests and fill the radiating valleys, due essentially to the geographical position of the range in relation to the Pacific Ocean.

It is a pity that this delightful alpine area is so inaccessible and that it requires such tremendous physical exertion to overcome the difficulties of the semi-tropical forests that lie between the aspirant and his objective mountain crests and valley heads. Still, some day, pony trails and the utilities of navigation on the Columbia may render the section as easy of access as at present round Glacier House, while alpine summer hotels may combine the beauties of Nature at her outposts with the luxury of an ultra, up-to-date civilization.

Full accounts will be found in articles written by Mr. Palmer in the Journals already named. That in the Bulletin of the American Geographical Society is accompanied by a skeleton map, which shows the various drainage lines, the principal peaks, and the position of the line of the watershed, together with the various passes by which it may be crossed.

Mt. Sir Sandford still remains unclimbed, but it is sincerely hoped that the party whose expedition is above outlined will again visit the region and will yet be the victors, for it is their due, of this, so far, unconquered monarch of the glorious, entrancing, enticing, but devilish Selkirks.—Editor.

Note.—Since the above was written word has come that the summit of Sir Sandford has at last been reached, the first ascent having been made last July by Messrs. Holway and Palmer under the guidance of the well-known Swiss guides : Edouard Feuz Jr. and Rudolph Aemmer, both in the service of the Canadian Pacific Railway Company. - Editor.

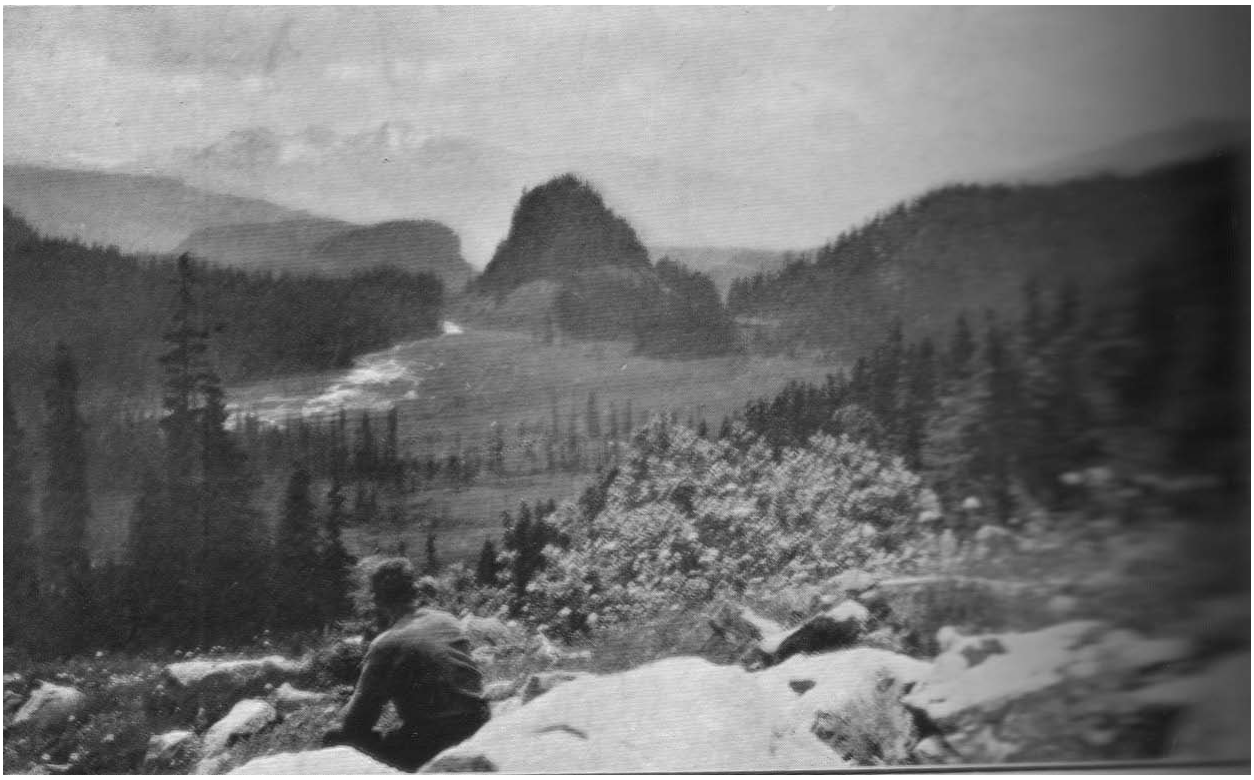
The Mamquam And Tantalus Groups

In the end of July, 1911, Messrs. B. S. Darling, A. F. Armistead, J. S. Davies, F. W. Hewton, and A. B. Morkill made a very interesting expedition into the Mamquam mountains at the head of Howe Sound, B.C. From Squamish the route lay past Norton's Camp and the "Trapper's Cabin" to the end of the blazed trail at the foot of Garibaldi. The camp was pitched for the night at Columna Col, which lies between the high meadows and Garibaldi. Starting up the long slope which leads to the north arête, this was, at a convenient point, left for the snow covered glaciers to the right, and the party made across below the southeast face of the Pinnacle, and up the snow slope of the east face which, though badly crevassed, was comparatively simple. From the little snow-field which lies between the Dome, Pinnacle and Peak, the main summit was attained by easy though rotten

