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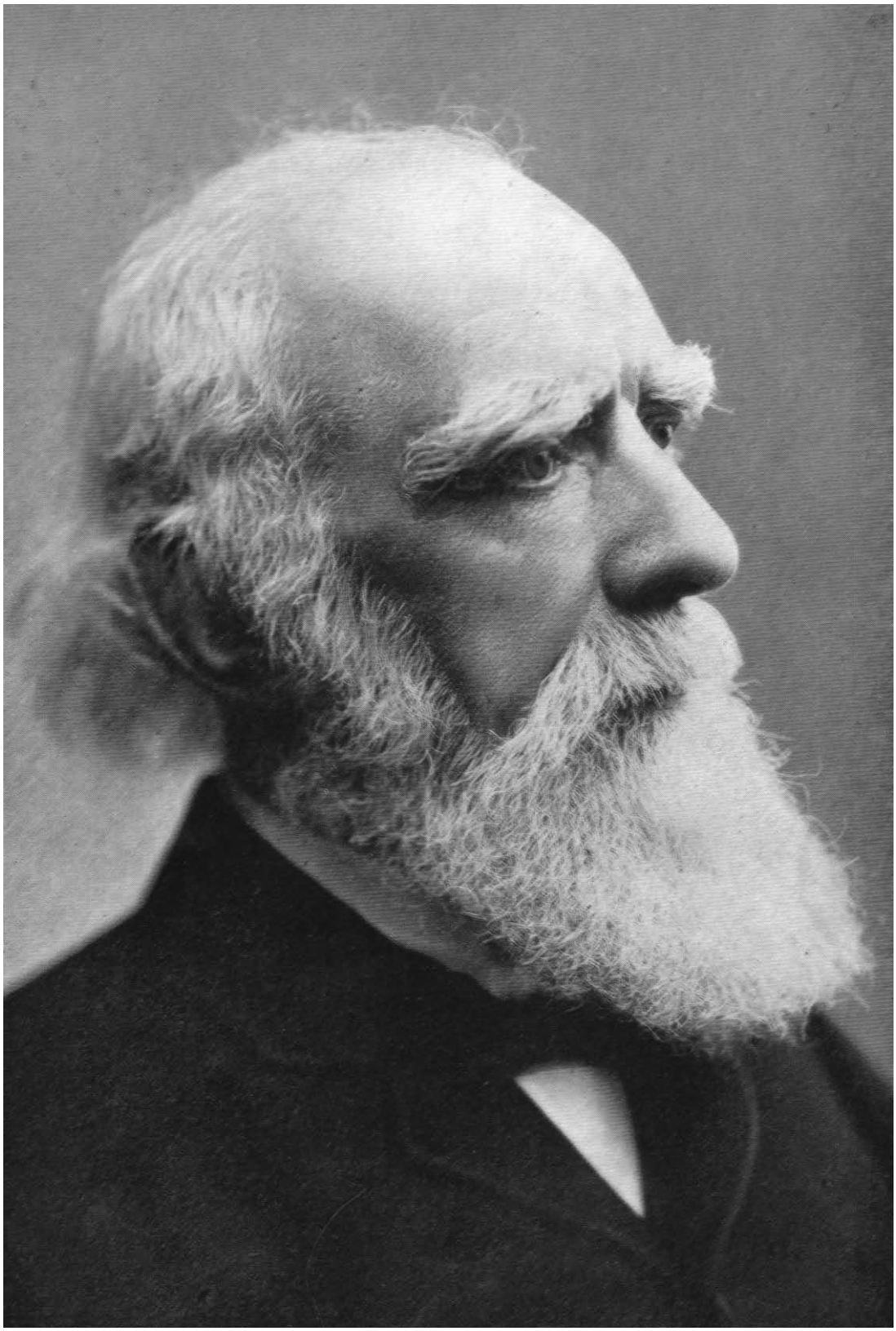

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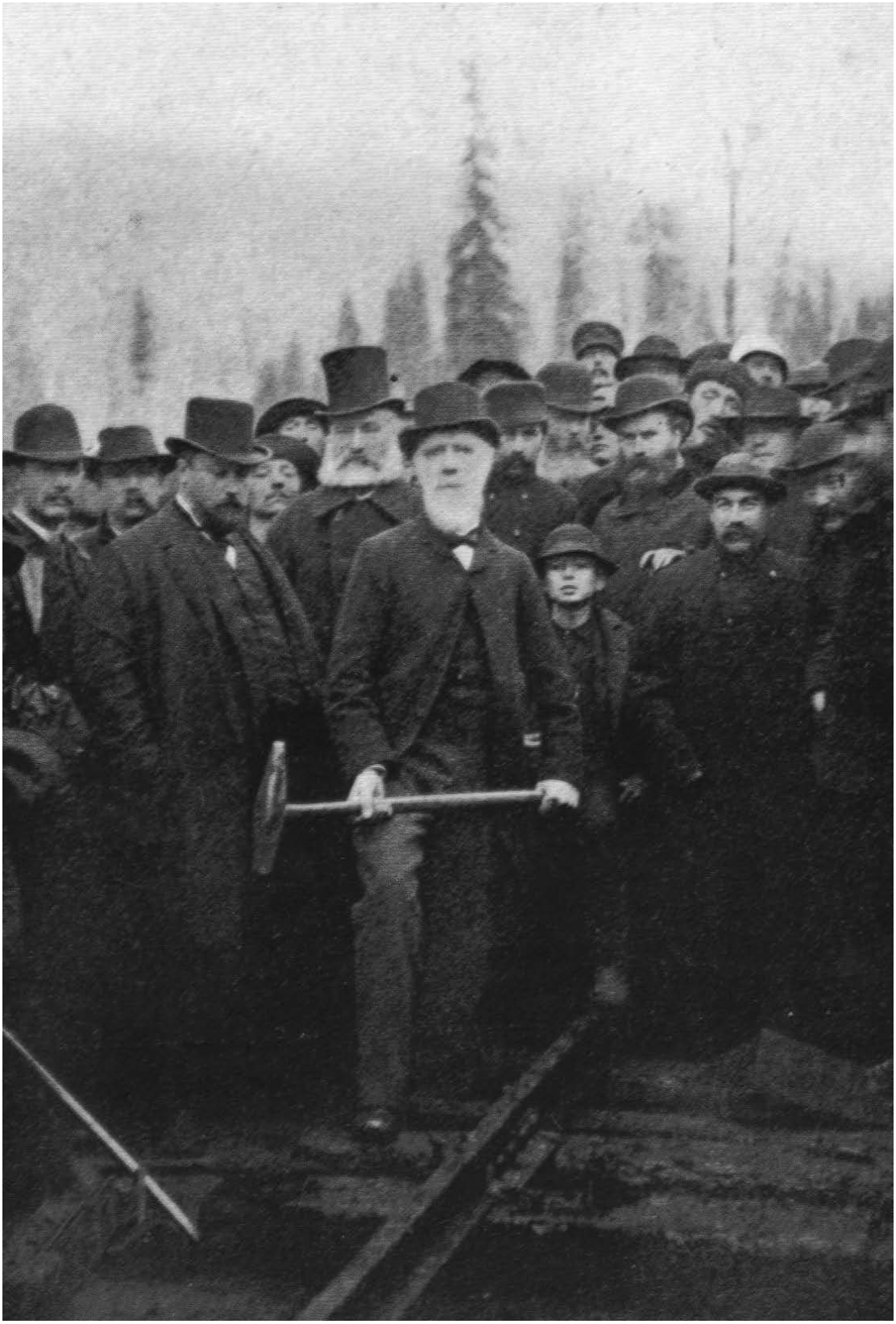

Sir Donald A. Smith Driving The Last Spike At Craigellachie

The Driving Of The Last Spike At Craigellachie.

Sir Sandford Fleming

in " Expeditions to the Pacific, etc." Vol. VII., Sec. II., 1&89, Proceedings of the Royal Society of Canada.

All that remained to finish the work was to drive home one spike.

"By common consent, the duty of performing the task was assigned to one of the four Directors present, the senior in years and influence, whose high character placed him in prominence—Sir Donald Alexander Smith. No one could on such an occasion more worthily represent the company or more appropriately give the finishing blows, which, in a national sense, were to complete the gigantic undertaking. (The other Directors present were Messrs. Van Home, Harris and the writer.)

"Sir Donald Smith braced himself to the task, and he wielded the by no means light spike hammer with as good a will as a professional tracklayer. The work was carried on in silence. Nothing was heard but the reverberation of the blows struck by him. It was no ordinary occasion, the scene was in every respect noteworthy, from the group which composed it and the circumstances which had brought together so many human beings in this spot in the heart of the mountain, until recently an untracked solitude. Most of the engineers with hundreds of workmen of all nationalities, who had been engaged in the mountains, were present. Everyone appeared to be deeply impressed by what was taking place. The central figure in the group was somewhat more than the representative of the railway company which had achieved the triumph he was consummating. His presence recalled memories of the Mackenzies and McTavishes the Stuarts and McGillivrays, the Frasers, Finlaysons, McLeods and McLaughlins and their contemporaries, who first penetrated the surrounding territory. From his youth he had been connected with the company which for so long had carried on its operations successfully from Labrador to the Pacific, and from California to Alaska. Today he was the chief representative of that vast organization which, before the close of the last century, had sent out pioneers to map out and occupy the unknown wilderness and which, as a trading association, is in the third century of its existence. All present were more or less affected by a formality which was the crowning effort of years of labour, intermingled with doubts and fears and oft renewed energy to overcome what at times appeared unsurmountable obstacles. Moreover, was it not the triumphal termination of numberless failures, the successful solution of the frequently repeated attempts of the British people, ever since America had been discovered, to find a new route to Asia? To what extent the thoughts of those present were turned to the past must, with that undemonstrative group, remain a secret with each individual person. This much may be said: to all, the scene was deeply impressive, and especially to the many hundreds of workmen, who, from an early hour up to the last moment, had struggled to do their part, and who were now mute lookers-on at the single individual actively engaged — at one who in his own person united the past with the present, the most prominent member of the ancient company of 'Adventurers of England', as he was representative of the great Canadian Pacific Railway Company.

"The blows on the spike were repeated until it was driven home. The silence, however, continued unbroken, and it must be said that a more solemn ceremony has been witnessed with less solemnity. It seemed as if the act now performed had worked a spell on all present. Each one appeared absorbed in his own reflections. The abstraction of mind, or silent emotion, or whatever it might be, was, however, of short duration. Suddenly a cheer spontaneously burst forth, and it was no ordinary cheer. The subdued enthusiasm, the pent-up feelings of men familiar with hard

work, now found vent. Cheer upon cheer followed as if it was difficult to satisfy the spirit which had been aroused. Such a scene is conceivable on the field of hard-fought battle at the moment when victory is assured.

"Not unfrequently some matter of fact remark forms the termination of the display of great emotion. As the shouts subsided and the exchange of congratulations were being given, a voice was heard, in the most prosaic tones, as of constant daily occurrence: 'All aboard for the Pacific.' The notice was quickly acted upon, and in a few minutes the train was in motion. It passed over the newly laid rail and amid renewed cheers sped on its way westward."

Kunchinjinga (28,176 Ft.) One Of The Highest Peaks Of The Himalaya.

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MOUNTAINEERING SECTION.

Some Characteristics Of Mountain Ranges.

By A. L. Mumm.

This article is the result of an attempt to compare and contrast the characteristics of the different mountain regions in which, at one time or another, I have climbed or tried to climb. It would never have occurred to my unaided intelligence to embark on such an enterprise, which is undoubtedly what is known colloquially as "a very large order," and if it has materialized into anything of interest to readers of this Journal, the credit is due to the fertile brain of the Director of The Alpine Club of Canada, with whom the idea originated. His suggestion launched me on a course of retrospection which was at any rate very interesting to me individually, all the more so as I had not the least idea where it was going to take me to; but I greatly fear that the leading conclusion at which I have arrived will appear to be a most lame and impotent one, for it is this: that the differences between one mountain region and another which give a distinctive colour to mountain travel, to climbing and to one's attitude towards the mountains themselves, are mainly to be found below the snow-line. I believe that any one who has learned familiarity with the upper regions, say, of the Alps, will feel himself relatively at home again, when he is landed on the glaciers and snow-fields of another range, however strange and novel the route by which he arrived there.

To this statement there is one exception, but it is a colossal one. for it is furnished by the Himalaya. There the mountains are built on a scale so stupendous that the magnitude of heights and distances is no longer merely a matter of degree, but transfers all mountaineering operations into an altogether new category. At the same time there comes into play that mysterious but undeniable entity, mountain sickness, or mountain lassitude, which, by whatever name one may choose to call it, makes every additional thousand feet of height, all climbing difficulties apart, a tremendous obstacle in itself. The immense effect of these two factors in combination is shown by the extreme slowness with which "the world's record for altitude" is being raised. A striking contrast is presented by the Alps, where Mont Blanc was the earliest of the great peaks to be climbed, and the Caucasus whose highest summit, Mount Elbruz, succumbed to the first Alpine party that ever climbed outside the Alps. For mountain sickness I have a respect born of painful experience, but I can only speak from hearsay of two other distinctive features which have to be reckoned with by climbers in the Himalaya—one, the appalling size and incalculable range of the avalanches, the other, the rapid and extreme changes which may occur in the character of snow slopes, owing to the tremendous power of the sun. The most striking illustration that ever came under my own observation of what the sun can do was supplied to me by Moritz Inderbinen, after a long day spent on a glacier covered with recent snow. I do not suppose that he had ever in his life before dreamed of the necessity of taking any precaution, on his own account, against sunburn, or had any reason to do so, but on this occasion he suffered a night of stinging discomfort, and I never

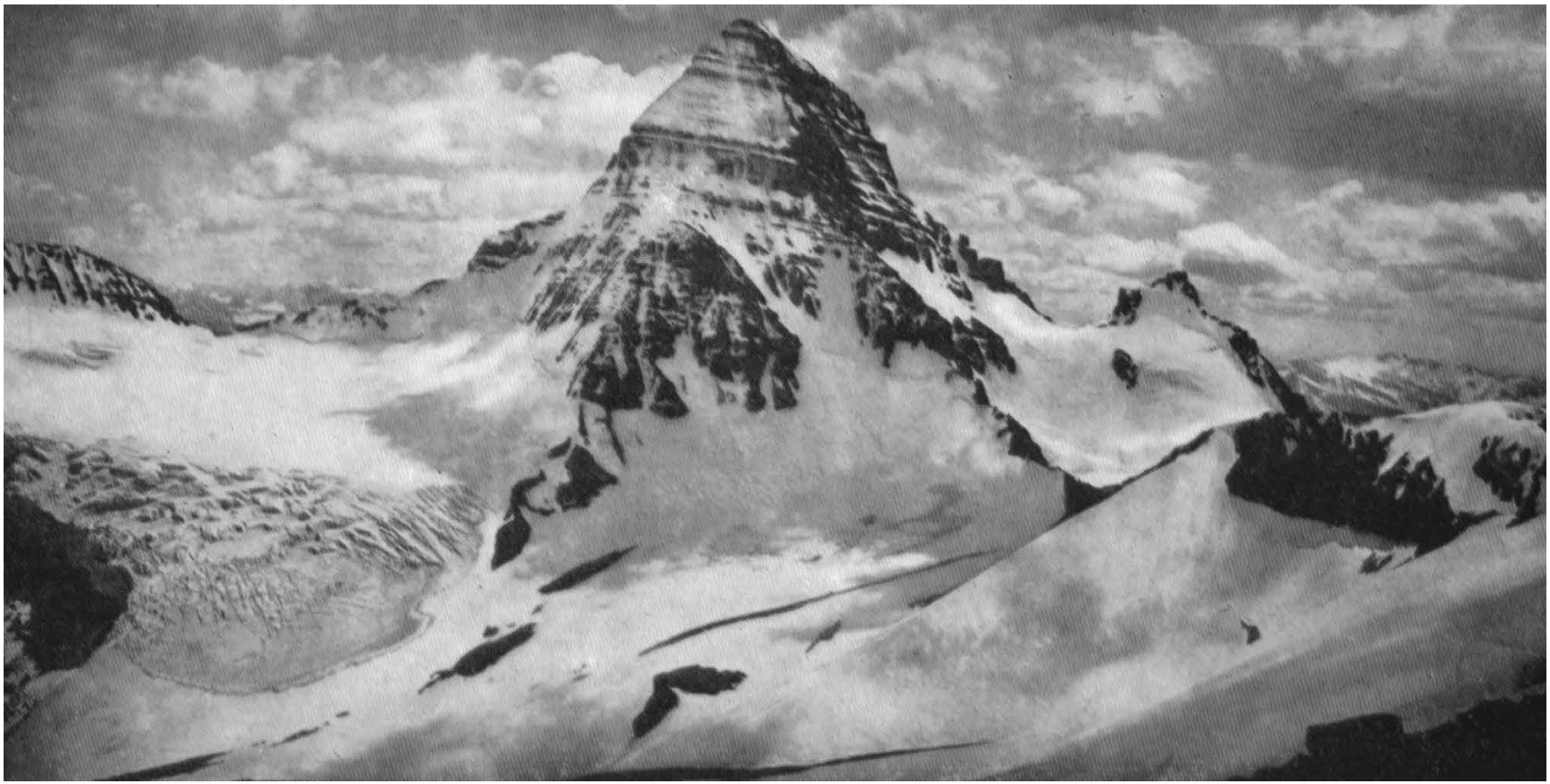
saw any one's face more completely skinned.

Descending now from the world of ice and snow, I have reached another broad, general conclusion, that in relation to mountaineering, by far the most important difference between one region and another is contributed by the presence or absence of man, and, where inhabitants are present, by the degree of civilization they have attained and the extent to which the country has been tamed by them; climate, vegetation and other matters of purely physical geography are relatively unimportant. But to this rule, too, there is one immensely important exception, that of the snow-line itself, on which depends whether and how far a range of mountains is Alpine in character at all. The snow-line is one of the first things I was led to consider closely by extending my travels beyond the Alps. Before visiting Ruwenzori I had seen pictures of it which seemed to show that it carried snow for two or three thousand feet, and I had read Sir Harry Johnston's estimate of it as reaching an altitude of fully 20,000 feet. Reasoning from what little I knew with regard to the snow-line in the Himalaya and elsewhere, I argued from its close proximity to the equator that he was probably right, and it was a great surprise to me, when we got there, to find that it was certainly snow clad down to below 15,000 feet. This is, of course, due to the enormous amount of moisture; snow and rain fall there on at least 300 days in the year, and it is only during two short periods—in January and about midsummer—that short spells of moderately fine weather are met with. In the Himalaya I encountered an even more striking illustration of the fact that the height of the snow-line is far indeed from being determined merely or mainly by latitude. There all the moisture comes from the south, and in consequence as one travels northwards through the chain, the snow-line, far from sinking, actually rises, and pretty rapidly, until on the ranges bordering on Tibet it reaches a height of somewhere about 20,000 feet. And the scenery, it may be observed, changes with equal rapidity for the worse. Perhaps the most wonderful scenery in the world is to be found where a great annual volume of moisture breaking on a range of lofty mountains produces at the same time and in close proximity luxuriant vegetation and snowfields and glaciers; the southern flanks of the Himalaya are, of course, the supreme example; in Ruwenzori the effect of the combination is intensified by the weird and fantastic character of the tropical growths. What I 'have spoken of as happening when one journeys through the Himalaya from south to north holds good, I imagine, in a less emphatic manner when one crosses Canada from west to east by the Canadian Pacific Railway, i.e. one finds a lower snow-line and denser vegetation in the Selkirks than in the main Rockies, and there seems to be a difference between the two slopes of the Rockies, if one may judge by the difficulties that have been encountered in cutting trails up some of the western valleys; but I am travelling outside my own sphere of observation here, and speak subject to correction.

To return to the difference between inhabited and uninhabited, civilized and uncivilized regions: this may seem at first sight to be a prosaic and unpromising topic, but that is so far from being the case that I find it difficult to approach it without becoming involved in a rambling and limitless discourse on mountaineering in general which, like Calverley's Cock and Bull story

"might Extend from here to Mesopotamy."

Indeed there is only one way to avoid this peril even partially and that is to be as autobiographical as I possibly can; acting on which principle I will begin with the Alps, which come at one end of the scale, practically in a class by themselves as the most civilized of the mountain regions of the world. At the time of my earliest visits to them, though some of the glamour of the heroic age of mountaineering still hung about them in the eyes of an enthusiastic young novice, that age was over, and "the Conquest of the Alps" at any rate of the great ranges of Switzerland, France and Italy was practically completed. All the first rate peaks, I think, with the solitary exception

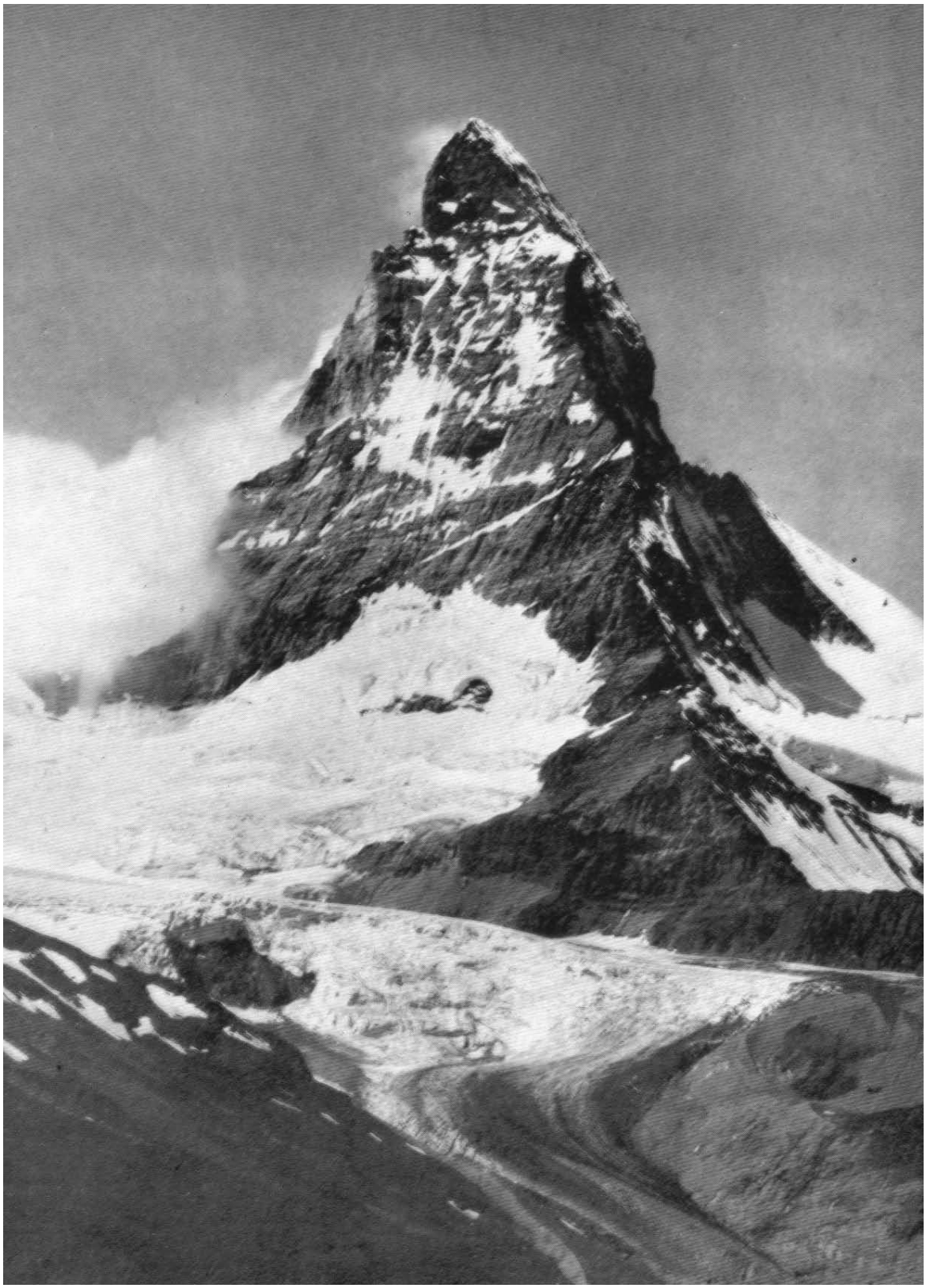


Mt. Assiniboine (11,870 Ft.) Canadian Rockies. Photo, Dr. Tom G. Longstaff

of the Meije in Dauphine, which held out for a few years longer, had been climbed, and—which is not less to the present purpose—had been very well and accurately mapped. To enlarge on the general consequences of this would be to write a chapter, or several chapters, of that history of mountaineering, which I am trying to steer clear of. But it may be said shortly that in the earliest phase of Alpine climbing there was involved a considerable element of exploration; climbing and exploring went hand in hand; new maps were made, and old ones were corrected and completed; new peaks were brought to light and non-existent ones were exposed as imposters and abolished; and to these results the humblest of mountain wanderers might contribute his quota as well as the great climbers. All this was now at an end. It was said at the time that the Alps were exhausted; this was very far indeed from being the case in respect to climbing, as the leading spirits among the next generation of climbers were abundantly showing. But it was in the main true in respect to exploration in the broader sense, and for ordinary, unaspiring mountain wanderers it must be admitted that a very attractive element in Alpine travel has disappeared.

The great advantage of Alpine travel over travel in wilder and less frequented regions is, of course, that it is possible to do so much more climbing in a given time. This point is so obvious that it is not necessary to labour it, but just because it is obvious it is easy to underestimate its importance, and to forget that in the case of the majority of those who spend their holiday in the Playground of Europe, that holiday is a comparatively short one. But closely connected with this is another advantage on which it is worth while to dwell a little longer, and that is the almost unlimited possibilities of inventing and carrying out High Level Routes. As the name suggests, the virtue and essence of a High Level Route is that you get from your starting point to your destination by a series of expeditions all or most of which take you above the snow-line. The High Level Route par excellence was that between Zermatt and Chamonix, and all readers of "Peaks, Passes and Glaciers" and the early numbers of the Alpine Journal know how largely it figured in what I have called the heroic age of mountaineering. It consisted of a succession of glacier passes; but nowadays, when every mountain in the Alps has at least two well known routes up it, there is no reason why a High Level Route should not include traverses of a number of peaks as well. My own earliest ambition, when I first visited Switzerland "on my own" was to accomplish the old classical High Level Route. I have carried out a good many others since then, and still regard this, exploration and novelty apart, as the most fascinating of all forms of mountaineering. And, of course, it can only be enjoyed in countries where food and shelter are obtainable at fairly short intervals. Exceptionally strenuous parties have occasionally cut themselves off from their base, and accomplished High Level Routes in wild and uninhabited regions, but such undertakings are tours de force in which all considerations of comfort and pleasure must be vigorously put on one side.

From what has been said, it follows that the quality and severity of the climbs on a High Level Route can be varied indefinitely, according to the tastes and ambitions of those making it, but parties thus engaged do not often attempt untried routes or indulge in expeditions of superlative difficulty. Sensational climbing feats are not what they are aiming at, and these have generally been achieved where it has been possible to study the conditions at home beforehand, and where the stages leading up to the actual climb have been rendered smooth and easy. Here again one is tempted to generalize and to say that the standard of difficulty in climbing tends to rise in proportion as the surrounding conditions are easy and unexacting; at least one may safely say that the Alps, where this holds goods to a far greater extent than anywhere else in the world, supply far the most effective school to those capable of it for attaining the highest degree of mountaineering



The Matterhorn (14,780 Ft.) Swiss And Italian Alps

skill.

When one is fairly started on the Alps, the difficulty is to know where to stop. Of Ruwenzori, the first snowy range that I visited outside the Alps, there is not much to be said in connection with mountaineering. It is a very small, isolated range, some sixty or seventy miles in length, and the area under ice and snow extends over only twelve or fifteen miles; the most remarkable feature about it, as mentioned above, is that there is any permanent ice and snow there at all. But my visit was of absorbing interest to me; partly because I cherished the hope—which was not fulfilled—of accomplishing some exploratory mountaineering; partly because it was my first introduction to uncivilized travel. It was not mountain travel, for the most part, but ordinary African travel with an outfit carried on the heads of some seventy native porters. After getting to the foothills, we left them and the bulk of our belongings and travelled light, with a new set of mountainmen, to our highest camp, which was within an easy walk of the regions of ice and snow. It was only three days' marching, but these three marches taught us many things; amongst others, that it may easily be more difficult to get to your mountain, than to get up it. Not that the going was desperately bad all the way, but there was one bit, which I then regarded as far the worst that I had ever encountered, a beautiful blend of what I had not yet learned to think of as windfall and muskeg. The porters were carrying fairly light loads, but even so the way they tackled the slippery tree trunks filled me with admiration. They were good sportsmen, most anxious to do all they could to make our visit to their mountain a successful one. I shall never forget their behaviour on our return from our one expedition into the ice-regions. It was a very little expedition, a short, steep climb up the rocks by the snout of the Mobuku Glacier, and then a gentle ascent through some easily negotiated crevasses to the edge of a snowy plateau where the mist came down on us and everything was blotted out. We came, we saw (rather imperfectly), and we did not conquer. It was just enough to enable me a few years later to claim that I had climbed above the snow-line in four continents, a boast which remarkably few persons are in a position to make. We were away less than two hours all told, and when we regained the rocks there were our porters gazing upwards open mouthed watching our descent with the deepest interest. When we reached the foot of the rocks, the headman shook us warmly by the hand and the others all salaamed profoundly.

We started on the back-trail the next day. Our enquiries as to the weather elicited replies which, after filtering through two interpreters, were surprisingly precise and definite: there was no chance of good weather then; only two short periods of even moderately decent weather ever occurred from year's end to year's end, one in January-February (it was then November), the other about midsummer. The accuracy of this was completely confirmed by the two parties which followed us during the next eight months. The second of these, that of the Duke of the Abruzzi, explored, climbed and mapped the whole range in the course of three or four weeks.

So much for Ruwenzori. I can console myself now with the reflection that if I had not gone there, I should in all probability never have gone to the Himalaya either, nor to the Rockies, and, in fact, should not now be writing this article.

Of Himalayan climbing it is difficult to know what to say. That portion of the main chain of the Himalaya which I visited simply bristles with magnificent peaks, most of which are probably difficult, even when judged by Alpine standards, and without taking into account the special features already referred to. Whether as time goes on even a small proportion of them will ever be climbed, who can attempt to guess?

Transport in the Himalaya is mainly carried on, as in Africa, by native porters. I travelled under the leadership of an old hand at the game, and everything worked smoothly, but a novice,

The Jungfrau (13,670 Ft.) Swiss Alps

especially until he had picked up some Hindustani, might easily have difficulties with them. They seem to vary considerably in different sections of the chain, and recent travellers in Sikkim have been extraordinarily successful in inspiring the local porters there with some of their own keenness, and getting a great deal of good work out of them. Porters have one thing in their favour; they can go where horses can not, while the converse is rarely true; in fact, the only case I can imagine would be that of a river deep enough to stop porters, but which loaded horses could walk across. But they have their limitations and cannot go for many days without being able to replenish their own stores of food; in other words one cannot go far with them in uninhabited country.

The vast extent of still uninhabited country in the Canadian Rockies puts them, from the point of view of mountain travel, into a class by themselves. It is the contrast between the old world and the new. No doubt there will be changes in this respect in the very near future affecting a considerable area, but at present the Canadian climber, unless he can command the services of a pack-train, is as much tied to the railway as was Lord Methuen's army in the South African war.

It is unnecessary in the pages of this Journal to dilate on the joys and exasperations of travelling with a pack-train. I only need to draw attention in passing to the way in which the figure of the cayuse dominates the scene in all literature of Canadian mountaineering. I have more qualms about shirking what would really be in place here, a comparison between mountaineering in the Alps and mountaineering in the Rockies. The leading differences have already been suggested in what has been said of the Alps, but some other aspects of the matter remain to be dealt with. Well, my reason for omitting them is that all I should have tried inadequately to say, has been delightfully said already by Dr. A. P. Coleman in his recent book. I cannot better take leave of the whole subject than by expressing my admiration for that volume, one of the most charming ever written on mountain travel.

Conquering Mt. McKinley.

The Parker-Browne Expedition Of 1912.

By Herschel C. Parker.

The last expedition was made not only with the object of climbing Mt. McKinley, but also to complete the work of exploration carried out by the expedition of 1910, and to cross the Alaskan Range at the nearest practicable point to the great mountain.

The party consisted of four men: Belmore H. Browne, Arthur M. Aten, Merl La Voy, and the writer.

From our previous experience in this region we knew that to carry out our plans and transport our supplies and equipment of some 2,000 pounds, four hundred miles from the coast to the base of the mountain, it would be necessary to cross the country while it was snow covered and make use of dogs and sledges.

Mr. Browne and I left Seward on the Alaskan coast February 2nd; although our two companions, Aten and La Voy, had been hard at work for a month before this time advancing our supplies toward the mountain. On February 18th, with two dog teams of five dogs each and four small sleds heavily loaded, we left Susitna Station, the last point of civilization, and started up the Susitna River. This we followed for seventy miles to the Chulitna and continued on this river and its western branch for nearly one hundred miles further until we reached the foot of a system of great glaciers absolutely unmapped, and knew that we must find a crossing of the Alaskan Range at

Mt. McKinley The Highest Mountain In North America Altitude 20,300 Feet. Photo, M. Lavoy

this point. Climbing the steep ice-foot, the supplies were slowly relayed over the rough surface of the glacier, while Mr. Browne prospected a route ahead and finally discovered a possible crossing of the divide at an altitude of 6,300 feet. After some exciting adventures, our outfit was safely got down the almost impossible slopes to the next series of glaciers and here we found that the range must again be crossed at another point before the northern side could be reached.

This last crossing, however, was only some 5,000 feet in altitude and less difficult than the first one. At last, early in April, we came out on the Muldrow Glacier, about twenty miles northeast of Mt. McKinley, and at almost the exact point we should have reached according to our observations. This work required fifteen days above timber line, using alcohol for fuel 'and pemmican for food. We had traversed and mapped two new glacial systems of some forty miles in extent.

The weather during March and the first part of April had been exceedingly bad, many severe storms and high winds, with a snow fall of about six feet. On the northern side of the range, however, the smaller precipitation and severe winds had left the ground for long distances completely bare of snow, and we had great difficulty in working our way along the side of the Muldrow Glacier, before we reached the ice of the McKinley Fork of the Kantishna River. Crossing from here a low range of caribou hills we reached our base camp about ten miles from Mt. McKinley, and at an altitude of 2,500 feet, on the 24th of April.

Mr. Browne, after several exploring trips, located a pass across the mountains to the McKinley branch of the Muldrow Glacier, which swept upward to an altitude of 11,000 feet, between the northeast ridge and the north ridge of Mt. McKinley, and offered a most promising route to the upper slopes of the mountain. This pass Mr. Browne called "Glacier Pass."

On the 29th of April we commenced our attack on the mountain, taking one of the dog teams in order "to advance our supplies as far as possible up the glacier and determine the final route of ascent. We followed the McKinley Glacier to an altitude of 10,500 feet, near the cliffs of Mt. McKinley, where we left a sled with about 300 pounds of mountain food and equipment, and returned to base camp after an absence of some eight days. The weather during nearly the whole trip had been very bad and the temperature ;had fallen to nearly ten degrees below zero at our highest camp. We decided after our return to wait several weeks for warmer weather and in the hope of better conditions. With the exception of a single week, however, the weather continued cloudy and stormy until June 5th, when we once more left base camp, crossed "Glacier Pass," and arrived at the foot of the first sérac that night. The following morning we found a heavy snow storm raging and had to give up all idea of further climbing that day. Mr. Aten had accompanied us with a dog team thus far, but started immediately after breakfast for base camp, where he remained during our absence on the mountain to look after the dogs and read the barometer. On the 6th and 7th of June we were storm bound in our little fountain tent, and when the weather cleared on the 8th, were compelled to wait for the great mass of new snow to settle. About two feet of snow had fallen during the storm, and as our route above the séracs took us directly under the cliffs of the northeast ridge, the danger from avalanches was great.

On the 10th of June we once more started up the séracs, and since we were carrying heavy back packs, and on account of the soft snow, found the work more difficult than on the previous trip. In fact, we were compelled to use snowshoes most of the time to an altitude of nearly 12,000 feet. Of course, while travelling we were continually roped together, but, so treacherous were the crevasses, covered by the new snow, that it was necessary while on the glacier to sound ahead with the ice axe nearly every step of the way. Mr. Browne usually led and it was due to his great caution

A Camp Crossing The Alaskan Range. Photo, Parker-Brown. Copyright 1912

and good judgment that the trip was made in safety. On one occasion when La Voy was in the lead he fell nearly twenty feet into a crevasse, fortunately landing on a ledge of ice which checked his further progress. We learned from this incident that two men on snowshoes, even with 100 feet of rope, are not sufficient to hold the weight of a falling companion when he makes a vertical descent into a crevasse. At an altitude of 9,000 feet we reached what we termed "The Great Séracs," and were forced to climb over the debris of avalanches directly beneath the great cliffs of the northeast ridge with immense masses of snow and ice ready to fall at any moment.

On June 13th we reached our sled and luckily discovered a small portion of it projecting from the snow. Here we recovered a large supply of food and fuel and also caribou and mountain sheep skins, which added greatly to the comfort of our fur sleeping bags when placed between them and the ice. We had now reached a considerable plateau at the head of the glacier, which at an altitude of about 11,000 feet ended at the great cliffs of Mt. McKinley. On June 14th we packed our outfit to the base of the northeast ridge. Just above us the ridge was broken by a low col, and above that it rose with great steepness to an altitude of 15,000 feet, where it terminated in a snowy shoulder and fine rocky buttress.

During June 15th and 16th severe storms kept us in our tent at the foot of the ridge and some two feet more of snow added to our difficulties.

On June 17th we relayed all our belongings to the top of the col at an altitude of 11,800 feet, and made this our climbing base during our attack on Mt. McKinley. Mr. Browne and La Voy dug far into the snow ridge and set the tent back so that it was well protected from any gale. An inspection of the supplies showed sufficient rations for practically a month.

It required some five days of the most arduous and dangerous work to relay our supplies up the ridge to an altitude of 15,000 feet. The snow was soft and sometimes over ice. It was a question of making steps or platforms for nearly the entire distance and we found it necessary to make an intermediate camp on the ridge at 13,600 feet. On the 24th June we had transported, besides our camp equipment, sufficient food and fuel to last for about ten days, and were ready to continue our advance the following day from the 15,000 feet camp. During the night, however, a fierce snow storm descended upon us, and while we lay in camp next day the avalanches roared down the cliffs beneath us.

At this camp we were just below the edge of the great basin between Mt. McKinley's two peaks, and it only required an easy "traverse" under the cliffs of the northeast ridge to enter the basin. For some time past we had been troubled, more or less, to relish or digest the pemmican which constituted the bulk of our food supplies, but from this camp on, until we left the mountain, we were compelled practically to abandon its use altogether and subsist chiefly on crackers, raisins and tea.

June 26th dawned clear and that day we moved our camp to the centre of the "Big Basin" at an altitude of 16,000 feet, and at the foot of a sérac about 800 feet high which descended from a higher level of the basin above us. We could see on its northern end, however, good slopes of avalanche snow that promised an easy route to the top. The temperature inside of our tent at 8.30 p.m. was five degrees below zero, and next morning a minimum thermometer we had left out during the night indicated nineteen degrees below zero.

On June 27th we advanced our camp to an altitude of approximately 17,000 feet on a plateau directly beneath the northeast ridge, and only a short distance from the cliffs of the north peak. We became thoroughly chilled while making this camp, although the thermometer that night only indicated eight degrees below zero, but our vitality had been considerably reduced due to the

Camp At The Foot Of The Great Seracs (Mt. McKinley). Photo, Parker-Brown. Copyright 1912

altitude and lack of nourishing food.

June 28th we rested and reorganized. The wind blew hard during the day and we devoted our time to preparing for the final climb. I boiled a hypsometer to check our aneroids. The clouds were below us and a clear sunset gave promise of a good climbing day.

On the morning of June 29th, at 6.20, we started for the summit in fine, clear weather. Our course was directly up the side of the northeast ridge. Most of the way the grade was steep and we were forced to traverse and cut steps. We reached the top of the ridge in about two hours and a half at an altitude of approximately 18,000 feet. This placed our climbing at about 400 feet an hour. The altitude and our insufficient diet were partly responsible for our slow progress. The views looking down from the summit of the ridge were magnificent, and beneath us, to the southeast, we could observe the great mass of rugged mountains through which we forced our way on the 1910 expedition.

As we made our way upward along the ridge we noticed that we were somewhat short of breath, but the altitude seemed to have no other direct effect upon us except to greatly reduce our powers of resisting the cold. At about 19,000 feet we got a fine near view of the summit. While climbing the ridge the southern sky had darkened and the wind increased in violence. Ahead of us rose a small snow dome some 300 feet in altitude, and, climbing this with comparative ease, we reached the foot of the final summit. Here the snow commenced to fall, and from this point upward every landmark was obliterated by the ever increasing blizzard. The slope was steep and required constant and careful step cutting.

After perhaps nearly two hours of desperate climbing in the storm above an altitude of 19,500 feet, we came out on the crest of the ridge and met the full force of the gale. We were, possibly, at an altitude of from 20,000 to 20,200 feet; but we knew that on the summit were several ridges of snow that rose to a slightly greater elevation. We were in a dangerous position, chilled by the gale, blinded by the snow, and our steps beneath us almost obliterated. After a brief consultation, we decided that it was out of the question to go on, so with the greatest reluctance made our way as rapidly as possible down the summit, out of the storm, and back to camp.

It may be well here to quote from a recent magazine article by Mr. Browne: “I should like at this time to correct the statement that the peak of Mt. McKinley rose 300 feet above us. If the summit of Mt. McKinley had ended in a peak we should have climbed it, as our only difficulty was our inability to see clearly where to go and how to get back. The summit of Mt. McKinley is a long, horseshoe-shaped ridge. On a clear day it would require at least an hour to explore this ridge and make the necessary observations.

“While we were climbing straight up from the narrow northeastern arête all was well, but on reaching the edge of the flat summit it was impossible for us to find our way to the low rise in the ridge through the clouds of blizzard driven snow.

“The hummock that formed the highest portion of the summit ridge was only a short distance away and reaching it under good weather conditions would have required no more labour than one encounters in walking along a city street. Our danger was the intense cold and the difficulty of correctly retracing our steps through the storm. But the dome on which we stood was the summit of Mt. McKinley.”

The following day was clear, but we were in no condition to climb, however, for it was necessary to rest in order to regain our strength and also dry our outer clothing which had become more or less coated with ice during the storm.

On the first of July we left camp about 3.30 a.m., and again climbed to an altitude of about

Avalanche On N.E. Ridge Mt. McKinley. Photo, M. Lavoy. Copyright 1912

19,300 feet; but a high wind rose and the clouds gathered in a most threatening manner. After a considerable wait for better weather conditions, the cold once more compelled us to return to camp. We then held an inventory, and finding that we only had about three days' food, since our pemmican was useless, decided to return to base camp with all possible speed. We left our high camp that afternoon and descended to our camp at 15,000 feet. The following day we reached the "Col Camp" at 11,800 feet, and after reorganizing made our way to a camp among the crevasses at the head of the "Big Séracs." Next morning we descended to the foot of the séracs, where we were held all day by fog and snow.

Leaving here at 8.30 p.m. we had a terrible journey over the crevasses covered by the most treacherous of snow bridges, in the dim night light, and threatened by avalanches from the cliffs above. Finally we emerged upon the water-covered glacier at the foot of the first séracs, and making our way across this, arrived at "Glacier Pass" at three a.m. on July 4th. I think I can scarcely close this brief account better than with another quotation from a previous article by Mr. Browne.

"I will never forget the joy we felt at having earth and rock beneath our feet. It was the first time in twenty-eight days that our feet had rested on anything but snow and ice. On the 4th of July we staggered down the snow-filled pass on our way to base camp. La Voy and I were carrying packs of over eighty pounds, and in our weakened condition we made rough weather of it. But the joy of smelling green grass and flowers, and resting our aching eyes on the green mountain pastures repaid us for all our work. Where the snow melted into crystal streams, we entered the green lowlands and a herd of fifty caribou welcomed us to their country. The sun was going down in a sea of crimson when we neared our base camp. As we stumbled on, overcome with excitement, I kept wondering if Aten was safe, for much can happen in twenty-eight wilderness days.

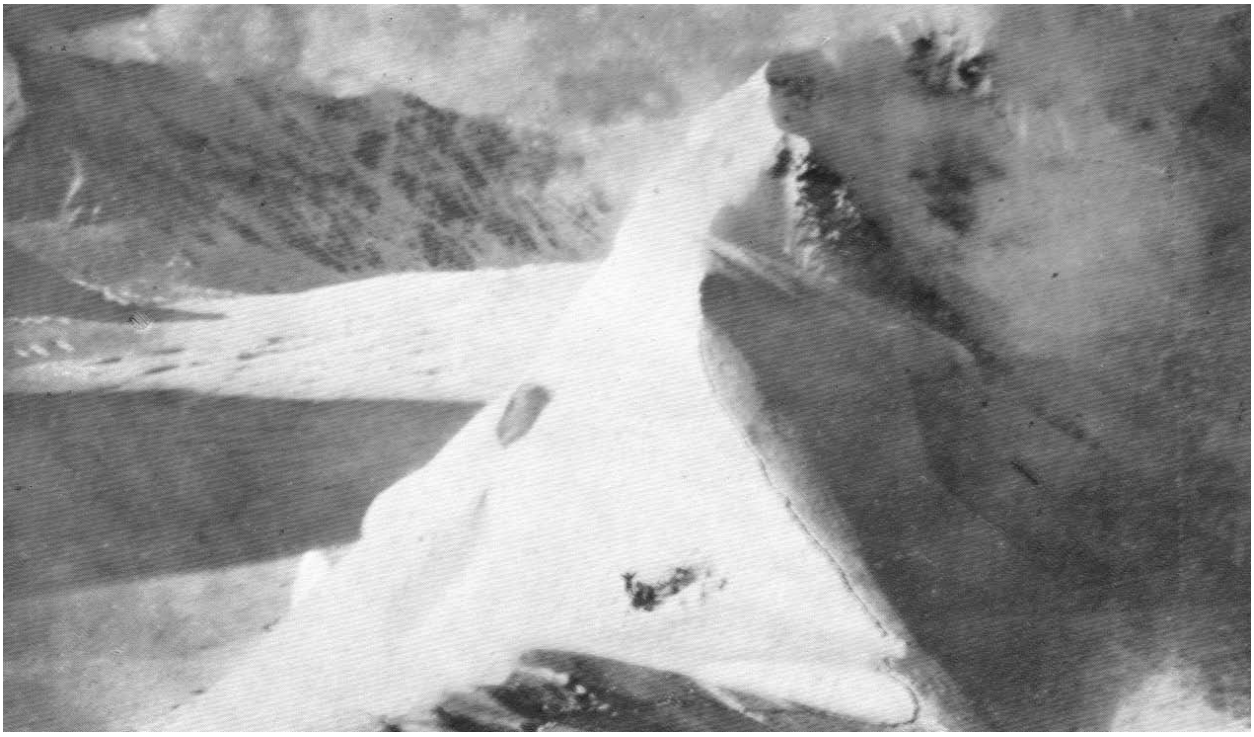
"Above our camp on a round hill stood a large rock that overlooked the surrounding country, and as we strained our eyes ahead, we saw a figure against the sky, then a smaller shape—a dog, appeared, and our yells echoed down the valley. We were a happy crew that night!

"For several days we ate and rested, enjoying to the full the beauties of our wilderness home. But as the tender caribou meat brought back our strength we began to long for the trail again, and on a sunny morning we sadly bade good-bye to our old camp, and turned our faces northward—toward the Yukon."

SPECIAL NOTE FOR THE CAJ DIGITAL EDITION

An oversized fold-out map showing illustrating the Parker-Browne expeditions to Mt. McKinley was included in the hardcopy version of the 1913 Canadian Alpine Journal.

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



“Col Camp” On N.E. Ridge, 11,800 Feet, Mt. McKinley. Photo, Parker-Brown. Copyright 1912

“15,000-Feet, Camp” On N.E. Ridge, Mt. McKinley. Photo, Parker-Brown. Copyright 1912

The Mountains Of Lake Chilko

By Malcolm Goddard.

In the summer of 1911 a few glimpses of the mountains inland from the head of Bute Inlet had whetted my appetite for that region. This was further augmented by the presence of a wonderful lake fifty miles long in their very midst, said to be the most beautiful lake in British Columbia. Very few white men have ever seen the lake, and then only from the north end, so with what information I was able to obtain from the Provincial Mineralogist and the Chief Geologist at Ottawa, I decided to see Lake Chilko for myself.

Lake Chilko lies about one hundred and ninety miles due north of Vancouver and sixty miles due east from the end of Bute Inlet. From this point it extends northward for fifty miles whence it flows by the Chilko River and the Chilcotin to the Fraser. Winding in and out among ice-hung peaks, comparable to those of the Rockies or the Selkirks, it extends at the north end to lower rounded mountains, typical mountain sheep country, and by the river out on to the rolling Fraser plateau which, due to its covering of coarse boulders and scanty soil, is timbered with nothing but miserable jack pine.

At first glimpse at the map one would be led to suppose that the easiest means of access was from the coast, but a closer acquaintance with the well nigh inaccessible country inland from salt water shows that the long way round by the Cariboo and the Chilcotin is by far the best. Indians cross a pass from Chilko Lake and come to Bute Inlet down the Southgate River in three days, but from what I have seen of both ends of this route it would not be a pleasure trip for a white man. The Southgate could be ascended, I think, twenty miles in a fast power boat, but the interminable down timber and "sticks" make travel with even a light pack quite irksome. The Homathko River can be ascended about thirty miles, but the overland journey would be hard, and would leave one marooned on the lake shore unless one of the four canoes were there to meet him.