Mt. Garibaldi. Photo, B.S. Darling

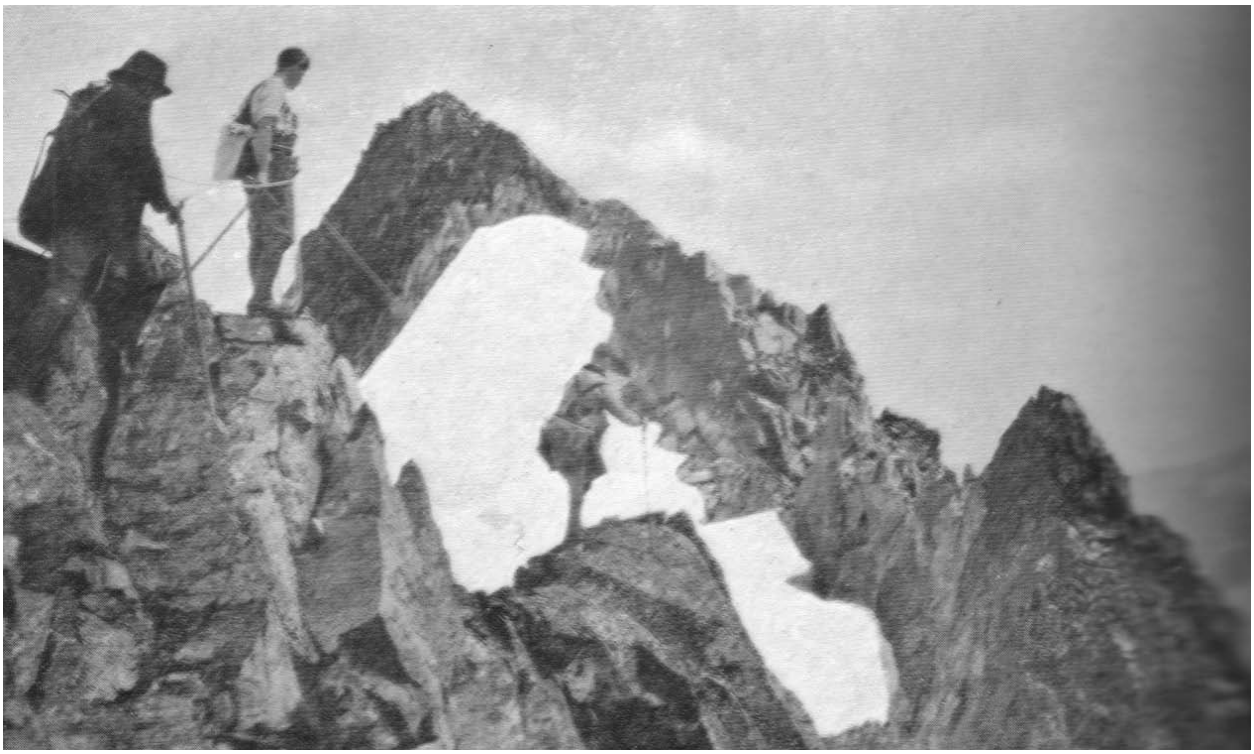
Mt. Alpha And Mt. Serratus. Photo, B.S. Darling

The Mamquam Group. Photo, B.S. Darling



The Eenastick Meadows. Photo, B.S. Darling

Top Of Icefall, Tyee Glacier, Mt. Mamquam. Photo, B.S. Darling



Ridge Of Mt.Mamquam. Photo, B.S. Darling

One Of The Garibaldi Glaciers. Photo, B.S. Darling

rocks.

After lunch the start for the Pinnacle was made in heavy mist. As far as the first tower the rocks were good, though shattered. At the red rocks, below the two grey horns of the first tower, is a distinctly bad place, where the rock gave place to red clay. Here the ridge has to be straddled until the horns are reached. Thence snow led to the base of the second tower, below which the party traversed and reached the red rocks, from which, after a drop of fifteen feet the grey and rotten tower of the final pinnacle rears its head of formidable looking rocks.

Darling led up the Pinnacle followed by Hewton. A forty-foot rope was fastened to the rock, and the rest of the party followed. The rope had to be left as there was no way of detaching it after the last man was down. All the while the mist had been thick. On reaching the snow-field between the Pinnacle and the Peak it was found that nearly five hours had been consumed in the climb of five hundred feet.

Another expedition was made into the heart of the Mamquam group. Heading round the hillside for the snout of the most westerly of the ice-streams flowing from the Garibaldi névé, the party made for a little lake into which the third and last of the southeast glaciers flowed, not in the ordinary well defined tongue, but in a wall of half a mile in extent about twenty-five feet high, over which the surface streams fell. Thence, a series of park-like benches lead down to Mamquam Lake into which three waterfalls flow within fifty feet of each other. Following the stream leading from the lake a meadow was reached, one of the most beautiful spots in the whole region. It is about a mile in length, and is completely filled with soft grey willow and great masses of blue lupin. It was named Eenastic (Willow) Meadow. The outlet is guarded by a rock fortress some three hundred feet high, with a small lake on each side, making entrance from that end difficult. Turning up the Mamquam stream, camp was pitched on its bank, just below the icefalls seen from the camp on the Garibaldi meadows.

Next morning the party followed the tongue of the glacier till the icefall was reached, when the rocks on the left were climbed for about 300 feet, affording splendid views of the superb icefall all the way. At the top of the rocks steps were cut in the ice before reaching the snow-covered glacier. It lay like a saucer, with an occasional tower of rock standing dark against the intense white of the snow and the clear sky. The peak was protected by a bergschrund below steep rocks, but this was crossed at the foot of the west arete, and the summit (8425 ft.) gained. The view was very fine, Garibaldi, to the west, being the most prominent and striking object, but great fields of snow and hanging glaciers could be seen in every direction. Small representatives of the cruciferae and also of the polygonaceffi were found growing at the summit.

The descent was uneventful, and the party then divided; Armistead and Hewton going to Vancouver, the rest to Brackendale with the intention of climbing Mt. Tantalus.

The Squamish was crossed at Tetzlaff's Clearing, and the ascent commenced through the burnt timber on the ridge whose head separates the two glaciers on Mt. Tantalus. Camp was pitched just below the summit of the ridge, from which a fine view is obtained. Leaving Camp about nine the next morning the way was threaded through a mass of crevasses towards the base of the rock peak of Tantalus which was reached at two o'clock. Then began the ascent of the great Gendarme; the rocks were good but the climbing none too easy, and on passing it some nasty corners were encountered, one of which at first appeared impassible. But it was finally conquered after crossing a sharp ridge which had to be straddled. The summit was achieved and found to have an elevation of 8125 feet. The cliff walls near the summit were dotted with the silene acaulis, romanzoffia sitchensis, and several yellow flowers, but as the specimens were lost on the return journey they

could not be classified.