Leaving the C.P.R. at Ashcroft on the Thompson River I took the old Cariboo Trail to 150 Mile House where a stage was obtained to Norman Lee's on the Chilcotin. The Cariboo Trail, the oldest road in British Columbia, is wonderful for the ease with which one can penetrate the wilderness rolling up and down the glaciated plateau after the first twenty miles through sage brush hills and among deep alkali lakes. Leaving the 150 Mile House the hills are higher along the Fraser, after which a long stretch of boulder-covered plateau extends to the eastward boundary of the Coast Range. Three excellent river terraces are to be seen where the road crosses at Chimney Creek.

At Norman Lee's I obtained a pack outfit and a Siwash companion, and soon left all roads, journeying up the Chilko River a hundred miles to the lake. Interesting cliffs of columnar basalt were passed, and here and there in the box canyons the lava flows and beds of ash were quite distinct relics of the former extensive volcanic activity of this region. As we approached the lake the rugged snow-clad peaks appeared, giving promise of the good things to come. These were very welcome sights after the interminable narrow trail through the jack pine, a bad mess of which was encountered after crossing the Chilko River on the way to Tsuniah Lake. Here we camped at the lower end without having seen the big lake although twice we were within two miles of it.

At the volunteered information from the Siwash that there were "much pish here," I unlimbered the four and a half ounces of split bamboo to investigate; and such fishing!

They had evidently never seen a fly before from the avidity with which they attacked the professor and gray hackle. We very soon had all the rainbow trout we could use, averaging a half

to three-quarter pounds a piece. There are quantities of large fish in the lake and streams, five and six-pounders, of a variety very closely resembling our eastern brook trout as to markings and red spots; the flesh is light colored. The Indians in Nemiah Valley presented me with several of these, which I enjoyed very much, while they ate my bacon and beans. The procuring of the fish by the natives is a simple matter. A basket net-work is set in a creek and a splashing cayuse drives the fish into it, where they are literally scooped out. Trolling is resorted to somewhat in the chain of lakes in the upper Nemiah Valley, as well as fishing through holes in the roe in winter. Salmon also run up the river into the lake and are speared at the outlet.

The trail to Nemiah Valley ascends a thousand feet over a spur and from here I obtained my first glimpse of Chilko Lake. It was worth waiting for. Spread out to the southward was a narrow lake the colour of Lake Geneva with jagged, forbidding, black, ice-hung peaks, rising out of the water five to six thousand feet, some with arêtes that would shame Deltaform. A bend in the lake cut off the view to the end, but the amount of snow and ice was far greater there. We pushed on to Nemiah Valley and camped on the shore of the lake preparatory to our water journey to the south end. Across, the mountains around Tatlayoco Lake loomed up against the sunset with their ragged outline.

At the north end the lake narrows to the outlet, flowing smoothly between high rounded hills until finally the current quickens where the river is about two hundred yards wide. Here we forded, swimming the animals a few yards. Soon the river narrows and begins its tumultuous race through the chutes and box canyons by which it crosses the plateau to the Chilcotin. Twenty miles up the lake the width is, I should say, about eight miles, gradually narrowing as it extends southward where the promontories or mountain spurs are quite pronounced, causing many deep sheltered bays. The shores heavily clad with jack pine or bare sticks slope gradually to the mountains, dotted here and there with small yellowish-green, shallow lakes. The rocks change from black shales as seen along the Nemiah Valley to coarse granite where, along the southern part of the lake, the shores are precipitous the glacier-worn shelves affording scant footing for the hardy five-needled, fox-tail pine (Pinus balfouriana), which is the principal tree here. The cottonwood occurs occasionally along the streams, and its light green was a mighty acceptable sight on the trail where water holes were three or four hours apart. A few are to be found around the lake but are not large. I searched carefully without finding one a sufficient size for a canoe and then realized why there were only four canoes on the lake.

Here in Nemiah Valley, as well as along the Chilko River, the bunch grass grew most luxuriantly. In fact it was the finest I had ever seen, apparently untouched but for some Indian cayuses and a very few cattle. These were owned by the dozen or so Siwashes who live in the Valley. Log houses were few and owned by the Chief and one or two prosperous Indians who fish in summer at Bella Coola, a week by trail to the north. Trapping, hunting and fishing, with a little hay cutting, form the only occupations I could observe among these people, who speak no English.

On June 28th we loaded our meagre outfit into a crazy dug-out and started for the south end, making good progress to a sheltered cove on the east shore well down the lake at the base of C 1. Passing point after point we noticed groups of cream coloured mountain goats on the cliffs. They paid no particular attention to us and we did not molest them. Four hours paddling brought us to an attractive cove with a good beach and lots of wood—just the spot for a short halt. Here my Siwash boy lost no time in producing hot tea, bread and venison, having as usual built the fire where there was most wood regardless of jeopardy to the landscape. It was delightful to loaf and

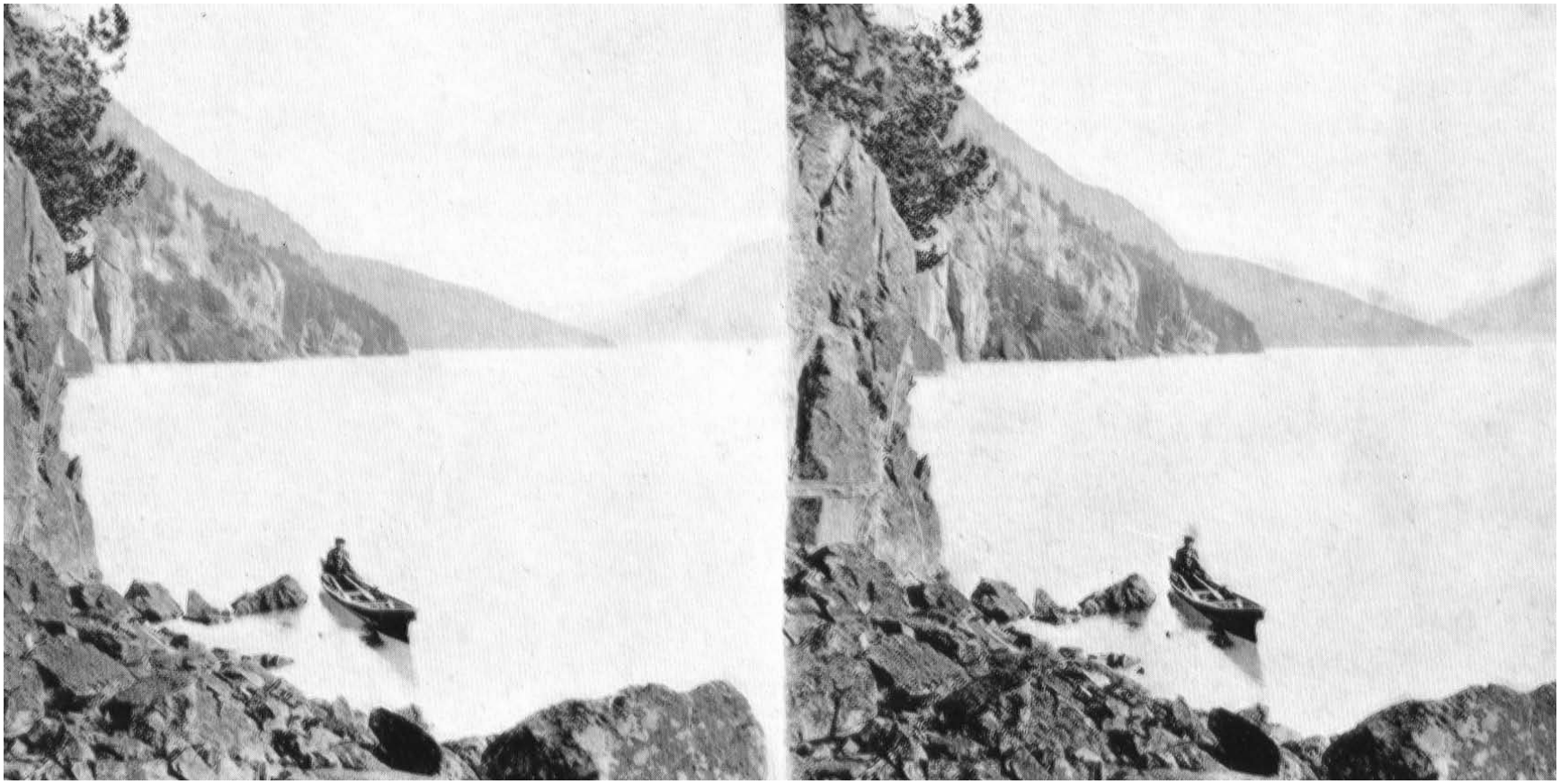
smoke with the clear green bay in front of us and the untroubled waters extending across the lake to the large arm which reaches westward. The sheer mountains along this branch and the amount of ice to be seen at the end certainly would instill a wholesome respect for the white man who took twenty horses over the crevassed glacier of the pass and down the Southgate River. It must have been considerable of a feat, although at this time twenty years ago there was a trail which has long since been obliterated.

We proceeded leisurely to the base of a sharp rock tower, probably Mt. Aiut on the mining sketch map, and camped in a sheltered cove. Kese volunteered: "I tink mebbe to-night she rain," so we spread the handful of paraffined gingham as a lean to, and just as well. The comfortable feeling of a warm eiderdown in spite of the rain gave way to resentment at the weather as time was precious.

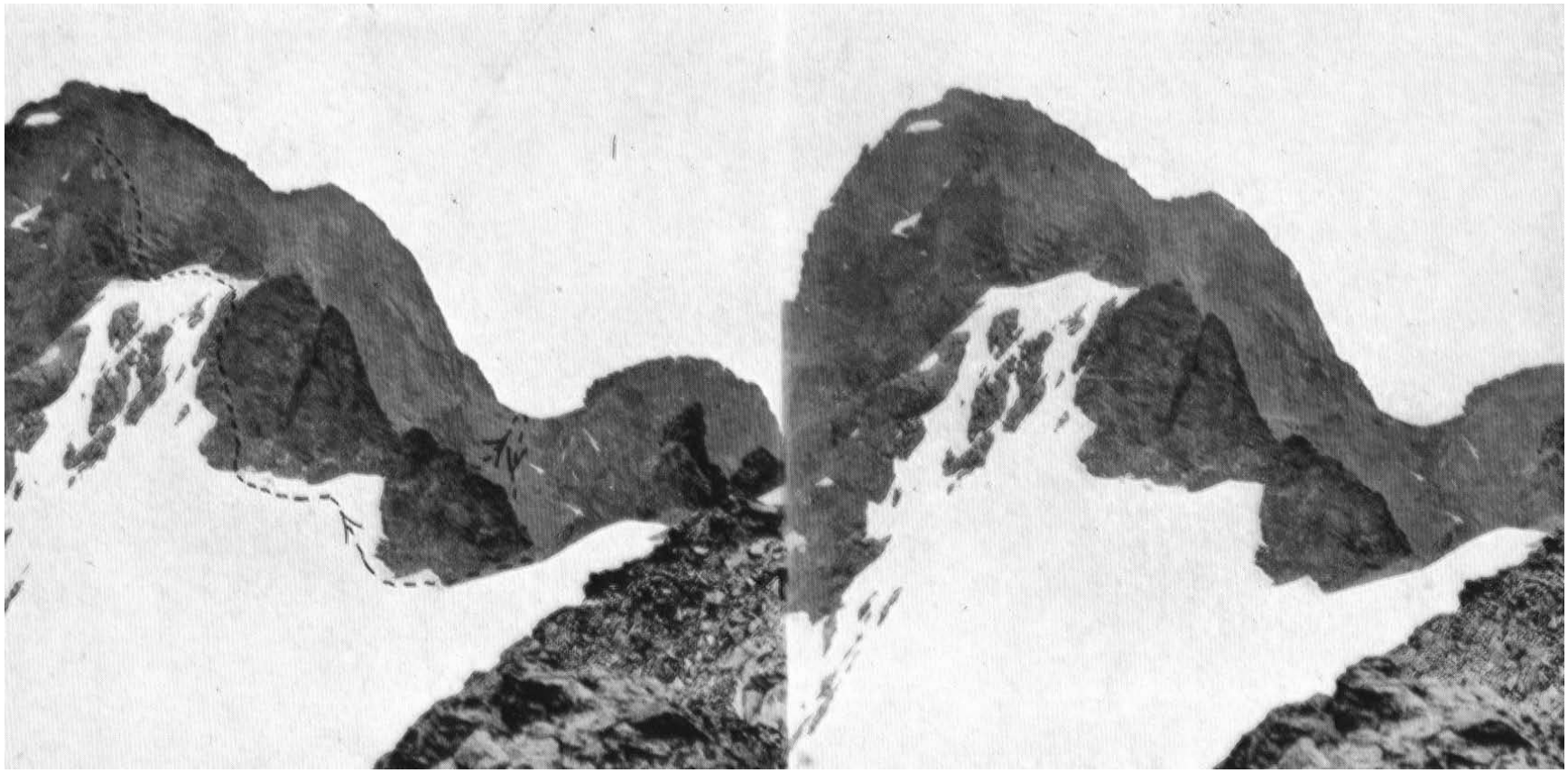
Mountain goats were abundant; in fact there was seldom a day when we did not see a few and always did we find them in the mountains. Had we not had plenty of venison we could easily have obtained goats of any age. The rounded bare hills around the north end of the lake afford ample opportunity for obtaining mountain sheep. These are not molested by white hunters and very rarely by the Indians, but are very wary and must be carefully stalked. Judging from hides I saw in camp they are Ovis Stonei. Large deer are everywhere abundant in the valleys and it is but the work of a few minutes to obtain meat for camp. I shot three, averaging one hundred and fifty pounds, keeping us in fresh meat, but did no other hunting. On the Alpine meadows and the plateau along the Chilko River, ptarmigan were plentiful but at the time had chicks, or I certainly should have eaten a good many. The lakes of the valley harboured some geese and numbers of ducks, a few of which I obtained with pistol or rifle.

Finally it stopped raining, so we set out at 6.10 for the first virgin peak. One disagreeable feature of climbing in the Cascades is the inevitable two hours of dense woods, which are muggy and mosquito ridden. It is climbing all the way, as the mountains rise sharply from the very water's edge, without the compensation of view or breeze. A half hour's cutting in a snow couloir brought us to A, from which an Alpine meadow extended to the immediate base of C 1. Crossing this and mounting the west arête we came upon three goats, which I photographed at fifty yards, but they would not remain for closer acquaintance. Here the fun began and I put my Siwash boy to the first test at the lower end of an eighty foot rope. After negotiating quite a bit of steep arête from which the walls fell away very steeply we found ourselves cut off by a notch beyond which rose a sheer wall of smooth green schist. This necessitated a descent and traverse to the south face of the tower, whence we gained the summit at 12.45.

A wonderful view extended in all directions of sharp ice-hung peaks and valleys, every one of which was filled to overflowing with a green glacier. To the southeast a large piedmont glacier, flowing N.80°W., was noted, fed by numerous laterals from the south. The lake extended for miles to the north and south like a broad sheet of turquoise, ruffled here and there by squalls. To the south and west the mountains are higher with summits more fantastically shaped of black or dark green schist. A very pleasant hour and a half was spent photographing, triangulating and eating, not to mention boiling the thermometer at 198°F. This peak is a tower, sheer on all but the south where we had ascended a steep chimney. A round, dark green lake nestles on the north side high up, and below, a string of lakes, seven or more, extend down to the headwaters of the Whitewater River and the Lillooet hunting grounds. The descent was accomplished without any difficulty, the rock being excellent and firm, a very pleasant change from the Rockies. Kese busied himself shooting at ground hogs on the Alpine meadow with poor success while I was triangulating from A and B.



Near South End Of Chilko Lake (Stereoscopic View). Photo, Malcolm Goddard



Peak C - Mountan Goats On Snow In Foreground (Stereoscopic View). Photo, Malcolm Goddard

These marmots are numerous on the Alpine meadows at about six thousand feet and on all the terminal moraines.

Choosing calm weather we finally reached the south end of the lake and camped on the round bay where the lake spreads out like a bulb. This is a wonderful spot with the mountains towering on all sides and the silence unbroken save by the cascade from the Chilko Glacier and the occasional weird cry of a loon—two hundred and thirty miles from a telephone!

Two rivers flow from east and west, not from the south as on the older map. That from the east emerges from a large glacier about twelve miles from the lake, the boy told me, flowing, as do all streams of the region, through an almost impenetrable growth of jack pine interspersed with devil's club and alder thickets. The western river rises southwest of Mt. Chilko, and is fed along its way by small glacial streams, adding to its heavy load of silt.

This region is dominated by the peak immediately beyond the end of the lake and upon this we bent our energies. Leaving camp at 6.30 we paddled across the bay and entered upon the arduous two hours of sticks which brought us to the snout of the Y-shaped glacier flowing northward from the peak. We took a direct route for the peak ascending the maze of crevasses and séracs to the central arête which we ascended to the summit. I had studied the route and expected difficulties in but one place. They appeared to a slight degree, however, in three places where the rock was very steep and about ninety per cent of it loose. The north side of the arête is bad, as the granite is just in the position of rest and it required but a touch to send four or five blocks a cubic yard in size, crashing to the glacier below and starting miniature avalanches. The summit was reached at 2.30, where I made observations for my map and took some photographs while Kese made a cairn in which rests a brass Alpine Club tube. The hypsometer boiled at 196.4 F. 8392 feet.

The country to the east, south and west is one mass of snow and ice with here and there a peak thrusting itself through the mantle higher than the others. No wonder it is entirely unexplored. It takes a mountain climber used to ice to even cross the passes. There are some particularly good peaks to the south and east. These would be difficult but are almost inaccessible in a limited time.

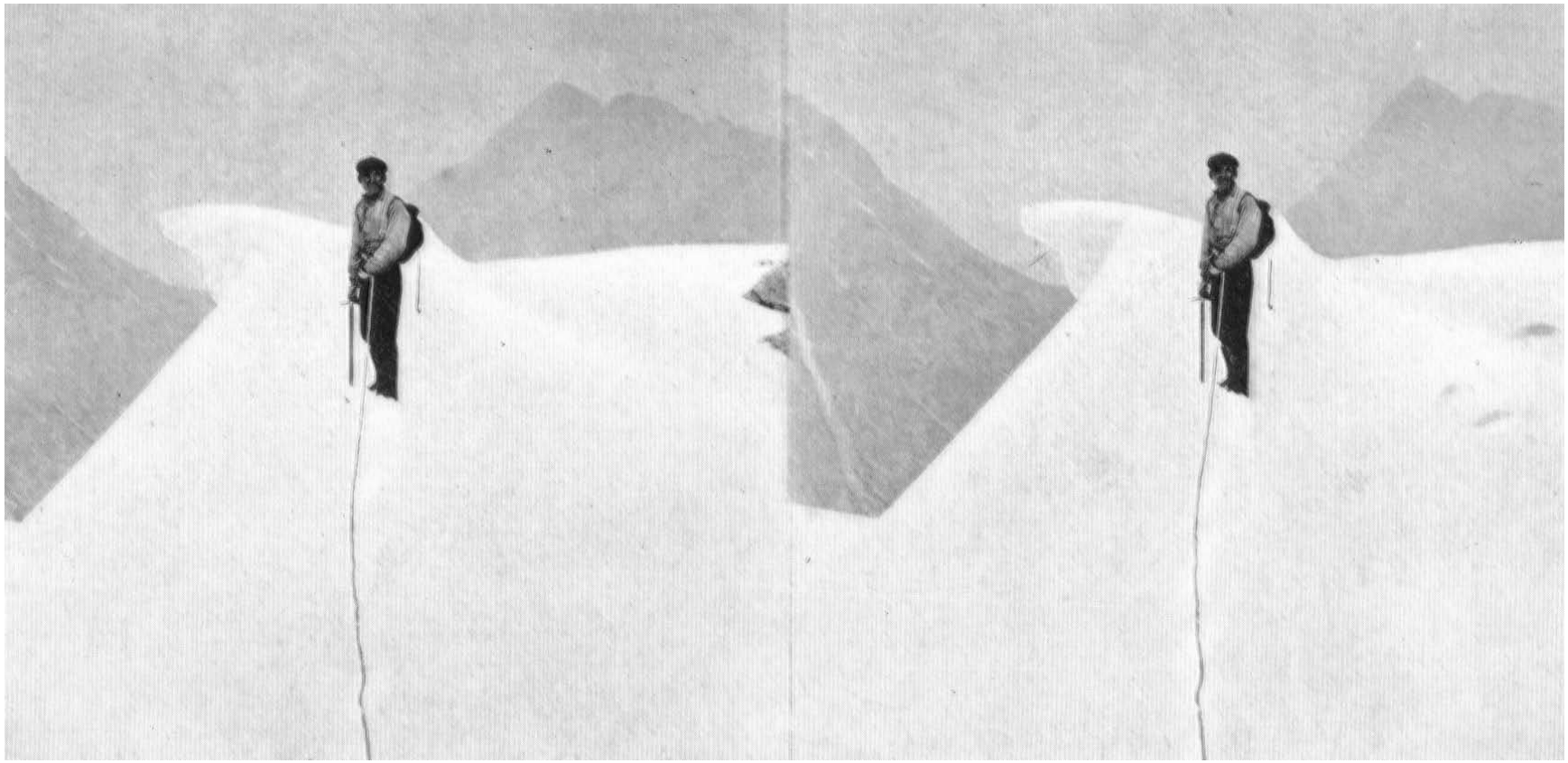
The descent was made by the southeast arête, thus making a traverse and completely circumnavigating the southeast leg of the Y-shaped glacier. The névé was terribly tempting as it spread out smoothly to the ice-fall by which we had ascended, but it was badly crevassed and covered with fresh snow, not a good place for two men only.

The Siwash couldn't understand why I avoided the smooth white névé, at various times pointing across it as if that were the best trail. Once, to show him, I had him lead, telling him to feel ahead with his axe. It was not long before he almost lost it through a thin bridge. After that he understood and spoke of it as "too much big hole."

The Alpine meadows at about the timber line are quite attractive with their profusion of red and white heather and yellow flowers. There is considerable low-bushed lupine as well as the old familiar paint brush which appears in only the salmon pink, not having the varieties of magentas and purples found in the Rockies. The yellow lilies are also wanting, but the crimson columbine and mallow are common in the woods.

The majority of the peaks to the west, south and east are rounded on their summits indicating a complete denudation of the schistose greenstones from the granite batholite which forms the core of this range. "These triassic greenstones exhibit two sets of cleavage planes forming usually large blocks with knife-like edges, the second set of planes occuring nearly at right angles to the first." On C 1, a large reddish-brown streak appears on the west side of the peak indicating the presence

North Branch Of Chilko Glacier (Stereoscopic View). Photo, Malcolm Goddard



Snow Arete On Chilko Peak (Stereoscopic View). Photo, Malcolm Goddard

of iron. This may have had some effect upon the needle, which in readings from 13 seems to have too great a declination to the east.

Most of the peaks west of the north half of the lake in the sedimentary rock have more character as a whole, although they are not so high as a few around the southern part. The contact between the triassic sedimentary rock and the granite is quite marked in some places. Where these blocks remain in place the peaks weather to very forbidding summits. The bases of the mountains have had the ledges worn off by glaciation to give the same "roche moutonnée» effect seen in the salt water inlets to the west.

After mapping the lower end we moved up the west shore and camped in a bay at the base of Mt. Merriam, a black brute with an ice-filled cirque on the east side, the best peak on the lake. To this we now laid siege and cursed the weather. Time was spent reading, mapping and exploring the much neglected Indian trail along the river which flows from a large glacier southwest of Mt. Merriam. It was along this river that we saw from high on the south arête the muddy pond and beaver dam which so interested the Siwash. We noticed a fresh beaver slide and beaver cuttings and bear signs were everywhere abundant. Kese remarked: "I tink so mebbe deese winter I catch much beeber."

In spite of the fact that the sky was no more promising than it had been for days we set out at 3.30 for the peak. We reached, at 8.30, the end of the arête that separates the two glaciers flowing to the east. After a second breakfast we crossed the north glacier and gained the col from which began the best five hours of rock work I have ever had. Our efforts, however, were in vain as a snowstorm obliterated all but the immediate surroundings and we were compelled to turn back at 1.30.

It was in this enforced idleness that I saw an interesting bear hunt. Black bears were very plentiful and the Siwash was quite anxious to get one. After supper one evening Kese pointed out a bear on a rock slide across the cove, but as I was saving energy for Mt. Merriam I let him go after it. A few minutes paddling brought him to the slide up which he scrambled silently. The bear wandered aimlessly down until they were, unbeknown to each other, but fifty yards apart. Then the Siwash saw the moving bushes and began to stalk through dense alders, when they both appeared in the open still not more than fifty yards apart, and neither knowing the whereabouts of the other. At this juncture, I saw bear number two appear below and walk directly for the Indian, who spied it behind him and made two poor shots with the .35. He tracked the bear through a very dense thicket, more nearly perpendicular than horizontal, and finally about dark shot it. The first bear meanwhile remained in sight on the slide entirely oblivious of proceedings. Indians, I have observed, are usually poor shots, but their high degree of skill in tracking more than makes up the deficiency.