As it was nearly six o'clock when the summit was reached, it was decided to try the north slope for the descent. Leaving the rocks for the snow below the north face, going proved to be almost impossible, owing to a succession of large schrunds which crossed the slope. However, the lower slope was attained with much difficulty and travelling then became easy as far as the base of the main rocks where the way was stopped by a tremendous cliff. Working down a crevasse at right angles to this, a descent of some forty or fifty feet was made, but passage was then barred by a clean drop of thirty feet. Darling was lowered on the rope and then doubling it on the axe Davies and Morkill descended, the axe having to be sacrificed. Cutting steps on the slope below for twenty or thirty feet the party crossed the schrund on a bridge and found itself once more on the glacier. The tracks made on the ascent were found and camp reached about eleven thirty. The next day the axe was rescued.

Mr. Allan K. Morkill kindly prepared an article for the Journal, of which the above is a summary. Unfortunately it was received too late to be included in full. It has many references to the magnificent flora of this park-like region and, as the writer has made a study of botany, he speaks with authority. The numerous species mentioned show the great wealth of the district in this respect.

The expedition is of importance, for it shows that within twenty-four hours of Vancouver, the devotee of the noble sport of mountaineering can reach an almost unknown region of towering peaks, wide snow-fields and magnificent glaciers, with rolling alplands and cliff-encircled meadows at their bases, veritable hanging gardens filled with flowers that for beauty and colouring vie with the choicest productions of the tropics.

Although the highest of these peaks only attain an altitude of between 9000 and 10,000 feet, it must be remembered that they rise direct from sea level, and as climbing feats are a greater test of physical endurance than the better known massifs of the great ranges whose basal valleys lie at from 5000 to 6000 feet above sea level.—Asst. Editor.

The Richardson Group.

The mountain group immediately west of Ptarmigan Pass, which, according to Mr. R. E. Young's map of the Rocky Mountains between Lat. 51 ° and 53 ° 10', is composed of Mt. Richardson, Pika Peak and Ptarmigan Peak, runs generally In a northeasterly and southwesterly direction. Although, when viewed from the north, only the three peaks already named are visible, the group is composed, in fact, of four peaks, of which, commencing at the southwest, Mt. Richardson is the first, Pika Peak the second, an unnamed peak which may be designated as peak Number Three the third, and Ptarmigan Peak the fourth and easternmost. On September 7th, 1911, these peaks were ascended by a party composed of Mr. L. M. Earle, F.R.G.S. (a member of the English Alpine Club) with Rudolph Aemmer as guide, and Mr. Lewis L. Delafield (Alpine Club of Canada and American Alpine Club) with Edward Feuz, Jr. as guide.

Starting from a camp established in Ptarmigan Valley, immediately south of Ptarmigan Peak, Mr. Earle and Aemmer reached the summit of Mt. Richardson in about three hours by the north arête, encountering immediately below the final snow-cap Mr. Delafield and Feuz, who, in the meantime had crossed the summit after ascending by the south arête. The ascent from the south is made by a rock arête and shale and snow slopes which present no difficulty. The north arête, composed above the col of snow and ice, is steep in places, and is overhung near the summit by a cornice which might prove troublesome on occasions.

Black Douglas And White Douglas. Photo, Jas F. Porter
Showing The Arete Joining The Two Peaks.

After descending by the north arête to the col between Mt. Richardson and Pika Peak, the entire party ascended the latter peak by its westerly arête in somewhat less than an hour. This arête, which at a distance looks difficult, and which, in fact, is steep, is composed of rocks so broken as to render the ascent quite easy. The easterly end of the narrow rock ledge composing the summit was examined with a view to ascertaining the practicability of a direct traverse to the head of the couloir which separates the peak from Peak Number Three; but, even if such a traverse be possible, the condition of the rocks which were covered with new snow on the day of the ascent, forbade the attempt. A descent was effected, therefore, to the south upon substantially the same line followed in ascending.

Having reached the level of the col already referred to, Mr. Earle with Aemmer effected a traverse to the east over difficult rocks upon the north faces of Pika Peak and Peak Number Three, finally reaching a glacier lying north of the two peaks, which ascends by steep slopes of broken neve to the summit of Ptarmigan Peak, which was reached by Mr. Earle by the route thus indicated, after effecting the crossing of two large bergschrunds and a number of large transverse crevasses not very securely bridged.

Upon leaving the col between Mt. Richardson and Pika Peak, Mr. Delafield, with Feuz, traversed the south face of the latter peak upon scree slopes immediately below the final precipice, as far to the east as the couloir which separates Pika Peak from Peak Number Three. They then ascended, at first by the snow-filled couloir, but higher by the rocks upon its east side, to the summit ridge. This ridge near the couloir is narrow and much shattered, but an easy traverse upon the north face rendered it possible to avoid the more serious difficulties, and the ridge was regained, several hundred feet west of the summit, and was followed to the highest point. The rocks of this peak, except on the summit ridge are excessively rotten, but although the angle of the final ascent to the summit ridge is quite steep, they are so broken that, except at a few points on the final ridge, the peak offers rather a scramble than a climb.

Both Aemmer and Feuz believe it possible to effect a direct descent from the summit of Pika Peak to the couloir which separates it from Peak Number Three, and from the summit of that peak to the head of the couloir which separates it from Ptarmigan Peak. The attempt under favourable conditions, no doubt, would be interesting, but it is believed that to effect such a traverse it would be necessary to "rope off" at several points.

The entire trip, as made by Mr. Delafield and Feuz, occupied about eleven hours. Mr. Earle and Aemmer, owing to their ascent of Ptarmigan Peak by the route already described, occupied an hour longer.

No evidence of any former ascent was found upon Mt. Richardson, Pika Peak or Peak Number Three, and it is believed that Ptarmigan Peak had not been ascended before by the route followed by Mr. Earle and Aemmer. Two cairns were erected by us on the rock ledge immediately south of the snow summit of Mt. Richardson, and we also placed cairns upon Pika Peak and Peak Number Three.

The height of Mt. Richardson is stated by Mr. Young's map to be 10,115 feet, and Pika Peak and Ptarmigan Peak are placed by the same authority at 10,015 and 10,060 feet respectively.[7] It seemed to Mr. Delafield, when upon the summit of Peak Number Three, that Pika Peak did not surpass the ridge upon which he stood by more than two hundred and fifty feet.

A direct ascent of Pika Peak and Peak Number Three, respectively, over the steep rocks

7 The altitudes quoted from Young's map are from A. O. Wheeler's photo-topographic survey of the district for the Dominion Government.—editor.

which rise from the glacier on the north side may be possible when the rocks are in good condition. But numerous stones fell from the north precipice of Pika Peak during Mr. Earle's traverse of the rocks above the glacier, and any climber who desires to essay either peak from the north should bear that peril in mind.

Pika Peak and Peak Number Three might be treated appropriately as lesser summits of Mt. Ptarmigan; but we venture the suggestion that if the distinction of a separate name is to be conferred upon Pika Peak, Peak Number Three should be treated also as an independent mountain.

L. M. Earle, Lewis L. Delafield.

Ascents Of Mounts Deltaform And Douglas.

Corrigenda.

From several conversations which I had last summer (1911) with the well known Swiss guides, Kristian and Hans Kaufmann of Grindelwald, it seems certain that my assertion on page 59, Vol. II, No. 2, of this Journal, that our route of ascent of Mt. Deltaform was, as far as the S.E. arête, probably the same as Professor Parker and Dr. Eggers', requires to be revised. Part of our route was a new one; for, evidently, Professor Parker's party avoided the steep chimney at which we met with a slight accident, by making a traverse to the right a little below it, and then following the southern ? arête. Our route, I imagine, was steeper, but more direct. The Swiss Guides, above mentioned, who accompanied Professor Parker and Dr. Eggers, say that they observed this chimney, and one of them wished to try it. From the arête higher up, which consisted of a broad slope of screes, and where we stopped for refreshment, to the summit, the routes of both the party of 1903 and of 1909 appear to have been essentially identical. The supposition that there was less ice to cope with at the time of our ascent appears to be correct.

With regard to previous attempts on the S.E. tower of Mt. Douglas (see Vol. Ill, p. 40, A.C.C. Journal) Kristian Kaufmann informed me that he and his employer did little more than inspect the peak; the condition of the ice excluding any serious attempt to climb it. With a party of two persons, such an attempt would hardly have been successful.

Through the kindness of Mr. Jas. F. Porter, I am able to append an excellent photograph of the two peaks of Mt. Douglas, taken from Oyster Peak, which illustrates forcibly the contention that they ought to be regarded as distinct mountains.

J. W. A. Hickson.

Note.—The correctness of this contention hinges upon the definition of a mountain. The two so-called peaks of Mt. Douglas, though widely separated, are joined by an arête or col, and have undoubtedly, at one time, been part of the same distinctive mass.

It may be stated that the confusion of terms has now been done away with, owing to the fact that the Geographic Board of Canada has confirmed the names "Black Douglas" and "White Douglas," respectively, upon the north and south peaks.—Editor.

OFFICIAL SECTION.

Report Of The 1911 Camp.

The sixth Annual Camp was held at Sherbrooke Lake Meadows, in the main range of the Rocky Mountains, on the British Columbian side of the Divide from July 24th to August 4th, both dates inclusive.

The exact site had been selected by the Director of the Club, who with Mr. C. A. Richardson made an expedition into the district in the early part of the year, while the floor of the valley was still buried under many feet of snow; but a more suitable or charming spot it would have been difficult to find.

The tents for the accommodation of the large number of members attending were pitched beside a fringe of trees, at the head of a grassy hanging valley, just under a well timbered spur of Mount Niles, and enclosed between two branches of Sherbrooke Creek.

Sheltered on the west by Mount Ogden and on the east by the rugged parallel ridge which connects Mount Daly with Mount Bosworth, this charming little meadow lay open to the south, and afforded in that direction excellent views of the north tower of Mt. Victoria, Wiwaxy, Huber and Biddle Peaks, and the main mass of Cathedral Mountain. A good pony trail running northwesterly for three miles ("three" according to the Camp circular) from Hector station on the Canadian Pacific Railway, and past beautiful Sherbrooke Lake, gave easy access to the Camp.

Of course, all the old members arriving missed the cordial greeting and the warm hand grasp with which in former years they had been welcomed by Mr. Wheeler, who at considerable personal sacrifice, was at that very time conducting an important expedition under the auspices of the Alpine Club of Canada for the Provinces of Alberta and British Columbia, and the Grand Trunk Pacific Railway Co. into the Mount Robson country.

The picturesque and convenient grouping of the various official dining, tea, and living tents, and the well ordered camp, so familiar to the veterans—such a marvel to new members—had been secured by following a plan prepared in minute detail by the Director, who leaves nothing to chance when providing for the comfort and safety of the members coming annually into the mountains.

The work of Mr. C. A. Richardson, who had entire charge of making the Camp, was beyond all praise, and justified most fully the confidence placed in him by his chief.

Although saddle ponies were provided for those who cared to ride, the members, almost without exception, walked from Hector.

The transport service under the management of the genial Jimmy Simpson, could not have been better. There were no delays in bringing baggage, stores or mail. Ernest Brearly and John Wilson who assisted him were first class men, and from the way they went through their work, in the face sometimes of difficult conditions, it was evident that they had caught the infection of their chief's unfailing courtesy, good humour and resourcefulness.

other clubs represented.