The second attempt on Mt. Merriam was made two days later, leaving at 4.45 and ascending by the east face and southeast arête. We roped at 8.45 and in six hours were on the summit, ascending by steep rock to the edge of the glacier which falls from the very top. A sharp cleft had to be descended and ascended as the sides of the arête were impossible. Considerable cutting was necessary after scraping off six inches of new snow ready to avalanche. It was now but a matter of time and weather, and we plugged along. This did not appeal at all to my Siwash but he came without any fuss and apparently enjoyed gaining the summit. A busy hour from 2.45 to 3.45 was spent with the instruments and enjoying exquisite views of the lake and the mountains. The hypsometer registered 194° F.—9684 feet. We came down rapidly if not cautiously, I for one, very happy. Mt. Merriam is a black, forbidding peak, sheer and impossible to its very base on the

south and almost so on the west, while the northeast forms a cirque with high narrow arêtes on the southeast and north. The glacier in the cirque drops from the very summit of the peak broken here and there by rock cliffs forming a series of ice-falls from which blocks crash ominously. Camp was gained at 8.45, a sixteen hour day with an ascent of six thousand feet from the lake. Barring the Aemmer Pass near Mt. Goodsir, this has been my best day of mountaineering.

C 26 towering above the pass to the Southgate River and opposite the end of the west arm of the lake offers, I think, a fine climb as it is quite steep and the highest of the lake region. I have not seen the western face which might be readily ascended. A peak between Mt. Merriam and Chilko Peak, C 24 on the map, presents straight, sharp, snow arêtes which fall away abruptly to ice-filled cirques shown plainly in photographs from the two peaks mentioned. Any route I could discover demanded considerable ice work, so that a bivouac would be necessary at its base for the successful ascent.

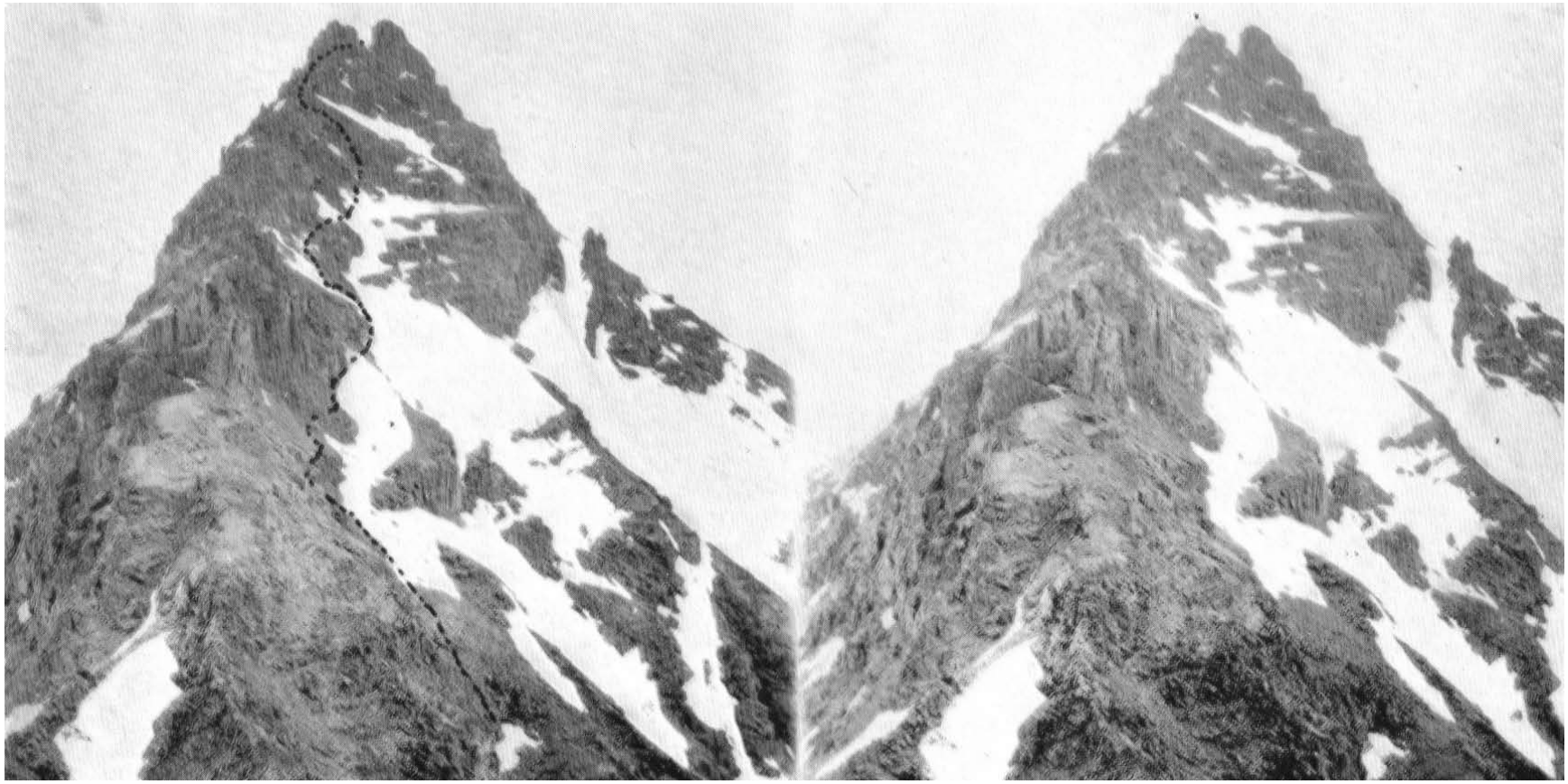
A very interesting article appeared in the Victoria Daily Colonist of July 5th, 1910, by Mr. Sydney Williams, in which he described Mt. Tatlow near Nemiah Valley and terms it the culminating peak of the Cascades. There are at least four peaks around the south end of the lake higher and more rugged than Mt. Tatlow as registered by the clinometer from Mt. Merriam, which registered 0° 45’ down. Three higher peaks were visible, including C 26 on which the clinometer read 1° 40’ up.

With the northern point at the entrance to the west arm as our objective, we paddled up the lake only to discover a heavy sea running out of the bay, necessitating a camp until morning. The shore here was most uninviting as it rose almost sheer from the deep water, so that we were compelled to climb over a hundred feet for a place to sleep—perhaps try to sleep, would be more correct, because a long-legged rat persisted in gnawing holes in the leather coat I was using as a pillow. When the flash lamp was turned on him, he came up to within three feet and bobbed about with his large round ears sticking out sideways as if he could not bear to miss any of the fun.

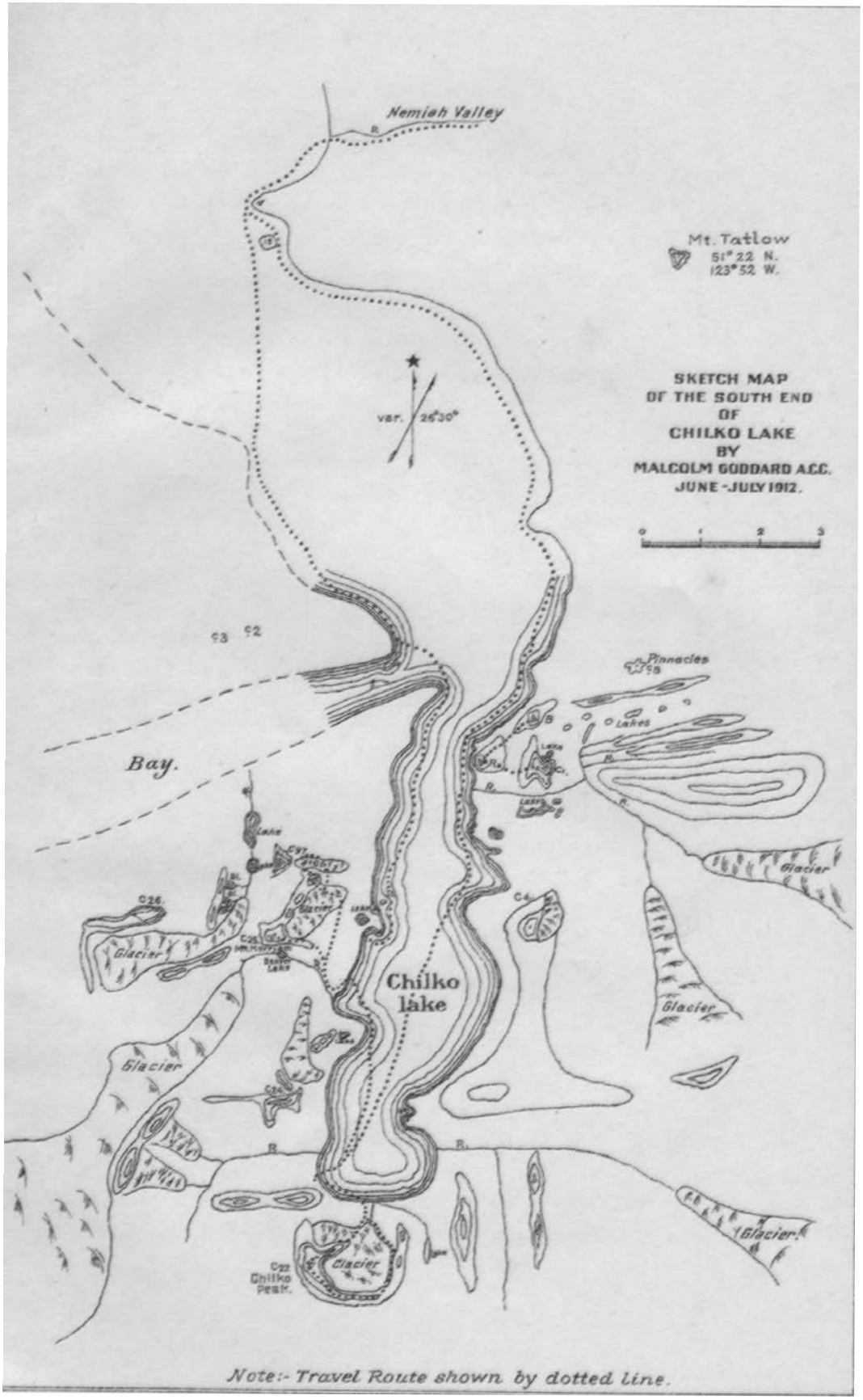
Early the next morning, the sea being lower, we crossed to camp at the base of C 2, investigating Johnny’s House on the small island en route. This is a bare rock quite a distance from shore, upon which rests a log cabin. It is used in winter in the trapping season, but I should prefer to be closer to wood and independent of periods of wind and high seas in which a dug-out is a wet craft. Winter here is severe, where cold winds blow from the coast for five or six days without cessation. At such times the Siwashes, expert canoe-men as they are, stay ashore. One remarked to me at Lee’s that it got pretty lonesome sitting on a cliff waiting for the wind to die down.

The strong wind which had been blowing up the lake for two days ceased and that evening when the broad stretch of water had calmed down, we set out for the opposite shore. I heaved a sigh of relief when we reached our cache about midnight. We found our animals in exactly the spot in which we had turned them loose three weeks before. The grass had evidently suited them. The nomadic life again resumed, we moved to the base of Mt. Tatlow, on which I had previously studied two good routes, but the clouds settled still lower, and when the lower hills were covered with fresh snow, it seemed hopeless.

Rather than repeat the tiresome jack pine trip down the Chilko River I decided to return to Lee’s by the Whitewater in spite of the bad ford, to avoid which we had come by the long trail. The Whitewater in July is indeed a river to be taken seriously. It is very swift and in crossing fifty yards the horses were carried a hundred yards down stream. Our duffel was ferried in a very narrow dug-out which leaked like a sieve and had to be emptied after each crossing. When a Siwash tells you, “Too much strong water,” it’s best to “look a leetle out.” From here the going is good over the



North Peaks On North Arete Of Mt. Merriam (Stereoscopic View). Photo, Malcolm Goddard


Nemiah Valley
Mt. Tatlow
51° 22 N.
123° 52 W.
var. 26°30'
SKETCH MAP
OF THE SOUTH END
OF
CHILKO LAKE
BY
MALCOLM GODDARD A.C.C.
JUNE - JULY 1912.
0 1 2 3
C3 C2
Pinnacles
C1
Lakes
Bay.
Lake
C27
C26
Glacier
C25
Chilko
lake
C4
Glacier
Glacier
Glacier
Glacier
C22
Chilko
Peak.
Glacier
Note:- Travel Route shown by dotted line.

rolling plateau to Lee's. My Siwash, Kese, couldn't have been better for my purpose had he been made to order. I had misgivings when I decided to go on a climbing expedition with one Indian, but in addition to his skill in packing and his wonderful handling of a canoe, he soon handled his ice axe like a veteran. His "me skeere" on our first stiff rock changed to "we catchum soon" when he found how well the Swiss edge nails held, but he always changed to moccasins upon reaching the woods. With these on, he led me a merry pace through the timber.

Yes! The Provincial Mineralogist was right. Chilko Lake is, I believe, the finest lake in British Columbia, and I can but hope that the stereoscopic pictures will reveal some of its charms to others as they were revealed to me in the few weeks by pack and canoe in

"A land where the mountains are nameless—
And the rivers all run God knows where."

A Neglected Valley.

By C. B. Sissons.

Few Canadians realize the extent of our mountain heritage; and even those who know something of the mountains would be inclined to maintain that the mountaineer looking for new fields to conquer,— or the explorer in search of Balboan thrills must travel far from the tracks beaten by men and locomotives. After all, our pioneer explorers and mountaineers were able to do little more than observe the outstanding features and attempt the most striking peaks of the solitudes into which they were able to penetrate; and the average tourist is content to scramble for seats in observation cars and grumble at the service at hotels, priding himself on the fact that he knows a little more than the lady who imagined that the C.P.R. had planted the Illecillewaet Glacier for the benefit of tourists. The Alpine Club of Canada in these later days has done something to leaven the lump of ignorance, and to find out and make known what the bear went over the mountain to see; but it is not surprising that even close to the railway should nestle valleys hitherto unopened to those who go up to the mountains in Pulmans.

As early as 1901, Mr. Arthur O. Wheeler looked up one of these valleys. He was just commencing the now interrupted photographic survey of the territory accessible from the railway, and at that time was not wandering as far into the interior as he did when the survey was carried farther east. He commenced his important work at the little village of Albert Canyon, midway between Glacier House and Revelstoke, famous generally for its convenient canyon, and cheering by reason of its trim fields to the eye of the easterner somewhat wearied of scenery grand but desolate. From the village what was once a waggon road leads for some thirty miles up the northern branch of the Illecillewaet River to the notorious Waverley and Tangier mines. Along this road Wheeler with his party proceeded a few miles, and from it occupied two low stations, one on either side of the valley. In his first book on the Selkirks he thus describes what he saw: "Both command a fine view of the valley of the North Branch, disclosing an array of tributary valleys and, at their heads, rugged snow peaks, many of them apparently over ten thousand feet above sea level. The road up the stream affording facilities for the use of pack animals, furnishes an excellent opportunity to explore the wild beauties of the surrounding country." The work was published in 1905, yet no advantage was taken of this untouched field. Later, Mr. Carson, a Dominion Land Surveyor, who was in charge of the triangulation of the Railway Belt established stations on two peaks on the eastern side of the valley. To these he gave the names Cornice and Sorcerer, and

Mt. Moloch And Fang Rock. View No. 1 Photo, C.B. Sissons

Looking Up The Valley Above "The Farm". View No. 2. Photo, C.B. Sissons

placed their altitudes respectively at 9,000 and 10,500 feet.

It was in 1911 that the first party not intent on trapping or connected with surveys or following mining will-o'-the-wisps entered the valley. This consisted of Professor E. W. D. Holway, Mr. Howard Palmer and Professor Frederick K. Butters. Their evident intention was not so much to explore the gaps in the valley left by Carson's survey, which aimed at publishing a relatively true skeleton map rather than the filling in of detail, as to gather information concerning the head of the valley and the regions beyond, —toward Mt. Sir Sandford. The results of their investigations were published by Palmer in the April, 1912, number of the Journal of the American Geographical Society. At the conclusion of his journeys Palmer could claim to have "covered the sources and upper courses of the master streams," and stated: "Indeed, except for the territory northeasterly from Revelstoke and the very tip of the Big Bend itself, there is very little of the region that has not been visible from our stations." However, his party made only one climb of the peaks to the west of the North Branch, and that was a virgin peak, whose altitude was estimated at 10,100 feet, and to which was given the name of Mt. Holway, situated about five miles west of the source of the North Fork. Consequently, some three hundred square miles of mountains, drained to the east by the two branches of the North Fork and to the west by Carnes and Laforme Creeks were still practically unmapped and unexplored, except for the wanderings of the trapper, the timber cruiser and the prospector. In fact, Carnes Creek is entirely wrong in every map hitherto published and Laforme Creek does not appear at all in Palmer's map; while the two creeks flowing into the North Branch from the west, and furnishing the greater part of its waters, appear on his map as helpless sprouts reaching out after a source.

In Mrs. H. J. Parker and A. O. Wheeler's Guide to the Selkirks, published in 1912, the following appealing paragraph appears in the description of the view from Bagheera, a low mountain near Glacier: "The summit overlooks a vast array of peaks reaching northwards, also the divide between Cariboo Creek and the north branch of the Illecillewaet valley itself. North and west twenty glaciers may be counted, notably three on the north branch especially large and interesting. Out of the centre of the nearest one rises a sharp pinnacle of rock, which is seen prominently from many points. It has been named 'Fang Rock.' "

Early in July, 1912, Mr. M. P. Bridgland, Carson's successor, invited me to spend a week with him in this valley so long neglected by the mountaineer. Previously, as a resident of Revelstoke and a member of his party, I had seen something of the country between the North Branch and the Columbia River, and I eagerly accepted his invitation. Rain lengthened our stay into two weeks and then left me with so much still unseen that, at the conclusion of the annual camp of the Alpine Club, in company with two University of Toronto men, Mr. Harold Bennett and Mr. P. A. W. Wallace, I was constrained again to visit the valley. It is hoped that this article may prove useful to others who may be attracted to this region, still, in large part, untravelled by man; and that in the near future by the repair of the old waggon road and the completion of some ten miles of trail along Downie Creek, a new circuit of great interest may be established from Revelstoke to Albert Canyon by rail, up the North Branch and down Downie Creek by trail, and then down the Columbia to Revelstoke by trail or boat.

The waggon road is still practicable for man and beast. That is, provided the man is prepared to wrestle with tangled and frequently soaking brush and bracken, and the beast is calm in the face of uncertain bridges and resourceful in circumnavigating windfalls. Further, a strong walker may make the pass before nightfall, although that would be more than the ordinary beast of burden could be expected to accomplish in view of the impediments mentioned. The trail—for to this the

Valley Leading To Mt. Moloch. View No. 3. Photo, C.B. Sissons

Sunset View From Cornice Mt. View No. 4. Photo, C.B. Sissons

waggon road has degenerated and thus it shall be named—crosses the East Branch, that is the one having its source at Glacier, about a mile out of the village and probably less than that below the familiar canyon. A mile farther and the trail is following the North Branch which carries a volume of water somewhat greater, I should say, than the East Branch. At four miles from the village one crosses the stream on a bridge, now rendered precarious by the loss of a beam on the nether side. We led our horses warily, one at a time, across the upper side, and were relieved when we found out by experience that it would support the weight. After five miles—nine in all from the village—the stream is recrossed by a most picturesque bridge some twenty feet above the madly rushing- water. From the bridge Fang Rock may be seen above the steep shoulder of a near ridge. In Wheeler's Topographical Map it appears as the centre of a few circles of contour lines in a blank field—an oasis in a desert of indifference. To us from the bridge it was simply a finger pointing skyward. From the north it shows like a lean prairie elevator with a broken back. Surely it is a peak to seduce any rock-climber, yet no one has ever been near it. It may be seen in the distance at the left of View No. 1.

One is likely to linger at the bridge. The steep mountain side is good to the eye, with the light green of the alder and the darker shade of the timber, and the elfin point of rock beyond. Furthermore, in season, raspberries abound just beyond the bridge, and the wayfaring man is indeed a fool who refuses to stop for berries. A little farther on is a trapper's cabin with wood neatly piled against a rainy day. Within a mile one of the two large feeding creeks tumbles down a narrow valley. Although we could see that Nature had conveniently placed a generous log across the main stream just above the confluence, we had to leave the exploration of the source of this tributary to another occasion or to another party. By following the stream to its origin, probably less than five miles back, the explorer will doubtless be able to relate the sources of Silver Creek, Laforme Creek, and the most southerly of the branches of Carnes Creek. It is quite possible that they all have their origin in the ice-field from which Fang Rock protrudes.

About a mile beyond this tributary one comes to a cataract which will some day be famous. It leaps pell-mell down the mountain side for over a thousand feet. The trail here has been constructed about two hundred feet above the river, which gives one an excellent view of the cataract across the valley. Its lower reaches tumble wildly, but higher up the water appears to hang motionless. At one point it is suspended like lace, wide across a face of rock. The cataract takes more time than the raspberries.

At fifteen miles one comes to the "Farm." This is the name locally given and preserved by Carson, who . always found it difficult to restrain fancy in the matter of names. The only building is a shack bearing the name of "HOTEL," four letters being executed in poles and a washbasin liberally punctured by bullets serving for the "O." The sole tenants of the "hotel" are porcupines, and the only farm crop of which we saw evidence was hay; welcome indeed to our pack horses, which during the two weeks spent in these meadows, like Jeshurun, waxed fat and kicked. At and above the Farm the valley opens out and the general appearance is shown in View No. 2.

After five miles one reaches the second of the two large creeks tributary to the North Branch. There is another stream also flowing from the west and draining the glaciers to the south of Mt. Holway and to the east of Bridgland's Downie Creek camera station; but it is small compared with the other two. From the east there are no considerable streams flowing down because there are no large glaciers. The short valley drained by the latter creek abounds in interest to the mountaineer and scientist. There was no sign of human visitation, although one finds it hard to believe that not a single traveller of the waggon road of early days pushed through its three miles of tangled willow

North Glacier Of Mt. Moloch. View No. 5. Photo, P.A.W. Wallace

Mt. Cairnes Showing M.P. Bridgland's Route. View No. 7. Photo, M.P. Bridgland

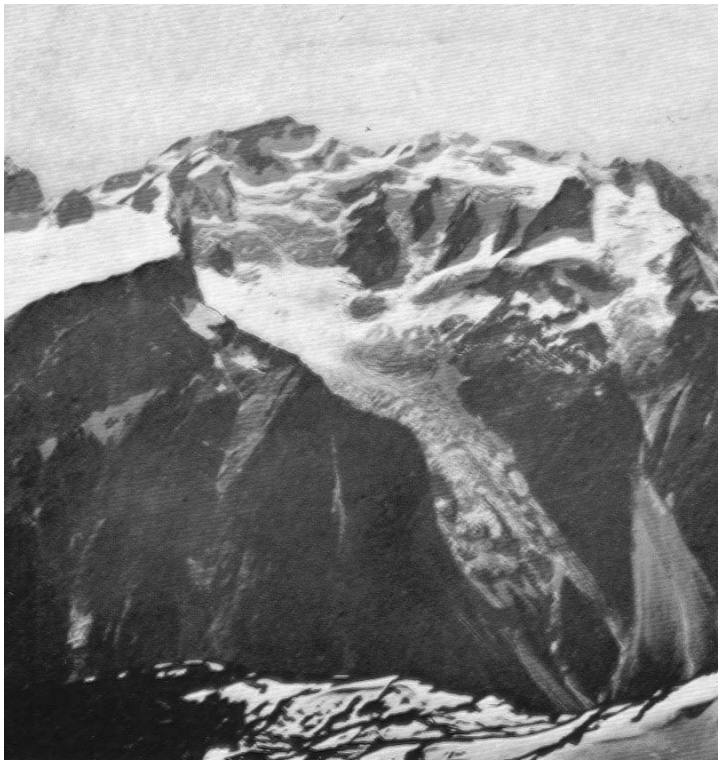
and alder to the two splendid glaciers at its head. View No. 3 must surely have proved irresistible to some one. We were able to take horses up the valley about two miles by fording and using the gravel bars and finally by chopping through willow and alder on the right bank until a gorge stopped the horses.

Mt. Moloch, a forbidding rock peak, blocks the end of the valley. Its altitude is about 10,200 feet, and it is one of the grandest of the Selkirks. I had often seen and admired its dark rampart from distant mountains, and a nearer view did not lessen the charm. It may be possible to ascend it from the north. The mountain is seen standing up prominently just to the right of the sun-lit clouds in the evening picture taken from Cornice mountain on the east of the valley in View No. 4. It is also shown on the left of View No. 5. The five hundred feet of rock climb at the end of the ridge looks as if it might rival Mt. Tupper or the northwest ridge of Mt. Sir Donald. It is not certain that the east ridge is impracticable. One would probably need to sleep out on the mountain to do it, and would need to travel rapidly. At 1.30 we found ourselves at something under 9,000 feet, with the razor edge ascending and descending in the weird way Mr. Wallace described in his article in "Rod and Gun," as "the camels," and with very steep rock beyond that. The south face is altogether too steep for convenient use and is probably quite out of the question.