The Alpine Club of England, the American Alpine Club, the Swiss Alpine Club, the Appalachian Mountain Club, the Mazamas and the Mountaineers were represented.

Guests.

The Club was honored in having for its official guests Mr. W. W. Foster, Deputy Minister of Public Works, representing the Province of British Columbia, and the Hon. Harrington Putnam,

Sherbrooke Lake Looking South. Photo, W.P. Major

Sherbrooke Lake Camp. Photo, C.B. Sissons

The Camp Fire Circle. Photo, P.L. Tait

Indian War Dance At Camp Fire. Photo, C.H. Mitchell

Sunday In Camp. Rev. Alex. Gordon Holds Service. Photo, C.H. Mitchell

a Justice of the Supreme Court of the State of New York, representing the American Alpine Club, of which he is President,

Camp Fire.

The 1911 Camp will long be remembered for the huge logs of dry wood, cut and rolled by willing hands from the adjacent forest to make the generous fires in the mellow light and comfort of which all that was in the members of cheerfulness and good comradeship when evening came found expression.

The committee charged with that work prepared a good programme for each night's entertainment, and the sing-songs went with a swing that was delightful.

True, we had no Miss Chevrier to charm us with Drummond's quaint Habitant poems, and only one of the Heavenly Twins was in attendance to lead off in the well known songs of former years, or to tell us the reason "We're here," if for a moment the music languished, but there was no lack of rollicking song and well told story.

Major Mitchell's German Band will surely be immortal, and who that saw it will forget the Ice Axe Brigade, drilled by Captain Longstaff.

Mr. Foster, Judge Putnam, Mr. Freeborn (who has crossed the continent to attend each A.G.C. Camp), Mr. Forde, Mr. Seaver and others who most kindly consented to take the chair on different evenings favoured us with most pleasing addresses upon mountaineering and kindred subjects, adding greatly to the interest of these very enjoyable occasions.

The Committee Of Management.

In the absence of the President and the Director, the responsibility for the direction of the affairs of the Camp was borne by a committee composed of J. D. Patterson (Chairman), S. H. Mitchell (Secy.-Treas.), Mrs. P. Burns, Miss Durham, Miss Vaux, J. P. Forde, the Revd. Alex. Gordon, F. W. Freeborn, F. V. Longstaff and D. N. McTavish.

Commissariat.

As in former years the management of the Commissariat was in the competent hands of Dr. Fred. C. Bell.

There was never a last loaf of bread. There was always another ham. He seemingly had but to deposit mysterious looking sacks, boxes and parcels in a certain place, make with the aforesaid hands signs understood alone by the one and only perfect Camp Chef, the smiling Jim Pong, and the thing was done. Bare tables suddenly groaned under the weight of the good things prepared for the "hungry hundred" who seemed never to tire of witnessing the thrice daily working of this magic.

The ever popular tea tent, in the regretted absence through continued illness of Mrs. Wheeler, was again had in charge by Mrs. Burns who, as Chief of the Ladies Executive, was ever thoughtful for the comfort of the Club members and guests.

Miss Durham ably filled the position of Assistant Hostess and Chairman of the Press Committee.

Report On Mountaineering.

The climbing was in charge of J. P. Forde whose statistical report follows immediately after this one. He pressed into most willing service, John Watt, the Revd. Alex. Gordon, A. R. Hart, L. C. Wilson, Dr. P. M. Campbell, Major C. H. Mitchell, Dr. Fred C. Bell, C. B. McClelland, C. B. Sissons, W. J. S. Walker, W. Pearce, and also Messrs. Freeborn, Hart, Seaver, Glisan and

McGregor, representing American Alpine and climbing clubs.

With their accustomed courtesy, Mr. Hayter Reed and Mr. Ussher of the Canadian Pacific Railway Co. placed at our disposal from their staff of professional Swiss Guides, Gotfried Feuz, Rudolph Aemmer and Fritz Bravand.

The official qualifying climbs were to be made either on Mount Daly (10,332 ft.) or on Pope's Peak (10,255 ft.).

Sixty-five members made their qualifying climb on Daly. One Graduating member only made a qualifying climb on Pope's Peak, and except upon two days the professional guide stationed at the Ross Lake Camp, from which this ascent was to be made, found the snow in a condition to render the climbing unsafe.

Although the peaks adjacent to the main camp did not by any means furnish first class climbing, the work on them was quite difficult enough for beginners, and it is doubtful if at any former camp so much climbing was done by the Graduating members, who were afforded every possible opportunity to acquire some really useful knowledge of mountaineering.

The Club spirit throughout was splendid, and perhaps nothing will serve better to illustrate this than to call attention to the fact that the experienced climbing members referred to above, including of course the representatives from the American Clubs, all of whom had come into the mountains for the purpose of undertaking some really serious work, abandoned the plans they had made as soon as they learned what a large number of Graduating members were in the Camp, and put themselves unreservedly at the disposal of Mr. Forde, to act under his orders in conjunction with the Swiss Guides in taking new members to the top of Daly, and afterwards up Niles, Ogden and on minor climbs and expeditions.

It had been hoped that the first ascent of Ogden might be made from Camp, but on June 30th, Messrs. J. A. Allan and F. J. Barlow, of the Dominion Geological survey attained the summit.

The Camp lay at no great distance from any of these mountains and the enthusiasm of the members new and old for climbing was unbounded. On one day no less than ninety-three set out upon various climbs and expeditions.

On another page will be found a list of those who made the qualifying climb > entitling them to Active membership in the Club.

Several small parties took advantage of the camp pitched at Ross Lake to spend a night there, returning to the main camp on the following day.

On the 2nd of August a large party, under the guidance of the Rev. Alex. Gordon, left camp for Field, by way of Niles Pass, the Yoho Glacier and through the Yoho Valley.

The Annual Meeting.

The Annual Meeting, as required under Clause 15 of the Constitution was held on the 1st day of August.