Of the two glaciers to the north and east of Mt. Moloch something must be said. The three eastern tongues of that to the north may be seen in View No. 5. This is what may be called a "roof glacier." It soon slopes away to the west, where it flows to a delightful green lake draining into the main branch of Downie Creek. As one stands on the roof and looks westward, immediately across the valley of Downie Creek is seen Bridgland's Carnes Station, about 10,000 feet. It was first ascended in 1910, and affords a climb of unusual interest, as may be judged from View No. 7, which shows the route chosen at that time by Bridgland. I also submit a view (No. 8) of snow-markings obtained on the climb which may be thought to merit preservation in this Journal. This view of Carnes is taken from the west and not from the Downie Creek Valley, which no mountaineer has ever penetrated. From the Downie Creek side Palmer was so impressed with the appearance of the mountain that he suggested the name "Serenity" for it. I might mention that just before reaching this roof glacier, we came right upon some thirty she-goats and kids sunning themselves. Two days afterwards, across the valley, we encountered the head of the flock browsing and too unused to men to be greatly concerned at our appearance.

The glacier to the east of Mt. Moloch deserves special mention. It is tackling the task of quarrying down the mountain with more energy for its size than any living piece of ice I have seen. At its tongue it has piled up a great fan about three hundred feet high. At the base of the fan rocks of various size are strewn, but higher up the surface is covered by mud hardened into a sort of cement. Near the tip the ice is just below the mud and requires wary walking. A gloomy cave is hollowed out under the very apex, where it joins with the glacier proper. The first few hundred feet of this is cut into séracs of most weird shape. Higher up the surface gapes with crevasses, sometimes running across from cliff to cliff, for the whole width of the ice is never more than half a mile, the mountains rising abruptly to right and left and, after about two miles, at the end as well. As you wind your way up the ice on the left the cliffs are brown, with two peaks of grey stuck jauntily into the nearer side. Farther on they are a rusty red, while the sheer face of Moloch is grey limestone. The sluggish glacier is catching the droppings from the cliffs and stealing more pieces from the sides as it shoulders its way to dissolve in the river. And what a river! No coal miner would think of doing his Sunday washing in it. If I speak harshly of this torrent it may be put down to a grudge I bear it. It once kept us from supper and blankets after a long and trying day. In the morning, by

Curious Snow Fomrations On Moloch Glacier. View No. 8. Photo, C.W. Sissons



Looking West From Summit Of Mt. Holway. Photo, E.W.D. Holway

the light of day, it had been crossed by leaping from rock to rock; but in the dark, swollen by a day of glorious sun, it was quite beyond our powers. As a result we went to sleep hungry, and were kept half warm in the shelter of a rock by a fire made of such drift-wood as we succeeded in stumbling over. On another occasion the glacier itself played a prank on us: a few séracs decided to tumble over a perpendicular cliff, just as we were stepping out of shelter to cross under it. We heard the thunder in time and stepped back to watch the magnificent spectacle. Our thanks are due to the two grizzlies we had stopped to watch through the glass at work, digging up roots across the valley. I think I am right in concluding that this little curved glacier, not more than three miles long or half a mile wide has some very cunning ways.

At the head of the main valley, some eight miles above the one just described, are two excellent peaks. On the right as one ascends the valley is Mt. Sorcerer, about 10,400 feet, and on the left, some five miles to the west of the pass, Mt. Holway, about 10,000 feet. Carson conquered the former and used it as a triangulation station, while Holway, Palmer and Butters first ascended the latter. Both are snow climbs. Carson describes Sorcerer as "wearying." Palmer has nothing to say of the ascent of Holway, but speaks of an "unequalled outlook from the summit."

The pass of about 6,500 feet between the Sorcerer and the end of the Holway ridge leads to extensive meadows; above are the mines which caused the waggon road to succeed an almost obsolete trail high up on the eastern side of the valley of the North Branch. The old trail crosses a pass north of Corbin Pk. and descends to the railway at Flat Creek. At the former pass the headwaters of the smaller and north branch of Downie Creek have their rise, and only ten miles of trail are necessary to connect the waggon road with the trail which ascends from the Columbia River to where Downie Creek branches. This inexpensive piece of work would complete the splendid circuit previously mentioned.

Undoubtedly when time and the example of the Alpine Club of Canada has served to educate the lovers of Nature to the fact that there is no place like home, our neglected valley, will be a source of pleasure to many. Certainly none of those I have visited attracts me more than the one I have here attempted to describe.

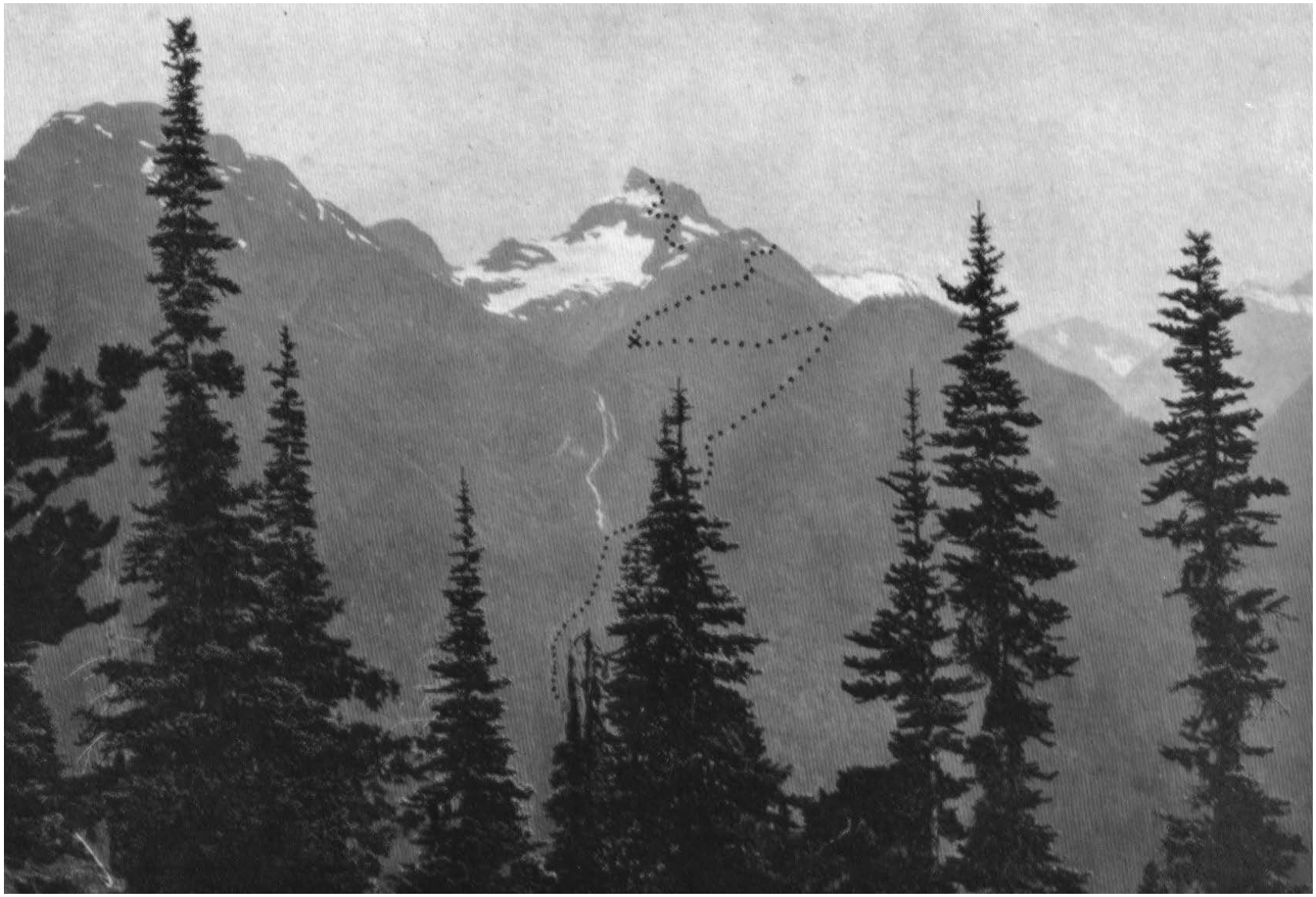
Mount Elkhorn, Strathcona Park.

By E. O. Wheeler.

N.B.—Heights and directions are approximate only.

From our Camp near Drum Lake the most approachable of the higher mountains of the Elk River valley was the peak known locally as the "Vancouver Island Matterhorn," which peak we examined carefully from the "Lookout" south of Drum Lake, with a view to making its ascent; and as there are already two Matterhorns in Canada, we christened it provisionally Mt. Elkhorn.

From its source directly south of Mt. Elkhorn, the Elk River flows northwest; then turning a shoulder of the mountain, it flows north for about three miles, and finally east to its junction with the upper Campbell. The shoulder referred to rises in a series of steep bluffs covered with burned timber, to a long ridge (altitude about 5,000 feet) trending approximately east, and leading to the northwest arête of the final peak. Below the north face of the peak is a small crevassed glacier, from which a stream flows through a timbered pocket, bounded on the south by the steep, terraced slopes of the west ridge, and on the north by similar slopes leading to a rounded rock peak north of Mt. Elkhorn. This peak is connected by a long broken ridge to a col (about 5,500 feet), from which



Elkhorn From The “Lookout” Route Shown ..... Camp Below X. Photo, R.H. Thomson

rises the northeast arête of the final peak of Elkhorn. At about 3,600 feet the stream drops over an 800-foot cliff in two pitches; below the fall the watercourse is steep and broken; it is hemmed in on the south by the above mentioned rocky shoulder, and on the north by the steep, brule-covered slopes of the rounded rock peak.

We decided to use one day in moving camp up to the pocket above the falls, and a second in climbing the peak. The easiest way to the pocket we thought to be straight up the watercourse, passing the fall on our left, as the burned shoulders on either side would :be extremely difficult going. From that camp we could make the peak, either by the northeast or northwest arête, as seemed best, and, if necessary, traverse along the upper edge of the glacier from one ridge to the other, or across the north face on a scree and snow ledge about 500 feet above the ice. On the whole the northwest arête looked best, provided we were not cut off from it by the cliffs immediately above the glacier.

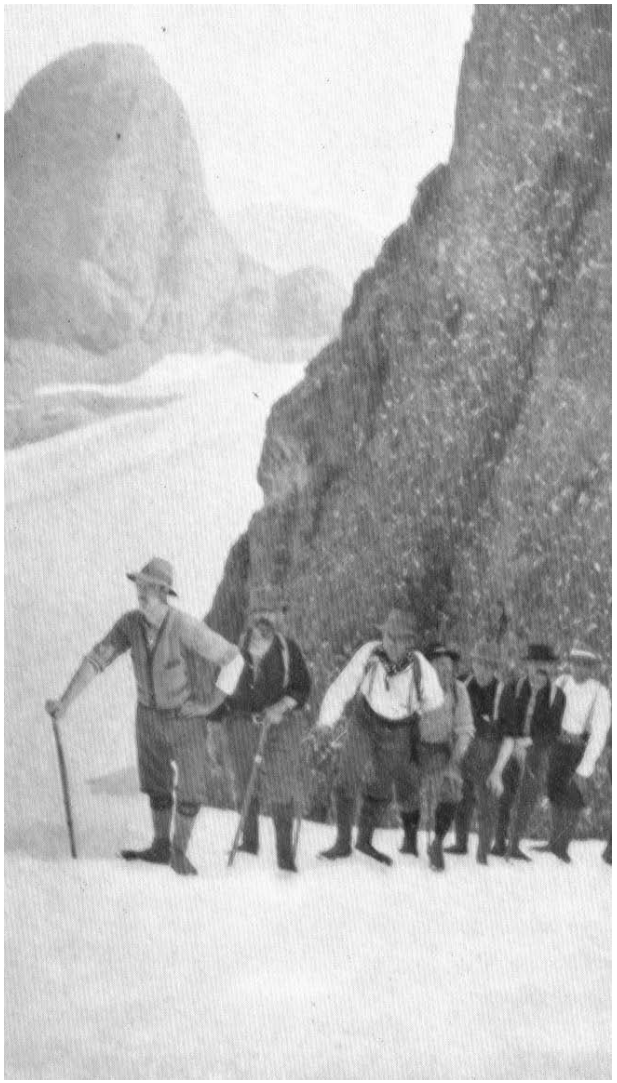
On August 20th, a party of nine A.C.C. members, namely: A. O. Wheeler, A. H. MacCarthy, D. A. Gillies, A. R. Hart, L. C. Wilson, the Rev. J. R. Robertson, F. A. Robertson, H. O. Frind and E. O. Wheeler, equipped with blankets, cooking utensils and food for three days, started from Drum Lake camp for the pocket. (Time 8:30; bar. 1060.) We followed a line of blazes for half a mile to the Elk River, which we crossed to the west bank, and still following the blazes, went up the river one and a half miles to a gravel bar opposite the mouth of the stream from the Elkhorn Glacier. The going was good for the first one and a half miles, but the last bit (when we lost the trail) was through bad devil's club. (Time 10:30; bar. 1280.) Crossing again to the east bank, we left the river behind us and followed up the bed of our stream. For an hour we made good headway through the timber and over big boulders and logs; but then, finding our road barred by a twenty-foot waterfall, were forced up the steep south bank into the burned timber. For three hours we crawled over and under huge fallen trees in a scorching sun, with the stream 200 feet below us; crossing to the north bank, we halted in a slightly shady spot for a very refreshing lunch of sardines and dry bread. (Time 1:20; bar. 2400.)

At 2:55 we started on, following the north bank for half an hour till clear of the burnt timber; the creek bed then gave good going by crossing from side to side on stones and logs, until we reached the falls. (Bar. 2850.) Swinging a little to the south we tried straight up the cliffs, but they were too steep, and forced us still further around into a deep rocky watercourse, the bed of which, however, gave us excellent going for 1,500 feet to a timbered saddle in the long west ridge; we encountered two rather slippery pitches of 20 or 30 feet, but with the aid of the rope they were quickly negotiated. (Time 6:55; bar. 4400.) After a ten-minute rest we traversed back to the north, skirting the cliffs on our right, until we reached a mossy ledge about 20 feet broad, overlooking the pocket, and about 800 feet above it. Water and wood were plentiful, so we decided to camp for the night. (Time 7:55; bar. 4660.)

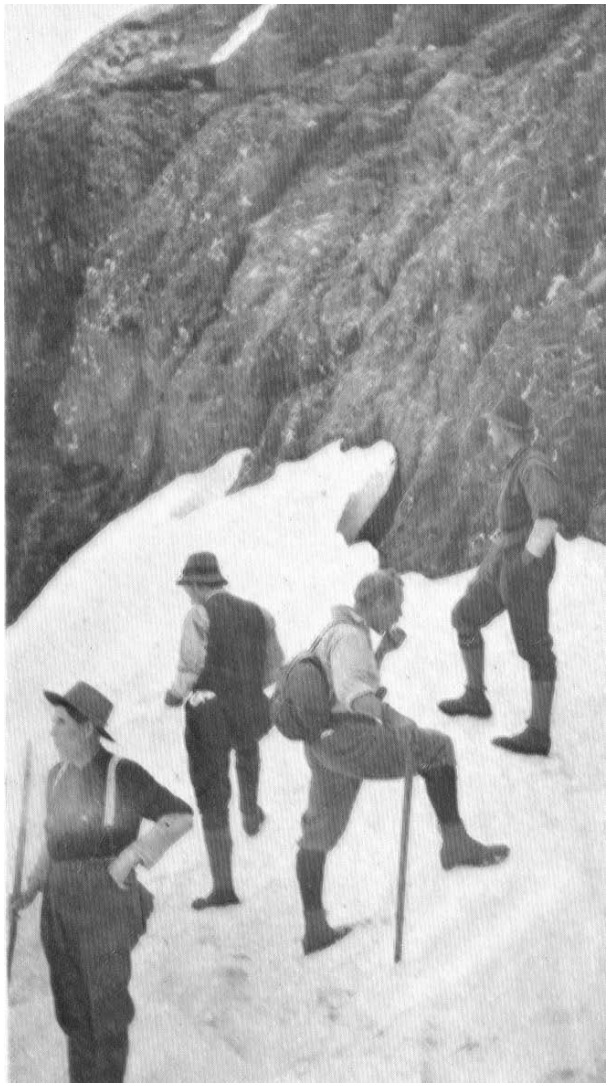
August 21st. At 7:30 we left camp and followed our ledge for fifteen minutes when it played out; so, rather than descend to the stream and climb again to the col, we decided to go up to the long west ridge and, if possible, follow it to the final northwest arête. We went up to the southwest over easy mossy ledges, and crossing the ridge (time 7:55; bar. 5150), traversed on its southwest side below the cliffs, until a grass slope gave us an easy route back to it. (Bar. 5740.) We then kept along the top, traversing on the southwest side occasionally to avoid rocky knobs, until we reached a little col at the foot of the final northwest arête. (Time 9:40; bar. 6100.) The ridge gave excellent going; it consists for the most part of large slabs of solid rock, and grassy slopes and ledges which are quite free from brush; the northeast side drops sheer down to the valley.

We Camped For The Night. Photo, H.O. Frind

We Halted For Lunch. Photo, H.O. Frind



Ascending The Glacier. Photo, H.O. Frind



At The Final Peak. Photo, H.O. Frind

From the col we found we could get up west of the arête to a ledge leading across the north face, but beyond that we could not see. I started on alone to prospect, and after twenty minutes scrambling up steep but solid rock with plenty of holds reached the ledge. (Time 10:30; bar. 6450.) The others meanwhile examined the west and southwest faces, but finding them to .be a series of very steep gullies and ridges, joined me at 11:15. We traversed out on the ledge below the large snow patch to about the middle of the north face, and finding a small stream, halted there for lunch. (Time 11:40; bar. 6650.) At 12:45 we went on, and cutting steps up the ice for about 150 feet (our snow patch proved to be clear ice with a thin layer of snow) we crossed a scree slope, which brought us back to the northwest arête. From that point a wide crack, starting up and to the right (i.e. west) provided excellent scrambling for 300 feet to another scree ledge, which we followed for 100 yards out on the west face to the bottom of a steep, thirty-foot chimney leading up the cliff to the left. This chimney required some care owing to loose rock above it, but by 1:55 we were all up; a pull of about 200 feet over loose scree and rotten ledges brought us out on the south ridge 100 yards from the summit, which we reached at 2:10 (bar. 7250).

We spent an hour and a quarter taking photographs and building a cairn, and at 3:25 left the top. We followed our route of the morning all the way down, and made good time, although the hot sun in our faces was very trying.

Down chimney 4:05
Lunch place . . . . . 4:35 (Bar. 6780)
Col . . . . . 5:35 (Bar. 6390)
Camp . . . . . 6:45 (Bar. 4880)

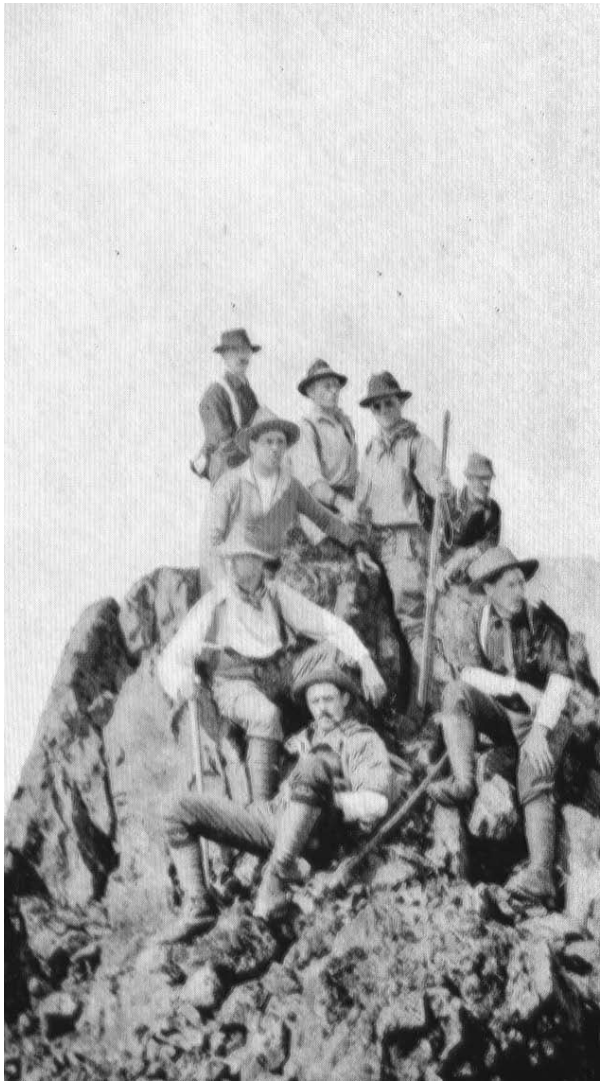
The barometer read only 220 feet higher than when we left camp in the morning, so that our peak should be, at the lowest estimate, just 7,000 feet.

The heat prevented our appetites being quite as keen as usual, in spite of the fact that our chef turned out some very fine pancakes; the way he juggled them in the frying pan was really remarkable!

August 22nd. We felt very lazy early in the morning, but towards 9:0 o'clock our camp became so hot that we were thankful to get away. We avoided the traverse up to the saddle by cutting down a small ravine into the big watercourse, but otherwise returned to Drum Lake Camp by the way we had come up.

Left camp ....9:20 (Bar. 4880)
Stopped for lunch. . . .11:40 (Bar. 2800)
Went on 1:10
Elk River ....2:55 (Bar. 1510)
Drum Lake Camp... ....4:50 (Bar. 1300)

Chimney Leading To Summit. Photo, H.O. Frind



Summit Of Elkhorn. Photo, H.O. Frind

SCIENTIFIC SECTION

Cirques And U-Shaped Mountain Valleys.

By A. P. Coleman.

The most characteristic and beautiful mountain valleys, as every student of mountains has noticed, are apt to have a U-shaped cross section, and the shortest of these valleys, half kettles or armchairs in form, are called cirques. Enclosed by cliffs to right and left with a snowy mountain background and usually a lake of exquisite colour in the lowest part of the basin, these are the most charming of all mountain valleys.

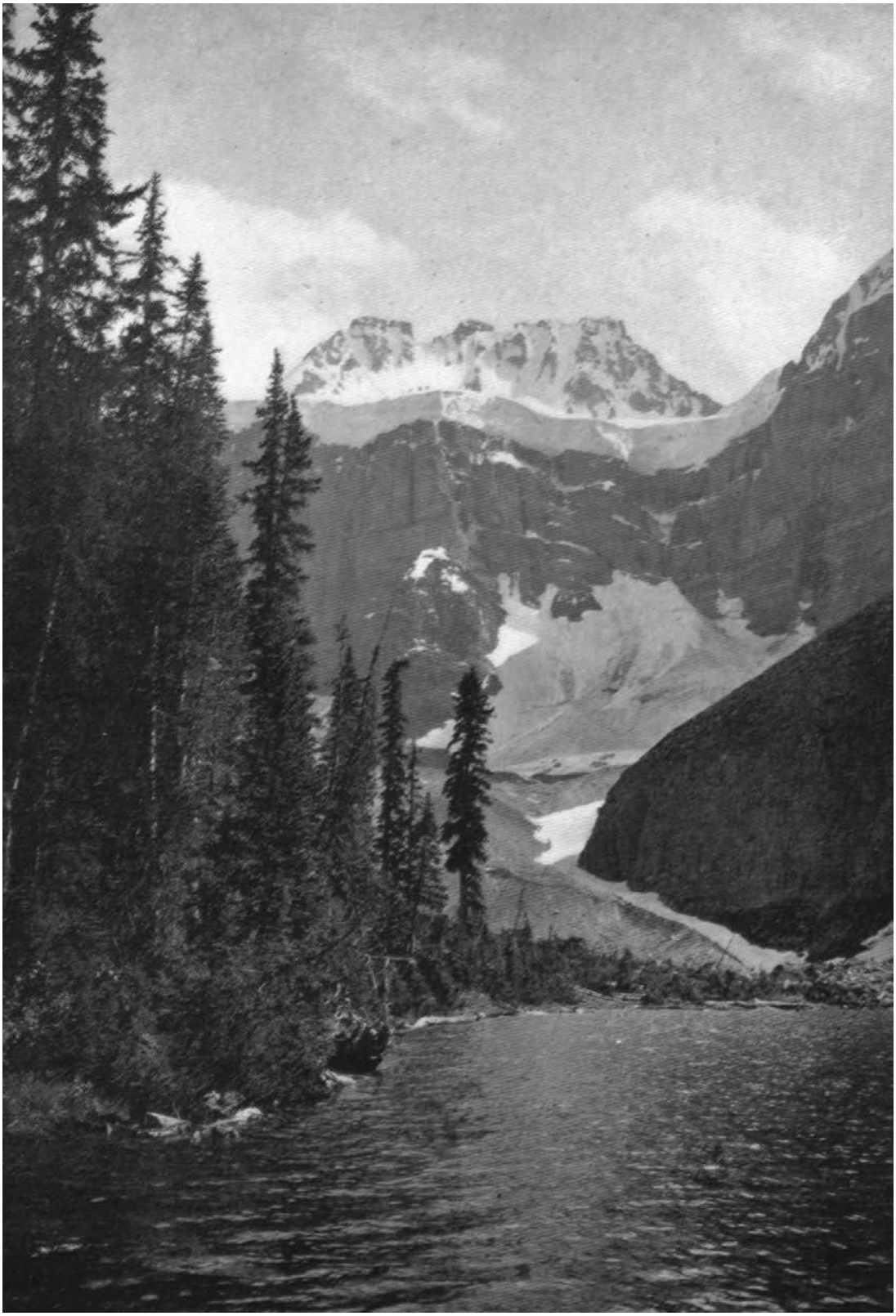
It is generally accepted that cirques are in some way due to the work of ice. In fact the higher cirques above snowline always have a small glacier nesting in them. Other cirques recently abandoned by the ice, since the level of perpetual snow has risen, are bare rocky cups, sometimes rock-rimmed at the outlet, but often with a strip of moraine on the margin of the basin. Lower and older cirques, especially in the Selkirks, have their basin lined with splendid spruces reflected in a placid lake. Along the Pacific coast north of Vancouver Island still older cirque valleys may be seen at sea level crowded with giant trees.