After the Reports of the President, the Director, and the Treasurer had been read and passed, the committee appointed to report on the votes on the amendments to the Constitution submitted that the amendments were carried by a large majority.

Mr. Patterson spoke with regret of the unavoidable absence of the President, his co-Vice-President, M. P. Bridgland and the Director. He congratulated the Club upon the steady progress it had made, upon the remarkable increase in its membership, then 650, and upon its sound financial position.

The utmost enthusiasm was in evidence when he referred to the splendid work Mr. Wheeler

as Director had done and was doing on behalf of the Club.

Messages of congratulation were sent to Sir William Whyte and President Falconer on the recent honours conferred on them by His Majesty.

Enthusiastic votes of thanks were passed to the Governments of Alberta and of British Columbia for their generous aid to the work of the Club, and to the Canadian Pacific Railway for its encouragement of the Club, by the granting of Convention Rates, the use of the Swiss Guides and other ways.

Committees were appointed to deal with the following subjects: Art, Geology, Botany, Equipment and Literature.

The meeting then adjourned.

Attendance.

One hundred and fifty-four people were placed under canvas, and the majority of them stayed for the life of the Camp. A synopsis of places represented by provinces, states and countries is here given:

In Canada.

British Columbia: Alberni, Chilliwack, Golden, Nanaimo, Revelstoke. Sidney, Vancouver, Victoria.
Alberta: Banff, Brant, Calgary, Carbon, Cowley, Evarts, Eyresmore, Fernie, High River, Lethbridge, Macleod, Nokomis, Okotoks.
Saskatchewan: Prince Albert, Regina.
Manitoba: Brandon, Winnipeg.
Ontario: Toronto, Woodstock.

The United States Of America.

California: Ocean Park.
Illinois: Galesburg.
Massachusetts: Boston.
New Jersey : Summit.
New York: Brooklyn, New York.
Ohio: Dayton.
Oregon: Portland.
Pennsylvania: Gladwyne, Glen Olden, Philadelphia.
Washington: Seattle, Spokane.

Overseas.

England: London, Bude.
Switzerland: Bern, Grindelwald, Interlaken, Zurich.

J. D. PATTERSON
Vice-President.

Jim Pong - Head Cook At The Club's Camps Since Their Inception In 1906.

Vice President Patterson Presides At The Annual Meeting. Photo, J.H. Chapman

Cheers For Vice President Patterson. Photo, J.H. Chapman

Report On Mountaineering.

The climbing at the Camp was in charge of Mr. J. P. Forde, all arrangements being made under the supervision of the Vice-President, Mr. J. D. Patterson and the care which he bestowed on this branch of the Camp work, in the midst of his many other duties, is indicated by the great success attained in giving members and guests attending the Camp such a pleasant series of climbs and expeditions, as well as attaining a record in the number of members graduated to Active Membership.

On account of the large number attending camp and making climbs and the fact that we were only able to secure the services of three of the Canadian Pacific Railway Company's Swiss guides many more calls than formerly were made on our own members to take charge of or assist on climbs, and the response to these calls invariably took the form of a hearty assent, regardless of the fact that such assent many times meant the upsetting of previously made plans, and their goodwill and assistance was very highly appreciated by the Chairman of the Climbing Committee, as well as by those who profited by their work.

The fact of so many of our members being considered competent to act in capacity of guide or leader shows in a most gratifying manner the progress we are making in the sport of mountain climbing, and the day is not far distant when we should be almost entirely independent of professional guides.

In addition to the loss of Mr. A. O. Wheeler from the Camp several others who had been prominent in climbing in former years were much missed, among these being Dr. T. G. Longstaff, E. O. Wheeler, M.P. Bridgland, P. D. McTavish and our own guide, Konrad Kain, but able assistance was given by Drs. Bell and Campbell, F. W. Freeborn, Rev. A. M. Gordon, J. P. Forde, A. R. Hart, B. Seaver, C. B. Sissons, J. Watt, W. W. Foster and others, as well as by our guests, Messrs. Glisan and McGregor, who responded most willingly when called upon to assist by taking charge of parties.

The official qualifying climbs were Mt. Daly, 10,332 feet, and Popes Peak, 10,255 feet. Mt. Daly proved to be in excellent condition and though not a difficult climb it presented much interesting rock and snow work. All of the 1911 Graduates, with one exception, made their climb on Mt. Daly. Popes Peak was found to be in very bad condition, and as the weather during the Camp tended to still further soften and loosen the snow on it was found to be impossible to make daily ascents of it, as had been originally intended. A few of our more experienced members were successful in reaching the summit, and one graduating member, Mr. Ingram, distinguished himself by making the only graduating climb on it during the season.

Sixty-six members graduated from the Camp as follows:

MOUNT DALY

July 23rd

C. C. Eyres
W. R. Dyer
J. L. Lynne

July 27th

H. B. Mitchell
Miss K. Sheaf

Snow Cornice On Mt. Daly. Photo, W.P. Major

Miss Robertson
H. E. Sampson
W. W. Foster
Miss Newton
W. J. Dobson
C. W. Gray
Miss Norrington
G. H. Walton
J. J. White
Mrs. J. J. White

July 28th

Mrs. C. H. Mitchell
Miss M. Kilmer
W. C. Chambers
Miss A. C. Laird
Miss E. Whittredge
Miss H. P. Higinbotham
W. Fraser
T. B. Moffat
Mrs. S. M. Wickett
S. M. Wickett
H. J. Ball
Miss E. B. Fowler
A. H. McCarthy
A. F. Greedy
R. W. Vine
R. J. C. Stead

July 29th

Miss E. McPhedran
Miss A. M. Mason
H. M. Whimster
Mrs. T. B. Moffat
Miss E. S. Patterson
P. L. Tait
Miss F. A. Knapp
Mrs. J. S. Hunt
Miss E. Sclater
Dr. McPhedran
Miss Eva Beck
Wm. Pearce
Howard W. Vernon
Miss A. E. Moffat
Miss F. S. McMillan

Miss M. E. Vaughan
Miss M. Clarke
Miss L. Titus
Miss B. S. Nasmyth

July 31st

Mrs. Nasmyth
W. S. Bates
E. M. Saunders
Miss De Bou
Mrs. R. Patterson
Miss K. Duff
Miss I. Greenwood
Miss A. Normart
Miss M. Whelen
Mrs. Major
W. P. Major
Miss A. Willson

Aug. 3rd

A. Van Aalst
Miss A. I. Sutherland
Miss M. Sills

POPES PEAK

July 31st

T. H. Ingram

ALSO QUALIFIED ON MOUNT DALY

July 27th

Miss B. B. Hume

Aug. 3rd

Mrs. K. W. Reikie

Only one graduating member failed to qualify, being advised against making the attempt by a physician.