There can be little doubt that small glaciers above snowline are now carving their beds into the cirque form and eating back their valleys into the central mountain mass, but their exact mode of operation has been variously explained. Some writers put stress on abrasion of the rock by the stones and sand frozen as tools into the bottom of the ice. Others suggest that ‘’plucking” of blocks of the fissured rock beneath is the important process. A third suggestion is that the bergschrund where the glacier pulls away from the cliffs behind is the seat of most active work, the real tools being weathering and frost action in the chasm between ice and rock. The work of thawing by day and freezing by night probably goes on in summer in the bergschrund much as it does on exposed cliffs, while the glacier removes the blocks as they are quarried.

The first method, of sand papering away the hard rocks beneath the glacier, is no doubt a real but exceedingly slow process. The operations of plucking at the bottom of the basin and of frost quarrying at its sides and rear seem to be the important factors, the slow work of abrasion merely putting the final polish on the rock surfaces of these marvellous little valleys perched on the mountain flanks.

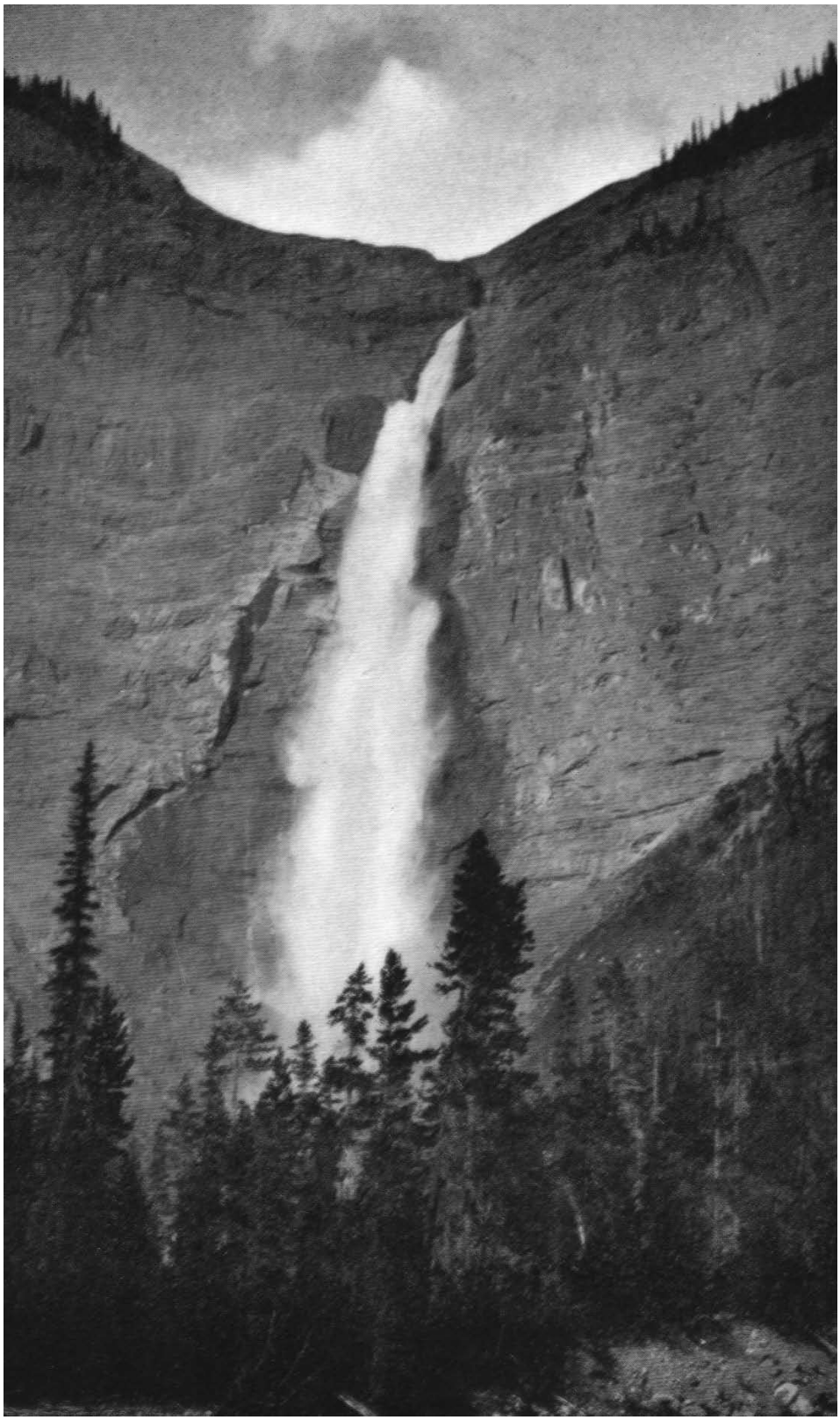
Where two cirques come together knife-edge ridges may be left between, evidence of the depth to which the basins have been hollowed beneath the original surface, and a once broad and gently sloped mountain attacked on all sides may be carved into a ragged peak rising above a circle of snowfields and glaciers. One can imagine the process going still further until the radiating ridges and the central peak are eaten up, leaving only a gently rounded dome of snow.

While cirques are found in the way just described, it is probable that most of the longer U-shaped valleys have a different history, beginning with a trough carved by some river or creek before the Ice Age. Running water makes deep narrow valleys, or even canyons in mountain regions where the slope is great. The normal shape of a valley carved by swiftly flowing water with plenty of stones and pebbles as tools is V-shaped or even steeper walled; and a mountain torrent requires only a small and narrow channel to drain a large area. If we suppose a change of climate with a lowering of the snowline so that the drainage of the area takes the form of ice the whole conditions are altered. To carry off as much water as a creek flowing five miles an hour with an



Enclosed By Cliffs To Right And Left With A Snowy Mountain Background And A Lake Of Exquisite Colour In The Lowest Part Of The Basin. Photo, Byron Harmon

A Ragged Peak Arising Above A Circle Of Snowfields And Glaciers. Photo, Byron Harmon



Waterfalls Plunge Into Space For 1000 Or 2000 Feet. Photo, Byron Harmon

The Higher Peaks Rose Above The Snowfields As Nunataks. Photo, Byron Harmon.

average breadth of ten feet and depth of two feet a glacier flowing a foot a day requires a breadth of a mile and a quarter and a thickness of 2,000 feet. It is evident then that if a glacier inherits a narrow V-shaped river valley it must enlarge it enormously, make it broad and U-shaped, if it is to transport as much water in the solid state as the river did when liquid.

This sluggish flow of ice, as compared with other, accounts also for the splendid "hanging valleys" from which waterfalls plunge into space for 1,000 or 2,000 feet and reach the bottom as wreaths of wind blown spray. When the ice occupied both valleys the small tributary glacier came in with a surface level corresponding to that of the glacier occupying the main valley and could cut no deeper than that controlling surface allowed. The main glacier to carry its far greater volume of ice required to cut its valley 1,000 feet or 2,000 feet deeper and a mile wider than that of the tributary. Both are U-shaped, but the tributary occupies a small u and the other a large capital U. When the whole system of main and tributary glaciers thawed from the region the immense disparity in the depth of the two channels provided some of our most marvellous waterfalls.

Both cirques and U-shaped valleys owe their lakes often to the moraines piled up by former glaciers. In a long valley there may be a succession of lovely lake basins each held by a crescent-shaped terminal moraine left at a particular stage of the glacier's retreat before the rising warmth of the climate. Lake basins due to morainic dams are more frequent than the rock-rimmed basins caused by glaciers "over deepening" their valleys at special points, though both are well illustrated in the mountains.

The colours of our mountain lakes delight every visitor and one naturally asks why they should have such gem-like hues as compared with the pale greenish-blue of eastern Canadian lakes. The only marked difference in origin between the lakes of the west and the east is the presence of glacial waters in the mountains and its absence in the east. It seems strange to trace the brilliant colours of mountain waters to the effects of glacial mud, yet the cause of the usual intense blue is probably to be found in particles of mud so fine that they remain suspended in the water after the heavier sediments have fallen. If these particles are very minute, they reflect only the shorter, that is the blue, rays of light; if a little larger the green waves are reflected also. With these colours, due to the finest mud particles, there are sometimes mingled in shallow water the yellow of sand beds or the richer green of aquatic plants, giving a considerable range of beautiful tints. Some tarns surrounded by muskegs have quite different sets of colours, however, ranging from dark brown to yellowish tones according to the amount of dissolved peaty matter. They suggest amber or zircon, while the other lakes, which are much more common, suggest turquoise, aquamarine or emerald; all gems of rich colour in splendid setting.

The most characteristic beauties of our mountains come directly from present ice action or are inherited from the more extensive glaciers of the Ice Age which filled all the valleys though the higher peaks rose above the snowfields as nunataks.

Motion Of The Yoho Glacier.

By Arthur O. Wheeler.

Owing to the expedition made by the Alpine Club of Canada to the Jasper Park, Yellowhead Pass and Mount Robson region, from the beginning of July to the end of September, 1911, it was found impossible to obtain the customary measurements for the motion of the Yoho Glacier for that year, and it was not until the 16th of September, 1912, that the measurements were again made.

The interval of movement here dealt with, therefore, is between August 22nd, 1910, and September 16th, 1912—a period of two years and twenty-five days, or 756 days all told.

Rate Of Flow.

On reaching the point where the pony trail leaves the timber at the right lateral moraine and the entire front of the ice mass of the forefoot comes into view, it was seen at a glance ‘that a very considerable change had taken place since the previous observations; and it was with fear and trepidation that steps were cut and the observers climbed to the undulating, but less steep, part of the ice where the line of six plates had last been set, and commenced a search for them.

Nos. 6, 5, 4, and 3 were readily found, but no trace could be discovered of Nos. 2 and 1. The portion of the ice on which they had been set was very much shrunken, badly crevassed and littered by rock and mud debris. It was evident that the missing plates had either fallen into newly formed crevasses, or else had been swept off the ice by the broken rock and other material that had gathered on it.

There was, however, one compensation for the missing plates, viz.: that the loss might have been worse, as they were the two representing the least annual movement. Indeed, unless a steady and very appreciable advance of the glacier takes place, soon this part of it will cease to be a factor of account in the measurements.

As usual, angles were read from both ends of the Base A-B situated high up on the eastern slope of the valley, and by this means the present positions of the four remaining plates were found. A plot of these positions and a comparison with the respective positions when reset in line on the 22nd of August, 1910, gives the results shown in the following table.

Table Showing the Motion of Plates Set on Yoho Glacier.

Movement between August22nd, 1910, and September 16th, 1912.

Plate	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6
Total Motion	Lost	Lost	225 ft.	250 ft.	283 ft.	272 ft.
Average Yearly Motion	Lost	Lost	109 ft.	121 ft.	137 ft.	132 ft.
Average Daily Motion	Lost	Lost	3.57 in.	3.97 in.	4.49 in.	4.32 in.

The average daily motion of plates Nos. 3, 4, 5 and 6, shown above, very nearly agrees with the average daily motion for July 17th, 1907, to July 1st, 1908.

Taking the same daily motions for the lost plates, viz.: No. 1 = .69 inches and No. 2 = 1.48 inches, we have:

Average daily motion of ice from August 22nd, 1910, to September 16th, 1912 = 3.09 inches.

By Comparison.

1906-1907, Average daily motion, 3.15 inches.

1907-1908, Average daily motion, 3.12 inches.

1908-1909, Average daily motion, 3.23 inches.

Illustration 1: From Viewpoint 79.3 Feet South Of Rock No. 1 - 1912. Photo, A.O. Wheeler

Illustration 2: From Rock No. 2 - 1912. Photo, A.O. Wheeler

1909-1910, Average daily motion, 3.11 inches.
1910-1912, Average daily motion, 3.09 inches.

Note.—A full set of tables of previous measurements is given in The Canadian Alpine Journal for 1911.

For Advance or Retreat.

The usual measurements were made from marked Rocks Nos. 1 and 2 on the east side, and from the Sherzer Rock on the west side.

The results are given in the following table:

Table Showing Measurements to Nearest Ice.

Year	From Rock No. 1 Left side of Stream	From Rock No. 2 Left Side of Stream	From Sherzer Rock Right Side of Stream
1904	……	……..	79.4 ft.
1906	27.5 ft	36.6 ft.	79.6 ft.
1907	35.8ft	43.8 ft.	123.0 ft.
1908	72.3 ft.	104.4 ft.	138.5 ft.
1909	104 . 2 ft.	139 . 0 ft.	189.3 ft.
1910	167.0 ft.	204.0 ft.	201.0 ft.
1912	218.5ft.	255 .5 ft.	246.0 ft.
Distance from Rock No. 1 to Rock No. 2—53 feet			

The markings on the Sherzer Rock in the lateral moraine on the right side were almost completely obliterated by weather conditions. These were renewed.

The marks placed on a striated rock face on the right side of the stream in 1902, were completely obliterated and could not be identified.

1906-1907, Average retreat of ice forefoot, 19.6 feet.
1907-1908, Average retreat of ice forefoot, 37.5 feet.
1908-1909, Average retreat of ice forefoot, 39.0 feet.
1909-1910, Average retreat of ice forefoot, 46.5 feet.
1910-1912, Average retreat of ice forefoot, 49.3 feet.

It will be seen from the above that the average retreat for the two years, 1911 and 1912, is very little greater than that for the year 1909-1910.

Annual Change in Formation of Ice Forefoot.

Considering the results above set forth, the most striking feature is that the retreat of the ice tongue for the two years 1910 to 1912 is very little greater than for the one year 1909 to 1910. It is probably due to the cold, wet summer of 1912, and it is remarkable because the mass of the ice tongue has shrunken very considerably.

This is apparent in many directions, and may be seen in comparison with the photographs shown in the previous issue of the Journal. In illustration No. 4, although the forefoot presents the usual magnificent ice arch from which the torrent issues, it may be noticed that directly above it there are a series of transverse crevasses formed, indicating a lessening of the thickness of the mass and foretelling an early dissolution of this section. Further back, the ice is broken into a wilder network of crevasses and séracs, and indicates a closer approach to the rock bed below the ice.

Illustration 3: From Rock No. 2 - 1912. Photo, A.O. Wheeler

Illustration 4: Ice Forefoot Of Yoho Glacier From Station E. Photo, A.O. Wheeler

In the same connection, illustration No. 1 is interesting. It will be noticed that the tongue is gradually assuming a long, easy slope, and is losing the precipitous ice cliff effect of several years. It will also be noticed that the left side, below the séracs, is sinking and being covered with rock and mud debris. It was in this sunken part the two missing plates were lost.

Again looking at illustration No. 1, below the broken formation, the ice has shrunken and withdrawn westward in a very marked degree, enlarging much the area of the uncovered rock floor.

Most marked of all, however, is the fact that the torrent from the eastern arm of the glacier which formerly, still in the rock canyon, disappeared below the ice, is now in the open and, with the exception of one small ice bridge, flows quite clear of the ice, except at the extreme point of the tongue where it joins the general flow that comes from, the arch.

The views (Nos. 1 and 2) taken from 79.3 feet south of Rock No. 1 and from Rock No. 2, do not show a great deal of change in the shape of the forefoot beyond a blunting of the points and a lessening of the thickness of the mass. If depreciation goes on at the present comparatively rapid rate, the at one time splendidly attractive Yoho Glacier will, like the Illecillewaet and Asulkan Glaciers of to-day, have lost much of its charm. To fully realize the great change that has taken place since the first observations made by the Alpine Club of Canada in 1906, it is necessary to compare the present illustrations with those shown in the 1907 issue of the Journal.

While taking the views at Rock No. 2, a black bear appeared on skyline at the crest of the high mound of ice on the left hand side next the rock cliffs. It seemed to be his evident intention to cross the glacier, but a study of the wild jumble of séracs below appeared to be hardly good enough, for, after wandering around uneasily for a spell, he disappeared in the direction he had come.

While doing the work, we camped at the usual spot beside the pony trail, about a quarter of a mile from the moraine where the ice comes into view. We were there two nights, sleeping rolled in blankets under the trees, and both nights had thrilling experiences with that nocturnal nuisance—the porcupine. Although I had my survey instruments so close to me that I could feel them through the blankets, I only waked in time to save the leather straps from being chewed up.

In the morning at breakfast, spread on a pack cover on the ground for a cloth, a woodland hare leaped between us, directly across the table. It seemed in the last stage of fright, and fled rapidly. A few moments after, along came a fine marten, nosing out the hare's track. It stopped when it saw us, and seemed disinclined to give up the chase. Very reluctantly it turned to one side. Martens are very shy, as a rule, and in thirty-five years of travel in the forest and plain, I have not seen one alive more than half a dozen times.

I have heard it said that there is no animal life to be seen in the Canadian Rockies, but I think it is only necessary to efface oneself.

Observations On Glaciers.

By Mary M. Vaux.

The glacial observations and measurements for the past three years have been carefully followed, and this report brings them up to date.

In 1910 I was given valuable aid by Mr. A. O. Wheeler, and in 1911 the measurements were made by my brother, George Vaux, Jr.

Illecillewaet Glacier.

Conditions during the three years have been similar to those of the two preceding. In 1912 the snow fall in the Selkirks was very small, being but 32 feet 6 inches, and the indications of general recession were very great. This was particularly noticeable on the left where the red rocks were much exposed, the ice breaking away from them in great masses while the bed moraine around the forefoot was greatly increased in area. The whole tongue appeared much thinner, and the very gentle slope of the lower ice was much in contrast to the steep front found on our earlier visits. The crevasses higher up were much steeper and more difficult to negotiate, the whole surface of the ice being dirtier than formerly.

The measurements of the motion of the plates placed on the ice in 1910 would indicate a gradual lessening in the downward flow of the whole ice mass, while the warm summers have greatly increased the shrinkage by melting.

The distance from Rock "C" to the ice for the three years is as follows :

August 21st, 1909, as per last report, 366 feet August 19th, 1910, as per last report, 426 feet August 9th, 1911, as per last report, 531 feet 6 inches July 19th, 1912, as per last report, 615 feet Thus for the three years the total recession amounts to 249 feet 6 inches, an average of about 83 feet per year.

Asulkan Glacier.

This glacier shows great changes also, not only in the surface of bed moraine uncovered, but also in the flattening of the whole of the lower part of the ice mass. The moraine around the tongue is also much changed, many large square blocks of stone having been deposited by the glacier as well as large quantities of other freshly broken stones, many of large size, so that immediately around the tongue the moraine appears as though freshly plowed.

The measurements were difficult to make, as the course of the stream has been diverted to a more central channel, and flows around the marked rock, which cannot well be reached.

Beginning with 1909 the figures are as follows:

Distances from marked rock.

August 20th, 1909……62 feet

August 9th, 1910..... .....183 feet

August 9th, 1911..... .....132 feet 6 inches

July 27th, 1912.....259 feet

It will be seen that in 1911 there was an advance of 51 feet, but this advance was more than overcome by the increased recession in 1912. For the three years, the recession amounts to 197 feet, or an average of 65 feet 8 inches per year.

Victoria Glacier.

This glacier also shows marked changes, in 1912 especially so. The face of ice is shortened by a large deposit of morainal material, under which the ice is nearly stationary. The depression toward Mt. Aberdeen has much increased, almost forming a canon, an ice arch of small size but of great interest being formed, from which the ice is breaking away rapidly.

Distance to marked rock "A.

August 20th, 1909.....151 feet 6 inches

July 25th, 1910.....155 feet

August 7th, 1912.....195 feet

The total recession, including 1911 when no measurement was made, is 43 feet 6 inches, an average recession of 14 feet 6 inches per year.

The Flora Of Strathcona Park.

By James M. Macoun, C.M.G.

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While only about 350 species of phenogamous plants were collected or noted in Strathcona Park in July and August, 1912, they are representative of the whole flora of British Columbia, as all the more important genera are represented, and characteristic plants from every botanical zone except the Upper Sonoran and Arid may be found in one day's collecting. A week spent in Strathcona Park will give the botanist or plant-lover a better idea of the flora of British Columbia than can be obtained elsewhere in the same time. As the whole region is well watered the Arid and Upper Sonoran zones are, of course, wanting and the conditions are so varied in a restricted area that although the flora up to 1,000 feet is chiefly Humid Transition, the Canadian and Hudsonian zones are represented at even that low altitude, and 1,000 feet higher typical plants of the Arctic zone may be found on one side of a narrow valley and not until one reaches twice the height on the opposite side. It is evident then that no successful attempt can be made to divide Strathcona Park into zones, nor can this be done until a contour map is available. In such a paper as this one can only bring together a few notes on the most interesting species seen and, except in the case of trees and shrubs, the representatives of each large order will be dealt with together without regard to habitat or altitude.

Trees and Shrubs.

All the coniferous trees growing on Vancouver Island are to be found in Strathcona Park. Cedar, Douglas Fir, Pine and Hemlock form as fine an example of Pacific coast primeval forest as can be found in British Columbia. While larger trees may be seen elsewhere, the valleys of the Elk River and other streams cannot be excelled for the beauty of their forests, and as neither fire nor lumberman has injured them it is worth a visit to the park to see the trees alone. The Yellow Cedar (Chamcecyparis Nootkatensis) is found at a lower altitude than on the mainland while the Giant Cedar (Thuya plicata) grows in all valleys. A few very fine yew trees (Taxus brevifolia) are seen here and there and are frequently mistaken for the yellow cedar though not at all resembling it. The yew trees along the trails should be protected. The Lodge pole Pine (Pinus contorta), or Shore Pine as it is more appropriately called on Vancouver Island, is found only at low levels and before the park is reached when ascending Campbell River the Western White Pine (Pinus monticola) is mixed with it and soon replaces it altogether. They are easily distinguished by their general appearance and by their cones, those of P. monticola being often 8 or 9 inches long, while those of P. contorta are small. The two hemlocks are sometimes found together, but the lowland species (Tsuga heterophylla) has cones usually not more than half an inch long, while those of the mountain species (T. Mertensiana) are three or four times that length. The Douglas Fir or Oregon Pine (Pseudotsuga mucronata) everyone knows. Spruce (Picea sitchensis) is not nearly so abundant as the Balsam (Abies amabilis). Juniper was met with only in a few exposed places.

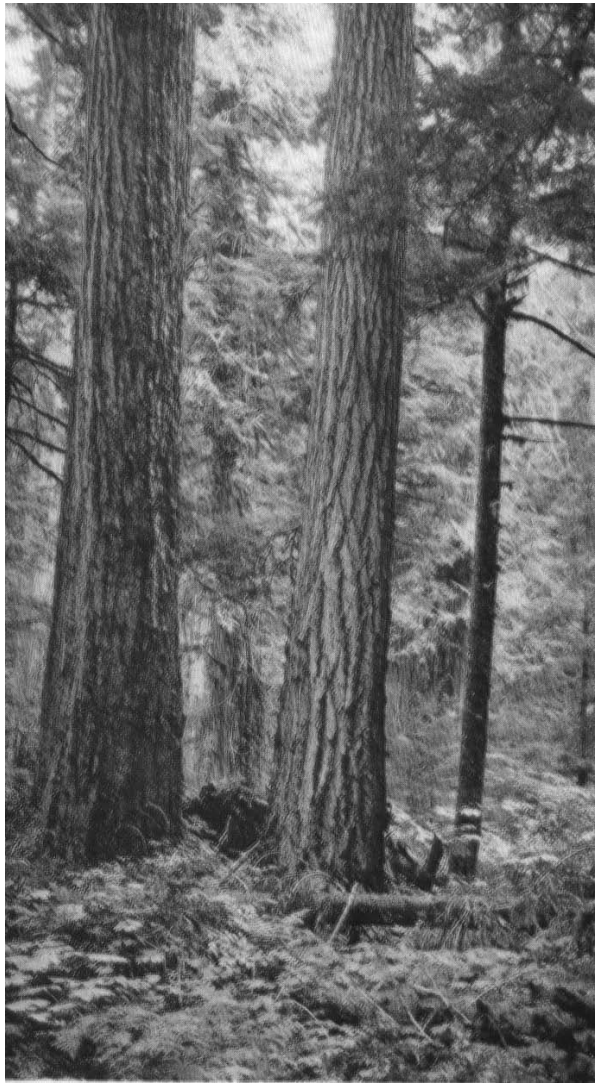
Deciduous trees are rare. The most striking is the Dogwood (Cornus Nutallii), which reaches an altitude of about 2,000 feet. The Broad-leaved Maple (Acer macrophyllum) was noted only along Buttle's Lake, and a few old Cottonwood trees along Buttle's Lake and the Elk River.