Daily climbs of Mt. Niles, 9,742 feet, were made, and a large number of expeditions on Mt. Ogden and small peaks in the neighbourhood of the Camp added much to the enjoyment of those attending.

Expeditions.

In addition to the smaller expeditions mentioned above a number of more important ones were made. One of the most popular of these was along a route which followed Niles Creek to its source, and thence crossing the Niles Pass skirted Mt. Niles on the Waputik Icefield, and returned

to Camp by the Daly Pass and Daly Creek.

A three-day expedition was made by a party of twenty-one members, in charge of Rev. A. M. Gordon and C. B. Sissons, the route taken being over the Niles Pass and Waputik Icefield to the Yoho Valley, and thence to Field. In spite of somewhat damp weather during this expedition, all the members of the party enjoyed the trip exceedingly.

An expedition was made, immediately after the camp was broken up, from Castle Mountain, via the Vermilion Pass, Kootenay Valley and Sinclair Pass, to Windermere. This route is the one which will be followed by the new Banff-Windermere Motor Road, and is through a magnificent and practically unknown country. The members of this party were Mr. and Mrs. A. H. McCarthy, W. W. Foster and J. P. Forde, and as a result of the reports which they have made it has been decided to make arrangements to hold the 1912 Camp near the summit of the Vermilion Pass.

J. P. FORDE.

Report Of Librarian.

The growth of the Library this year has been somewhat smaller than usual, but as will be seen, books of value and interest have been added. Mrs. Parker presented "A Fisherman's Summer in Canada," by the well known angler, F. G. Aflalo. While not dealing with the mountain streams, it is a fine open-air book, and will be much enjoyed by many readers. Mr. A. C. Gait has given Croll's "Climate and Cosmology," a treatise on the Physical Theory of Secular changes of Climate. The chapters dealing with the continental ice sheets will be found of especial interest in this age of polar expeditions. Captain F. V. Longstaff has given the "Active Service Pocket Book," by Bertrand Stewart. Much of this is purely military, but a large portion dealing with camp arrangement, field sketching, map reading, and first aid notes is of the utmost value to the mountaineer. Mr. A. A. McCoubrey has presented the library with "Skiing for Beginners and Mountaineers," by W. R. Rickmers, and also with Claude Wilson's well known Handbook on Mountaineering. Our members are just beginning to appreciate the charm of skiing, and Rickmers' most practical book should be of great assistance. The Champlain Society has issued two volumes since the last report, "Hearne's Journey from Hudson's Bay to the Northern Ocean," and the second Volume of "Lescarbot's History of New France." The former is edited in the scholarly manner usual to this series by J. B. Tyrrell, with notes on the Natural History by Mr. E. A. Prebble of Washington. The second and middle volume of "New France" is translated by W. L. Grant, and comprises the voyages of Jacques Cartier, and of Messieurs de Monts and de Poutrincourt. From the Appalachian Mountain Club we have received a report of the Snow Shoe Section since 1882, and Mr. A. H. Bent of that Club has kindly sent his Bibliography of the White Mountains. From the American Alpine Club we have received a magnificently illustrated number of Americana Alpina, dealing with the Canadian Rockies. The letterpress is by our Honorary Member, Professor Fay, one of the first explorers of our mountain country, and is full of valuable information.

An invaluable topographical work has been added to the library shelves: "The Selkirk Mountains, A Guide for Pilgrims and Climbers." This book, by A. O. Wheeler and Elizabeth Parker, is filled with concentrated information of the utmost interest to the mountain lover, and includes maps and pictures illustrative of the Selkirk region. Mrs. A. O. Wheeler has presented a copy of Professor John Macoun's "Manitoba and the Great Northwest," published in 1882 and much sought after. The natural history portion is as important to-day as when it was written, and the description of the settlements are of much historical interest. Mr. Howard Palmer has sent a copy of his article "Notes on the Exploration and the Geography of the Northern Selkirks, which is

treated of in "Alpine Notes" on an earlier page of this issue of the Journal. Professor John Macoun, and Mr. J. M. Macoun, C.M.G., have given us their "Catalogue of Canadian Birds," a standard work of reference on the subject. Mr. Benj. S Seaver has presented "The New Garden of Canada," by F. A. Talbot, which tells of a journey by pack train and canoe along the route of the Grand Trunk Pacific Railway. He has also given us "Old Indian Trails of the Canadian Rockies," by Mrs. Chas. Schäffer, an Original Member of the Club, who has travelled much in the Canadian Rockies, and articles from whose pen have from time to time appeared in this Journal.

To the list of exchanges has been added the "Bulletin of the American Geographical Society of New York."