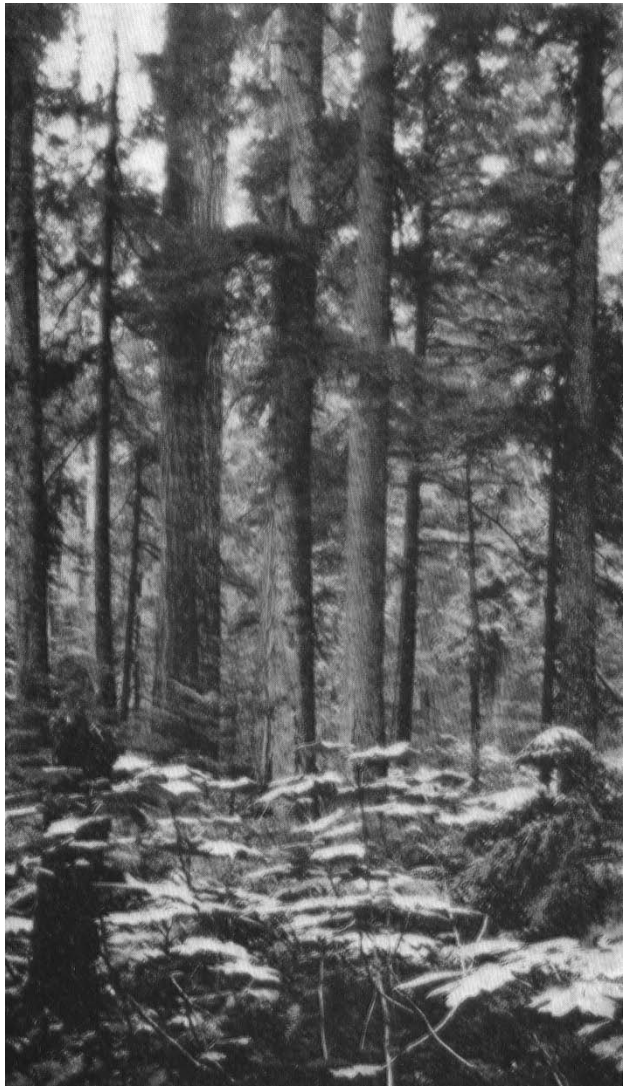
No young trees were seen and it seems certain that these old trees are the remnant of what formed part of a mixed deciduous and coniferous forest, and should fire destroy the coniferous forest, cottonwood will probably again appear. Rhamnus Purshiana is fairly common and ought to be rigidly preserved, as it is fast approaching extinction as a commercial tree. It is from its bark that the drug Cascara Sagrada is made.

As with the trees so with the shrubs, nearly all the species of the Humid Transition Zone are found at the lower levels, and these shrubs make travelling through the forest difficult in many places. Above 2,000 feet, however, the number of species is considerable. Omitting the fruits for the present, the most conspicuous shrubs are: Pachystima Myrsinites, Acer Douglasii, which is never a tree there, Ribes sanguineum (Flowering Currant), Lonicera involucrata, and many ericaceous shrubs. The most beautiful of these are Rhodendron albiflorum and Cladothamnus pyrolaeflorus, which grow ‘together above 3,000 feet. Pyrus occidentalis (Mountain Ash) is usually found above 3,000 feet. P. Sitchensis growing in the valleys, Primus emarginata is rare. Spiraea Aruncus and S. discolor and S. Mensiesii are common. Three species of roses are found (R. Nutkana, R. pisocarpa and R. gymnocarpa), but only the first is plentiful. Amdanchicr florida (Service berry) is rare, and A. Cusickii was seen only once. Ledum latifolium (Labrador Tea), Kaltnia glauca, and Lonicera ciliosa (Honeysuckle) are rare, each having been seen in only two or three localities. The red-fruited Elder-berry (Sambucus caliicarpa) and Cornus pubescens complete the list of noteworthy species apart from the berries which are everywhere.

Berries.

One may camp almost anywhere and find an abundance of fresh fruit. The Blueberry family is represented by all the best species, Vaccinium ovalifolium, V. parvifolium and V. Alascanum growing together on the lower levels and slopes, V. macro phyllum a little higher up, and on the summits of the lower mountains V. deliciosum. A very fine hybrid between V. ovalifolium and V. parvifolium was found in several places, never more than a single bush, but always loaded with wine-colored delicious berries with a delicate bloom and very characteristic flavor. Flowers were not seen, but the leaves and general habit of the plant are those of V. ovalifolium, while the abundant fruit is that of V. parvifolium, although nearly twice as large and a deeper color. This berry is well worthy of cultivation, as, indeed, are all the Vaccinium. Strawberries are seldom seen, and for some unknown reason the Rubus family also, although most of the western species were seen either in flower or fruit. Rubus Chamamorus (Bog-apple) and R. arcticus (Arctic Raspberry) are very rare, though R. nivalis, which the writer had never seen growing before, was fairly common. It may be recognized by its trailing habit and shiny 3-lobed or 3-parted leaves. No plants were seen either in fruit or flower, nor have we any such specimens in the herbarium of the Geological Survey. It is only after a recent forest fire that fertile flowers or fruit are found. Rubus parviflorus (Thimble or Velvet Berry) was common, but Rubus spectabilis (Salmon Berry) was nowhere very abundant. Rubus macropetalus was plentiful near Drumm Lake, but not elsewhere. Ribes setosum (Gooseberry) grows near the tree limit on most mountains. Viburnum pauciflorum (High-bush Cranberry) grows on all alluvial flats, and its bright red berries, with those of the Devil’s Club (Echinopanax horridum) brighten the landscape in the autumn. Bears were feeding on the Viburnum berries in August and as these berries are improved in flavour after being frozen they furnish fruit for the camper when other wild sorts have disappeared. As there are no true bogs in Strathcona Park the low-bush Cranberry is rare.





The Beautiful Forests Of Strathcona Park In The Elk Valley. Photos, F.A. Robertson

Ferns and their Allies.

As is to be expected in a forest such as that growing in Strathcona Park the commoner species of ferns are everywhere abundant. The most interesting find was a new species of Polystichum, which has been named P. Andersoni in honour of Mr. W. B. Anderson who first noted it. It is related to P. scopulinum and P. Lemmoni, but quite distinct from either. One of the most interesting finds was Phegopteris alpestris, which grew plentifully on a snow-slide near the head of Shepherd Creek. This is a characteristic fern of the Selkirk mountains, but had not before been found on Vancouver Island, nor had Phegopteris polypodioides been noted on the island before. A few plants of this species were found by Mr. Anderson. Asplenium viride and Botrychium silaifoliutn were seen in several places and are the only other noteworthy species of ferns. One Isoetes was found in Drumm Lake and all the common species of Club-Moss and Equisetwn in suitable situations.

Grasses, Sedges, Rushes, Etc.

These families are all poorly represented in Strathcona Park, chiefly because suitable habitats are wanting. The meadows and marshes are insignificant in size and the species are for the most part those that are found along streams and lakes everywhere on Vancouver Island. The only interesting grasses are Panicum pacificuih, found at the east end of Drumm Lake, and Poa paddensis at the head of Wolf and Shepherd creeks. Apart from Carices, Scirpus subterminalis growing in Drumm Lake was the only noteworthy sedge. Two species of Carex, new to Vancouver Island, were collected at the head of Wolf Creek, C. illota and C. pulla, and at the same place C. pyrenaica, known from only one other locality on the island. Of the rushes, one addition to the flora of the island was seen, Juncus alpinus var. fuscescens, the other rare species being J. oreganus and J. falcatus var. alascensis.

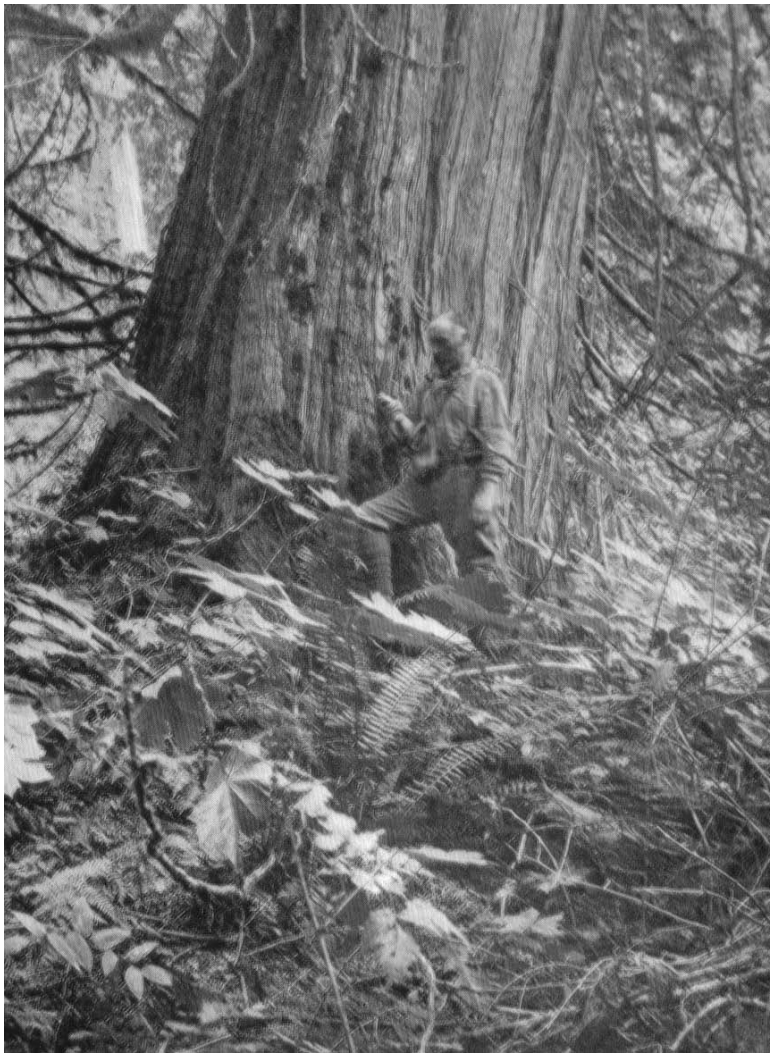
The lakes and slow-flowing streams are very free from Pond weeds (Potamogeton), the three common species being nowhere an impediment to motor-boats.

Lilies and Orchids.

With the exception of Calypso bulbosa, the Corallorhisas and the Habenarias, the orchids are the inconspicuous species of the coniferous forest and not those that would strike the eye of the casual visitor. The genera mentioned brighten the woods and damp open places and there are few British Columbia species that cannot be found in Strathcona Park. While in the Lily family the Alliums, Brodiaeas, Erythroniums and Fritillarias of the southern part of Vancouver Island are altogether wanting. Trillium, Lilium and Clintonia are present as are all the less conspicuous species of the woods. There are many localities in the park to which the genera mentioned above could be introduced, and there is no reason why these and many other species which are indigenous to Vancouver Island but not found in Strathcona Park should not be planted. Veratrum viride (Green Helebore) grows near the source of most Alpine streams.

The General Flora.

As it is not the purpose of this paper to enumerate the species of plants found in Strathcona Park but simply to record the names of the rarer or more striking species, these may be dealt with in a more or less haphazard way with due consideration to their natural relationships, and it may be said here that in a general way the flora, except on the mountains, is not a striking one. This is the case everywhere in a densely wooded region, but with the opening up of the park and the introduction of a few conspicuous species this will be remedied. Though not striking, the flora is a



Giant Cedars Of Strathcona Park In The Elk River Valley. Photos, E.O. Wheeler

most interesting one especially from an ecological point of view, and it will be many years before it can be thoroughly worked up. This is especially the case with respect to the mountains. Only a few mountains were climbed in 1912, and on each of these plants grew that were not found elsewhere. Until all have been botanized, and botanized carefully, any visitor to Strathcona Park may expect to find not only species that have not before been recorded from Vancouver Island but which are new to science.

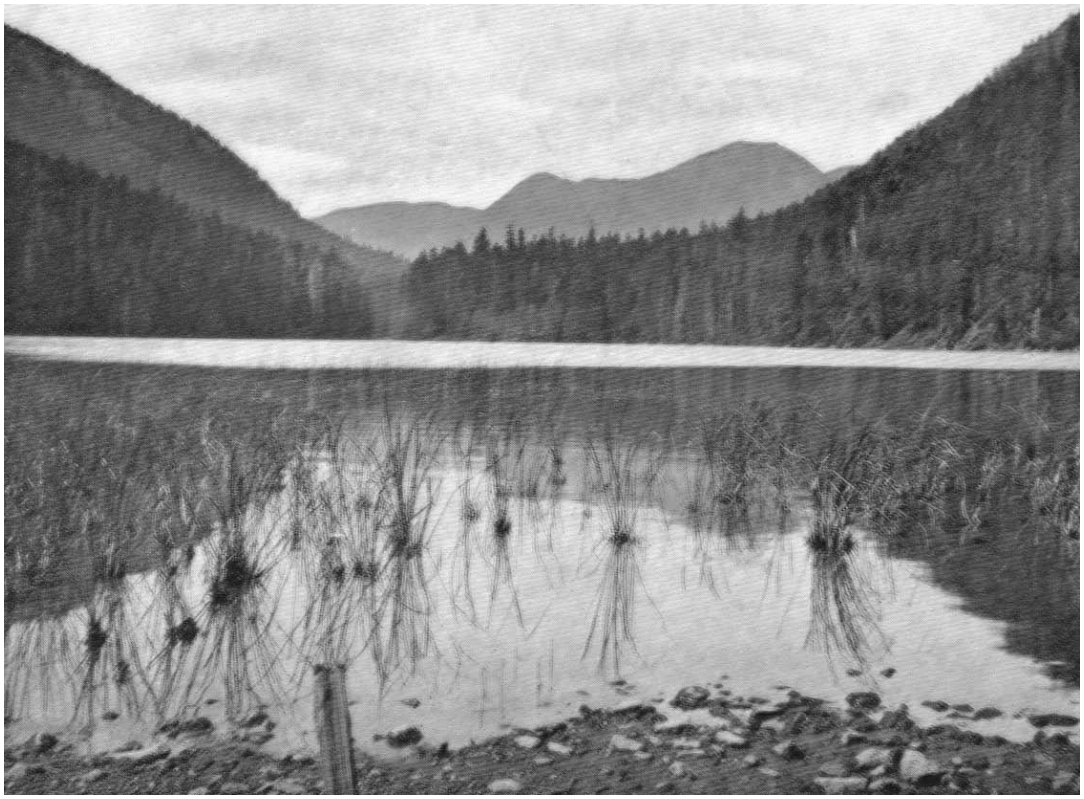
In the Ranunculaceae for example Trautvetteria, Ranunculus and Actaea are the only genera which are common, but Aquilegia formosa (Columbine) in the valleys, and on the mountains Anemone occidentalis, the most beautiful of the wind flowers, Caltha leplosepala, Ranunculus Eschscholtsia and Trollius laxus well represented the order. Dicentra formosa is usually found with Aquilegia formosa. The Rosaceas are represented chiefly by shrubs, referred to elsewhere, but two species new to Vancouver Island were found—Potentilla flabellifolia and P. glaucophylla—both on mountain tops. The only Leyuminaceous plant seen was Vicia aincricana. Arabis, Roripa and Cardamine are the only Cruciferous genera with the exception of Erysimum datum collected only once before on Vancouver Island and an undescribcd Arabis from Shepherd Creek. The violets are Viola blanda, V. adunca. V. glabella, V. palustris. V. orbiculata and V. sempervirens.

Hippuris montana and Epilobium luteum are two very important additions to the flora of Vancouver Island. The former has been recorded from only one other locality in Canada, and resembles more a moss or an Hepatic than it does the common mare's-tail (H. vulgaris). It grows in large moss-like clumps near Alpine springs and is easily overlooked. Epilobium luteum, the only yellow-flowered Willow-herb, was collected by Mr. J. G. Cory Wood south of Buttle's Lake, but will probably be found elsewhere in the park as the upper slopes of some of the mountains afford the conditions under which it and Phecgopteris alpestris, generally associated with it, grow.

The ericaceous plants are well represented even at low altitudes and the mountain summits are covered with the False Heathers (the beautiful pink Bryanthus empetriformis and the white Cassiope Mertensiana) and growing with them Lutkea pectinata and often Phlox diffusa, and in the woods all the western Pyrolas, including the rare P. picta. Perhaps the most striking flower in Strathcona Park is Gentiana sceptrun, which was only seen at the east end of Drumm Lake, but was there very abundant. It was noted that although the flowers were generally closed, they opened after noon on bright days. An undescribed Pedicularis was found at the head of Wolf Creek.

The number of species of Composite was small, but several undescribed species were collected. These are now all in the hands of specialists from whom descriptions have not yet been received. The common Antennarias are A. Howellii at low altitudes, and A. racemosa on the mountains, but a very fine new species was collected near the head of Shepherd Creek and another at the head of Wolf Creek; the former is related to A. Howellii and the latter to A. chlorantha, Eucephalus confinis, an addition to the flora of Canada, was found on several mountains, and is well worthy of cultivation. It was known before from only one locality in the Olympic Mts. At the head of Wolf Creek, the most interesting locality visited, from a botanical point of view, three new species were found, an Erigeron related to E. peregrinus, an Aster related to A. Eatoni, and a Senecio resembling S. ovinus. The other Compositae seen were the common Vancouver Island species.

Though far from complete, the above notes will give some idea of the varied flora of the Strathcona Park. Not much remains to be done along the trails and streams, but until every mountain has been carefully botanized there will be work to be done in this region. The mountains south of Elk River will best repay examination. The valleys are deep and narrow, the snow-fall



Sedges In Drumm Lake. Photo, E.O. Wheeler

The Forested Shores Of Buttles Lake. Photo, E.O. Wheeler

apparently varies greatly from year to year, and it is in places where the ecological conditions are out of the ordinary that the best results botanically are to be looked for.

List Of The Birds Noted In Strathcona Park In July And August, 1912.

By James M. Macoun, C.M.G.

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Strathcona Park was visited after the breeding season of the birds, when their notes were seldom heard, and the following list is, therefore, very incomplete. No birds were shot and some were seen only at a distance, so that in one or two cases the determination may not be correct. This list, however, will give visitors the names of the common species and serve for a basis for future work.

1. Great Northern Diver (Gavia imber).
2. Glaucus-winged Gull (Larus glaucescens).

Only a single gull was seen, probably this species.

3. Merganser (Merganser americanus).
4. Least Sandpiper (Actodromas minutilla).
5. Sooty Grouse (Dendragapus obscurus fuliginosus).
6. Oregon Ruffed Grouse (Bonasa umbellus sabini).
7. White-tailed Ptarmigan (Lagopus leucurus).
8. Band-tailed Pigeon (Columba fasciata).
9. Western Goshawk (Accipiter atricopillus striatulus).
10. Bald Eagle (Halicetus leucocephalus alascanus).
11. Desert Sparrow Hawk (Falco sparverius phalcena).

One bird, probably this species, seen at a distance.

12. Belted Kingfisher (Ceryle alcyon).
13. Harris Woodpecker (Dryobates milosus harrisii).
14. Black Swift (Cypseloides niger borealis).
15. Rufous Hummingbird (Selasphorus rufus).
16. Steller's Jay (Cyanocitta stelleri).
17. Oregon Jay (Perisoreus Obscurus).
18. Northern Raven (Corvus corax prindpalis).
19. American Crossbill (Loxia curvirostra minor).
20. Pine Siskin (Spinus pinus).
21. Oregon Junco (Juncus oregonus).
22. Rusty Song Sparrow (Melospiza cinerea morphna).
23. American Dipper (Cinclus mexicanus unicolor).
24. Western Winter Wren (Olbiorchilus hiemalis pacificus).
25. Red-breasted Nuthatch (Sitta canadensis).
26. Chestnut-backed Chickadee (Penthestes rufescens rufescens).
27. Golden-crowned Kinglet (Regulus satrapa satrapa).
28. Russet-backed Thrush (Hylocichla ustulata ustulata).
29. Western Robin (Planestictus migratorius propinquus).

MISCELLANEOUS SECTION.

Camps In The Altai.

By N. Hollister.

The Altai Mountains have long been known to naturalists and sportsmen as the haunts of the famous Ovis ammon, the largest of wild sheep; and during the past fifteen years have been visited by a number of big game hunters, eager for the wonderful trophies, the horns of the sheep and ibex. I believe these grand mountains would prove equally interesting to Alpine climbers. The impressive vastness of the whole country; range after range of mountains, snowy tops, dense forests, and immense stretches of desert plateaux, all combine to make a personal acquaintance with the Altai a marvellous experience. The great number of unclaimed peaks, the glaciers, beautiful alplands, and sheer rock cliffs, would seem to make the region an especially fascinating one for the Alpine enthusiast with time and means for geographical research.

As usual, we saw the mountains with the eyes of zoological collectors. The time at our disposal throughout the short summer was not great, and we were there to make as large and varied a collection of vertebrate animals as was possible during the necessarily limited stay. This means work, always crowding and never finished, and there is little time for relaxation. My account of the Altai, then, may not conform to established custom for an Alpine Journal article; and my pictures may be lacking in ice, roped climbers, and summit cairns. I shall tell of the best way of reaching the mountains and something of the country as I saw it, but it is to be remembered that I know little of the technical terms of mountaineering, and up to a certain point only are my experiences those of an Alpine climber. We climb to difficult points only when a survey of the surrounding country becomes necessary, or when some animal is to be had which cannot be obtained in an easier way, with less loss of precious time. There is, furthermore, enough rock climbing, snow, and ice in the necessary daily routine to satisfy one whose real work is just beginning when he has returned from his day's tramp, loaded down with fresh specimens, all of which he is anxious to save, and with little delay, that he may be out early after other desirable material which he knows may be had for the effort.

We were accompanied to the Altai by Conrad Kain, of Vienna and Banff, well known to most of the members of the Alpine Club of Canada; and even this enthusiastic mountaineer was, I think, satisfied with the climbing necessary in a successful mountain collecting trip. Conrad looked longingly at many a distant peak, however, which other important duties kept him from ascending; and even the delights of bird and mammal collecting have not entirely weaned him away from his first love, the actual ascent of difficult peaks.

After securing the necessary permits from the Russian government in St. Petersburg, we departed, June 8th, 1912, over the Trans-Siberian railroad for the East. On June 12th we left the train at Novonikolaevsk, where the railroad crosses the Obi River, in Central Siberia; and before evening were embarked on a river steamer for the head of navigation. The river trip is pleasant after four days on the railroad. The accommodations are good and the passing scenes delightful and interesting. June 14th, we saw the first snow, on a 500-foot hill above the river bank, near Barnaul; and the next day, as we neared Biisk, the head of steamer navigation, some fair mountains could be seen in the southeastern horizon. We arrived at Biisk on the evening of June 15th and, after considerable difficulty, found a hotel to accommodate us.

On the morning of the 18th, we commenced the long journey by tranatass to the southward. Tarantassing is not an especially delightful mode of travel. The real tarantass is fairly comfortable for a time, but the ordinary substitute for this vehicle after the first post station south of Biisk is a basket-work buggy in which the traveler sits flat on the bottom or on top of his luggage, with legs cramped in front. In this manner he is driven at a rapid rate up and down hill, and over the roughest mountain roads, whenever possible at full gallop. Three horses are used to each vehicle; the centre one trots and the two side ones gallop or run, and for the first few days one constantly expects to capsize. In fact the "carriage" in which Conrad and the interpreter were riding did turn over one evening about dark, when the driver was attempting an especially brilliant grand entry into a small village.

We were eleven days making the trip from Biisk to Kosh-Agatch by tarantass over the "post-road"; but we were delayed two days at Ust-Inya, a small village built, as usual, around a large church, and the trip can doubtless be made under pressure and with good luck in nine or ten days. Ordinarily we made from 50 to 80 versts a day, and, except in two instances, spent the night in a village.

The first day's journey south from Biisk is over the southern edge of the great Siberian plain, then come four days of forested mountains, a stretch of semi-barren mountains, more forests, and then a gradual drop down on to the Chuisaya Steppe, where Kosh-Agatch, the last Russian outpost, is situated at the forks of a small stream in the otherwise flat waste, at an altitude of about 7,300 feet.