The following is the list of additions to the library since the 1911 Report:

Title and Author.	**Donor.**
A Fisherman's Summer in Canada. F. G. Aflalao.	Elizabeth Parker
Climate and Cosmology. James Croll	A. C. Gait
Active Service Pocket Book. Bertrand Stewart.	F. V. Longstaff
Skiing for Beginners and Mountaineers. W. R. Riekmers. ..	A. A. McCoubrey
Mountaineering. Claude Wilson.	A. A. McCoubrey
Hearne's Journey from Hudson's Bay to the Northern Ocean. Edit. J. B. Tyrell.....	Purchase
Leecarbot, History of New France. Edit. W. L. Grant and H. P. Biggar.	Purchase
Report of Snow-Shoe Section.....	Appalachian Club
Bibliography of the White Mountains. A. H. Bent. ….....	The Author
Alpina Americana, No. 2.	American Alpine Club
The Selkirk Mountains, a Guide for Mountain Pilgrims and Climbers. A. O. Wheeler and Elizabeth Parker ….....	The Authors
Manitoba and the Great North-West. John Macoun….....	Mrs. A. O. Wheeler
Notes on the Exploration and the Geography of the Northern Selkirks. Howard Palmer. ..... …….....	The Author
Catalogue of Canadian Birds. John and James M. Macoun ..	The Authors
The New Garden of Canada. F. A. Talbot.	Benj. S. Seaver
Old Indian Trails of the Canadian Rockies. Mary T. S. Schäffer.....	Benj. S. Seaver

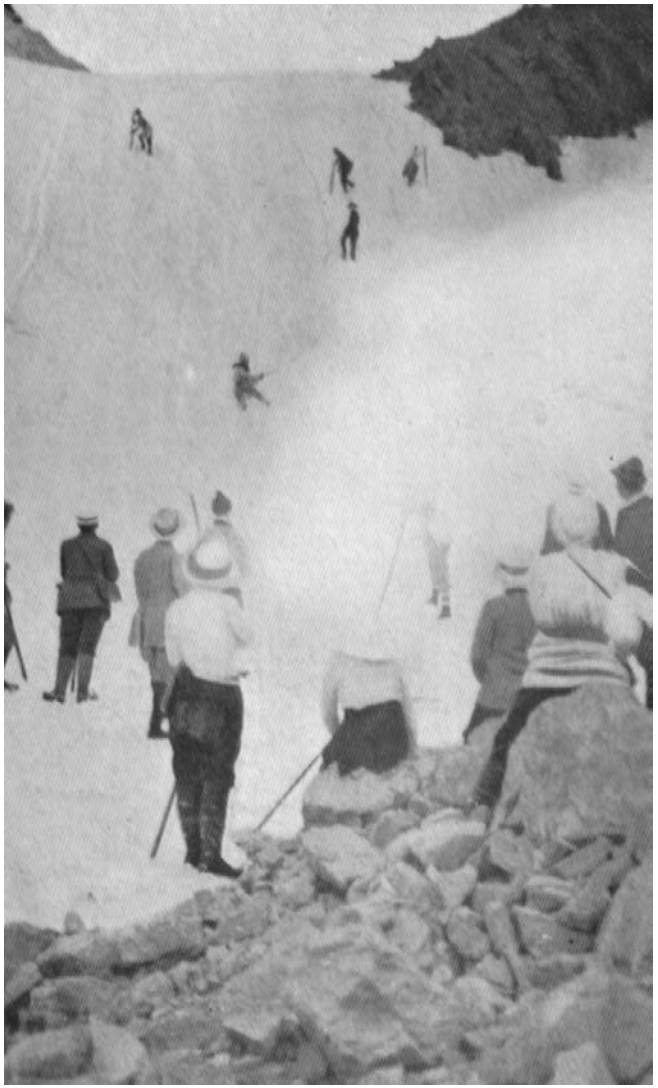
New Exchange

Bulletin of the American Geographical Society of New York.

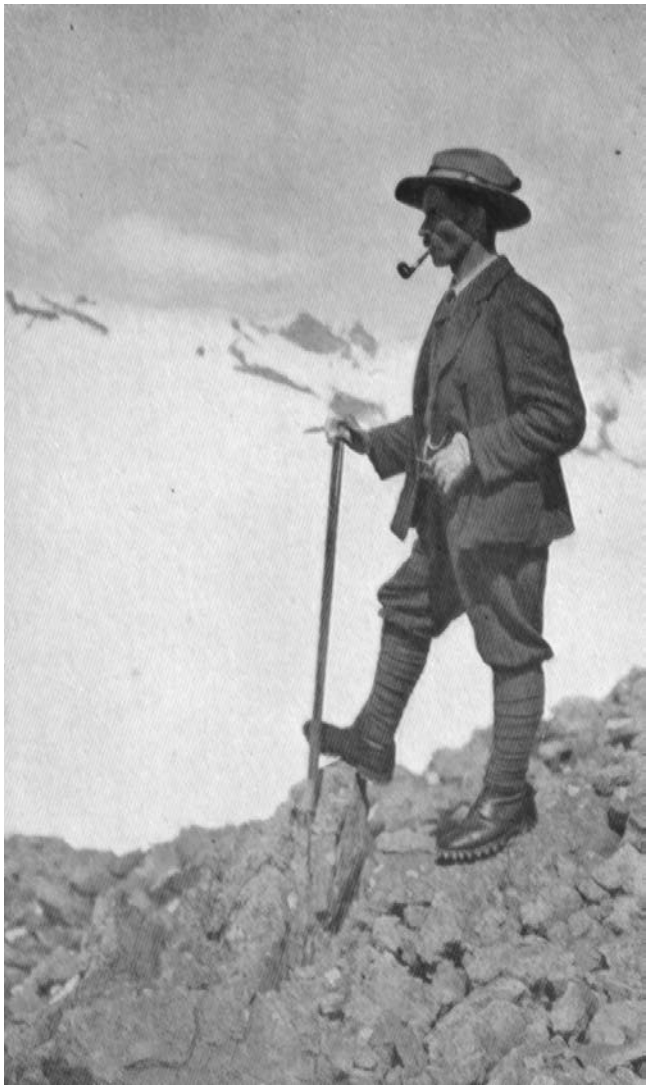
S. H. MITCHELL,
Librarian.

In The Niles Pass. Photo, P.L. Tait

Glissading At Niles Pass. Photo, J.H. Chapman



Glissading At Niles Pass. Photo, P.L. Tait



Gottfried. Photo, J.H. Chapman