Near Chibit, the second important post before reaching Kosh-Agatch, we had a good view of the Kurai Mountains. These mountains are, perhaps, the finest we saw, and would, I am sure, prove intensely interesting to an Alpine man. They are beautifully snow and glacier-capped, and must be fully twelve or fourteen thousand feet high. They should be fairly accessible from Chibit, but are, I was told, very difficult of ascent, and I much doubt if the peaks have ever been "captured" (I have seen this term used in the Alpine Journals so suppose it is the correct one). We were told that ibex were to be had in these mountains. Chibit is not over twenty days from London, with good luck in travel.

South of Chibit we saw the first yaks. The herds contained a large number of variegated animals, black and white, gray, brown and black. We saw fully two hundred in one herd and it was an interesting sight. We also saw many camels from here southward. The day before reaching Kosh-Agatch we surprised at close range on rounding a hill an immense lammergeyer, the largest bird of flight I have ever seen. It seemed to have considerable difficulty in rising and our Kalmuk drivers attempted, childlike, to capture it, and looked exceedingly sheepish and disgusted when the huge bird flapped away.

The last part of the tarantass journey takes you through the country of the Kalmuk. The people of this native tribe, unless Christianized, as are many communities along the post road, live in felt tents and follow their herds of horses, goats and yaks from place to place. The real "wild" ones are picturesque people and excellent horsemen. They remind one in many ways of the North American Indians.

At Kosh-Agatch, where the road ends, we engaged a local guide in addition to the Kalmuk packers we had brought from Ust-Inya, and reorganized our outfit for the completion of our journey, by pack train, to the country of the famous wild sheep. We found the Kalmuks to be exceedingly good packers, and our collecting chests and entire outfit were placed on the horses' backs without a grumble.

A Characteristic Village Landing On The Obi River, Siberia.

Tarantassing: A Stop For Repairs.

Our Collecting Camp In The Tchegan-Burgazi Pass. Photos, N. Hollister

The first night south from Kosh-Agatch is necessarily spent on the open, wind swept steppe, and we had our first experience in making tea and cooking with a fire of "tezek," dry horsedung, which the Kalmuks gathered in bags for our use. Fortunately we had provided ourselves with iron tent pegs or we should have been unable, in the violent wind, to pitch our tents with any security.

The next day brought us to the foothills of the Little Altai, the border range between Siberia and Mongolia, and into the Tchegan-Burgazi Pass, near the Mongolian frontier. Conrad and I, with one Tartar camp man, pitched a comfortable camp on a small stream known as Tschornia (Black) Creek, one of the sources of the Tchegan-Burgazi River, at 8,300 feet, and close to the "last timber," a few scattered larch trees. The rest of the party pushed on, the following morning, for big game on the Mongolian slopes, which are absolutely devoid of brush or trees.

There was a fine snow mountain at the head of our valley, part of the frontier ridge, which must have been over 12,000 feet high, and just above camp the stream bed was blocked with ice. The nights were cold and the days usually snowy. During our twenty-eight days in this camp we had only two or three entire days without rain or snow. Severe electrical hail storms were frequent, and I have never seen such lightning, nor heard such thunder as accompanied the terrific beating of hail.

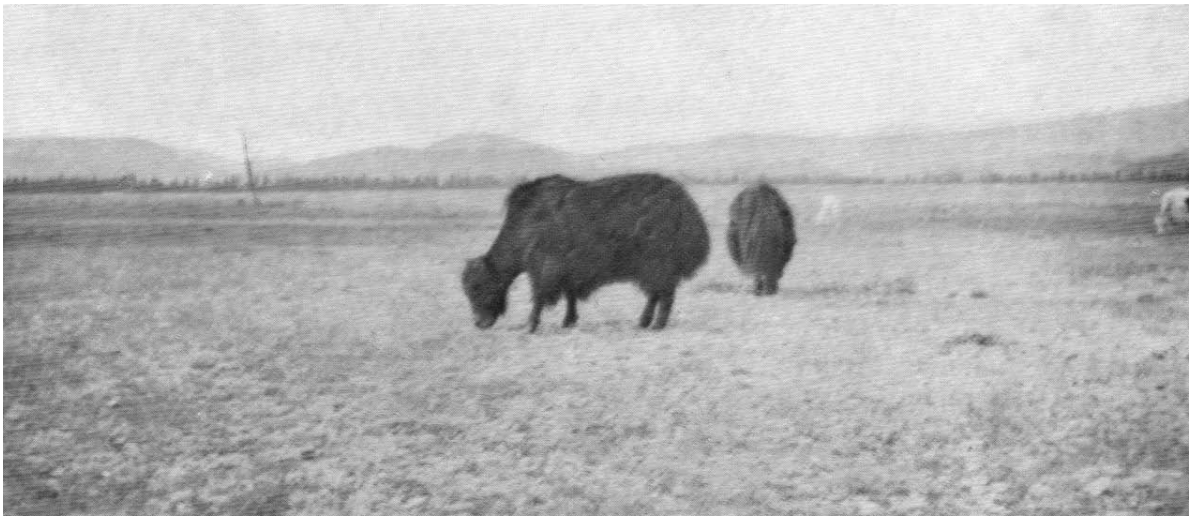
Conrad, as ever, was tireless and was out in the mountains from morning till night, trapping and shooting mammals and birds for our collection. There were ptarmigan and hares, and the stream beside our tent was full of grayling, which our camp man, with the assistance of a visiting Kirghiz boy, captured by means of ingenious traps. Some of the grayling were of very large size and were a great addition to our necessarily restricted fare.

This is the country of the Kirghiz, that truly nomadic desert people of the Great Mongolian Waste. We were visited in camp by several parties, and these marvelled greatly at our traps and guns and the specimens we were preparing. They were astonished to see a duck killed on the wing and, apparently, had never seen a shot-gun. We found them pleasant and kindly people, though our Kalmuk and Tartar men constantly warned us of their thieving ways and carefully watched the hobbled horses at night. The Kirghiz are said to be the most wonderful horsemen in the world, and I was well satisfied to think so after witnessing their ordinary feats of horsemanship. They fairly live on horseback, and the tiny children are placed on horses in the morning for a day with the flocks of sheep and goats. Their principal occupation, aside from the care of the stock, seems to be in the pursuit of the "sunk" or marmot. Great bales of the skins of this animal are traded at Kosh-Agatch.

Notwithstanding the inclemency of the weather, we enjoyed our stay in this desolate canyon. The extensive alps above our camp were carpeted with beautiful flowers: forget-me-nots, gentians, and all the characteristic species of the northern alplands. Edelweiss grew in profusion about our tent, much to Conrad's delight. The rocks on either side of our valley were tenanted with pikas, and always, barring the extreme scarcity of wood, there were conditions comparable to those in the northern Rockies. Birds and mammals were abundant and we reaped a rich harvest. Conrad's help was great. A gigantic owl, of a species rare in collections, visited a tall rock spire above the canyon wall two nights in succession. Conrad climbed to the tip of this pinnacle, the next day, and placed a wolf trap in proper position. Next morning I was awakened by his famous Alpine "yell." I rushed out of the tent and looked almost straight above me, to see him balanced on the spire with the wings of the monstrous bird wrapped by his coat, preparatory to the descent.

We sometimes sent our camp man out on the steppe to buy a sheep from any roving band of Kirghiz he might find. On one occasion he came back much the worse, though exceedingly good

Kosh-Agatch, The Last Russian Post In The Altai.



Yaks (Poephagus Grunniens) In The Siberian Altai. Photos, N. Hollister

natured, from too free use of "koumiss," an intoxicating drink made by the natives from fermented mares' milk. He was all right on his horse's back, but in a sorry plight when obliged to dismount.

Toward the middle of the month we were cheered by the arrival in camp of the head packer, who had ridden across the range from the main party in Mongolia, and brought us a generous supply of meat of the wild sheep. The letter accompanying it, he showed me, by much pantomime and a hole in his pocket, had been lost. He made me understand that already they had killed three large rams and one ibex.

Heavy rains and a day or so of warm weather so melted the snow and ice above us that on July 22nd, between eight and nine o'clock at night, the small stream near which we were camped became a raging river and overflowed its banks. We were obliged to move our entire outfit in great haste to a safe place, near the canyon walls. We worked like beavers for an hour and were glad to crawl, with wet clothing, into wet blankets, and rest. In the morning we selected a better location and moved again. Conrad later in the day discovered an immense boulder, loosened by the heavy rains, which had moved considerably and barely missed dropping directly on our tent. Had the rain continued far into the night, we would have been completely buried by an avalanche while we were blissfully sleeping away our fatigue. We were careful to pitch our camp the second time away from dangerous cliffs.

On July 26th, the sporting expedition returned and, much to our delight, brought us four immense rams, two ibex, and a gazelle. The sheep are indeed wonderful trophies, and make a large Rocky Mountain ram look like a pygmy. I saw one head, a single horn of which measured over sixty inches round the curves.

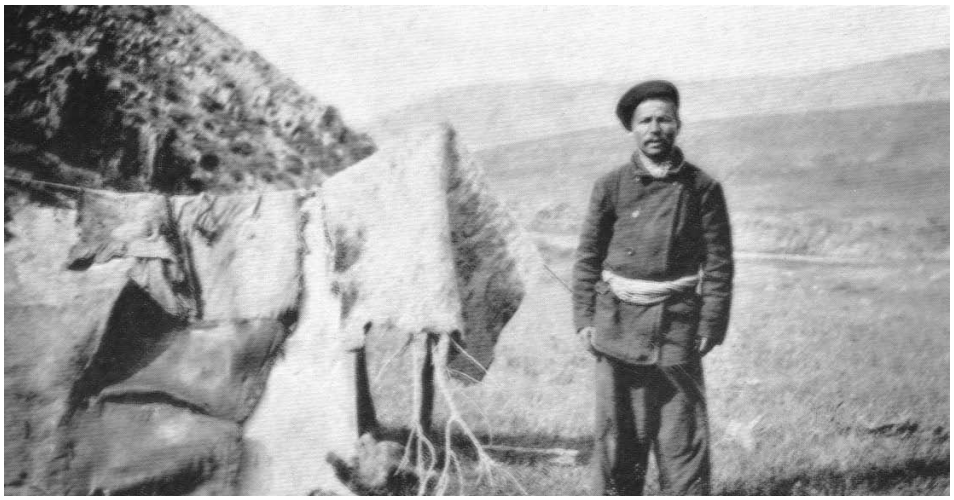
The united party now returned to the centre of the barren steppe for a gazelle hunt, and afterwards retraced the trail and road to the heavily timbered mountains north of the desert. In the desert mountains we had all the time been looking forward to this "camp in the timber," and the comforts of plenty of wood and shelter from the wind and storm. What we really experienced was a week of the most abominable weather, continuous rain and hail or snow, and very cold. Conrad had all summer been promising us his celebrated story of the "million guide," when we should have our first good-camp fire. Regardless of the rain we one night heaped logs until we had a tremendous blaze and gathered around to hear this story, familiar to many of your Club members, and always good. This was voted the best evening of the trip.

Visitors to the Altai will do well to take an interpreter. On the railroad, if provided with tickets from St. Petersburg or Moscow, German does very well; but, after leaving the main routes of travel, Russian becomes a necessity. I am sure our interpreter well paid for his cost, both in comfort and saving. The Russian interpreter also becomes a necessity in communicating later with Tartar Kalmuk and Kirghiz. The horse I was riding on the Chuisaya steppe was very much afraid of some camels. The owner began to gesticulate and talk in his own tongue, and when the message was finally brought to me through four languages, I had only the bare information that this was so. I had been immediately aware of it, and what I really wished to know was what to do about it. Rather than wait for this information by this round-about method, I slipped off until we had passed the strange looking beasts.

The chief food-stuff of the natives, and of the Russian settlers along the post-road, is tea. When you arrive at a house you are given the "best room" and the welcome samovar is immediately brought in. There is plenty of black bread, and sometimes eggs or fowls, but the only necessity, apparently, is tea. The natives drink great quantities of it, at all hours, in camp. It comes in large, black, pressed bricks; and is of very good quality and certainly stimulating, but how it answers

Breaking Camp: Showing Heads Of Altai Sheep.

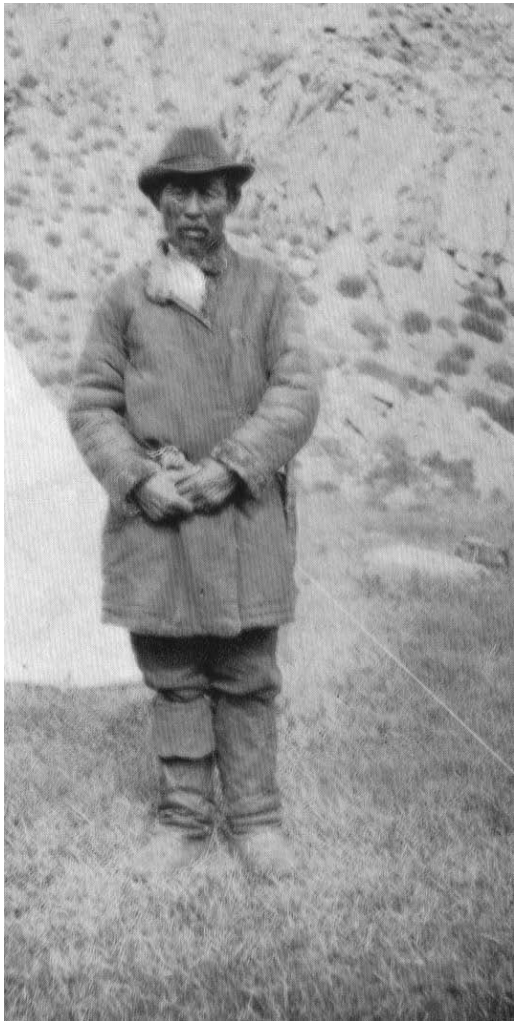
Kalmuk And Kirghiz Packing Our Trophies



Our Tartar Camp Man And His Tent. Photos, N. Hollister

A Kirghiz Marmot Hunter, With Flint-Lock.

Our Camp On Tschorna Creek, In The Frontier Altai.



Our Kalimukhead Packer. Photos, N. Hollister

for such a large per cent, of their nourishment I cannot understand. Coffee is very little used. The natives hardly knew of it and, apparently, did not care for it or for cocoa. If given lumps of sugar they ate them in small bits, dry, between sips of tea from the lacquer bowls.

To the southwest of our camp on the Mongolian frontier, are the Muss Ta Mountains and the Gobi Altai. The former are glacier mountains and look wonderful and interesting. I was sorry our limited time and rush of work did not allow us to investigate this range, as well as the Kurai Mountains; both of which are much more of the style beloved of Alpine Club people than are the immediate ranges in which we explored. Perhaps some day I may visit them. I hope so, but not to climb their glacier peaks. That I leave to those enthusiastic Alpine Club people who, strangely enough, prefer first ascents to new birds and mammals.

The Alpine Club Of Canada In Strathcona Park.

By A. O. Wheeler.

To explain how an Alpine Club party came to make the expedition and what its objects were: During the course of the winter meetings of the Vancouver Island section the possibility of a party going in to explore and report on the Alpine attractions of Strathcona Park had been discussed. The difficulties and cost of transportation in this gloriously wild, but as yet almost inaccessible district had proved the chief obstacle. Much discussion ensued, the difficulties looming larger as the details developed. However, the chairman of the local section of the Club, Mr. W. W. Foster, the very popular Deputy Minister of Public Works for the Province, bade us not be discouraged, and intimated that assistance by the Government might be obtained, an expert opinion of the Alpine features of the Park being desired. As a result of negotiations it was decided that transportation and other facilities would be furnished to a party limited to twenty, at a cost within the means of those taking part. Without such assistance it would have been impossible for us, and I now wish to tender the thanks of the Alpine Club to Sir Richard McBride and the members of his cabinet for providing an opportunity that I feel sure will have a beneficial effect in placing before the public of Canada and other centres of the world the attractions of one of the most delightful scenic parks of the entire Dominion. The Park abounds in all the attributes of Nature in its primeval condition: Giant forests; sunlit lakes miles in extent, bounded by bold rock shapes and overshadowed by snowy peaks reflected in their placid waters; rushing torrents with deep pools, where trout float lazily among submerged branches; timbered valleys leading to deep gorges, above which are snow-flecked passes beneath noble peaks rising in ragged ridges and steep spires; lace falls leaping from pure white glaciers ; and tiny lakelets of blue and green that sparkle like jewels set in velvet, or else lie above the timber-line in brown rock basins with the winter snows reaching to their very margin; the whole awaiting only access by well-built roads and pony trails for the many thousands to whom the fearful grind of modern civilization renders such opportunities a vital necessity.

The Alpine Club party numbered sixteen. It was accompanied by Mr. J. G. Wood, the Member of Parliament for Alberni district. On reaching Campbell River, the nearest port of call, we found ourselves in the hands of Mr. R. H. Thomson, Chief Engineer of the Park, who had been requested by the Government to look after the party; and well he did it. I have heard Mr. Thomson say that there were hitches in his arrangements, but, if so, they were not apparent. To us everything went along like well-oiled machinery. There were no delays and we were always on the move. The food, to old campers such as we were, was a continued feast, and to his principal chef—Jones—I

take off my hat as a king among camp cooks.

I have learned since that the tremendous appetite of the Alpine party was the cause of a serious shortage when it had left. I can quite believe it, and appreciate the perfect and unselfish hospitality that allowed no indication of such a possibility to appear while we were present, in a tract of country where food supplies are brought in with great difficulty and at the expense of much arduous labour. We wish to express publicly our sincere thanks to Mr. Thomson, to his chief assistants and to his staff for the very able, courteous and delightful manner in which one and all contributed to the business we had in hand. Mr. Thomson, himself.

was not only a guide, philosopher and friend to us, he was more,—a father to us—in his wise forethought for all possible contingencies, and the great fund of instruction which he always readily placed at our disposal.

We found that in conjunction with the railway company then locating a line through the Park, pony trails had been pushed forward for our use, and the ease with which we were able to travel to and fro showed contrast in a marked degree with the difficulties encountered by the Hon. Price Ellison two years before. Space will not allow me to record here all the features of the Park, and it is only my intention to deal with the Alpine aspect at the present time.

From Campbell River travel was by waggon and on foot seven miles to Mclvor Lake; across the lake by a twenty foot canoe; then three quarters of a mile by trail to lower Campbell Lake. Arrived here the Forbes and Honour Transportation Company conveyed the party by motor launch and canoe to the head of the lake and some distance up the river to a point known as the British American Timber Company's Landing, in all nine miles. Lower Campbell Lake showed a bright sunny sheet of water surrounded by low timbered hills. It is seven miles long and from one to one and a half wide. About the centre a small island near the northern margin breaks the monotony and gives a delightfully picturesque effect. It is not difficult to picture the lake shores dotted with red-roofed cottages and to see canoes and sailing skiffs gliding over the sunlit waters, when it shall have become the summer home of wanderers from the cities of Vancouver Island and elsewhere. From the B. A. T. Landing eight miles of excellent pony trail led to Upper Campbell Lake and another mile by canoe to Warnick's Camp, twenty-seven miles from Campbell River; pretty fine connection for a day's travel through such a difficult country.

Next day by motor-canoe five miles to the head of Upper Campbell Lake, another charming little sheet surrounded also by timbered hills, now rising more massively. In the distance, beyond the head of the lake, a striking sharp peak rose in mid-air with a small glacier flowing down its northeastern slopes. This, Mr. Thomson spoke of as the Matterhorn of Strathcona Park, and he dared the Alpine Club to make its ascent. We replied: ''Lead us within striking distance." The answer was : "I will."

Following a slough at the southwest corner of the lake for a mile we came to a landing from which a most excellent trail led first through a low Cedar flat, thickly covered by dense windfall; some of the logs cut through for the passage of the trail rose in thickness above the height of a man and showed rings of annual growth that must have given them an age of much more than a thousand years. Then along the hillside and, leaving the flat, into as magnificent a Fir and Cedar forest as can be found anywhere. At the point where the Cedar flat is located the sides of the valley of Upper Campbell River are of steep bluffs and benches forming a sort of wide box canyon. Mr. Thomson explained that this canyon was likely responsible for the heavy windfall of Cedar timber. The hot air from the enclosed space rises vertically and is replaced by a fierce rush of cold air down the side of the canyon which has doubtless blown down most of the trees. This physical

phenomenon is known as a ‘’Woolly” from the effect it has on a water surface.

The Cedar flat is some miles northeast of the confines of the Park. It was pointed out how useful it might be made when cleared as a holding ground for elk, deer, buffalo or other animals of that nature that might eventually be placed ‘within the Park. Mr. Thomson stated that, in his opinion, the boundary should be extended to embrace the extreme southerly end of Upper Campbell Lake, and the mouths of Campbell and Elk Rivers, and showed us a rock bluff on the south shore from which he thought the boundary line should be drawn. The expediency of converting the Cedar flat into a grazing ground is well in the future, but there is no question but that it would be a very valuable adjunct to have direct access from Upper Campbell Lake to within the confines of the Park, and such access would be a very important factor in facilitating the travel to and in it.

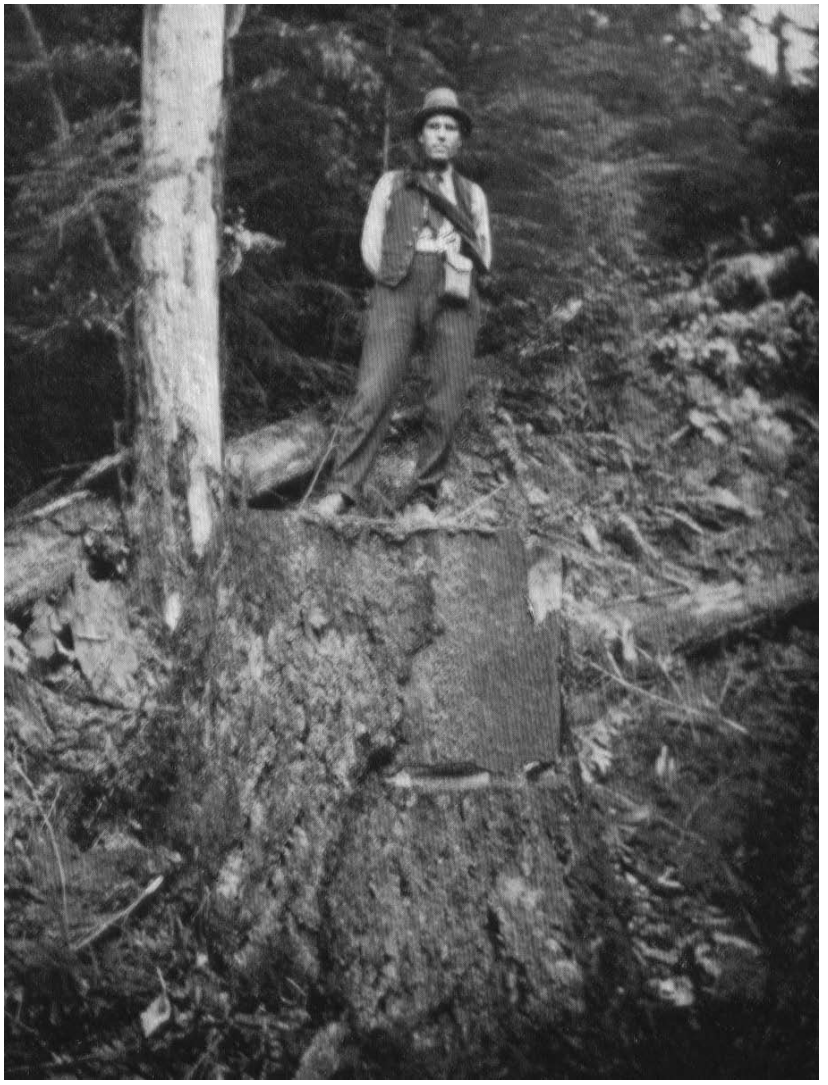
As stated above, the day’s tramp led through some eight miles of magnificent forest,—so magnificent that I have no hesitation in saying that a motor road leading amidst its depths would alone be a sufficient attraction to make a visit to the Park worth while. I have never before seen so unique an area of timber. Groups of Fir and Cedar grew to twelve or more feet in diameter; enormous, isolated trees were here and there, and so dense was the shade they cast that undergrowth was sparse and the ground open and mossy. Huge Devil’s Club reared its wonderful fan-shaped leaves ten feet into the air, and the sun, glinting through the openings, created fairy glades that looked most like a scene from wonderland. To the illusion was added a weird collection of toadstools: some red, some blue, some brown, some white, all of shades quaint and odd, quite in keeping with the eerie surroundings.

We crossed the north branch of Elk River up which the way lies to Crown Mountain, then crossed the main stream to the south side and finally crossing the south branch came to Lewis’ Camp, where the divided parties reunited and all spent the night.

Early next morning a party of four Alpine men, with packs on their backs, struck up the valley a distance of five miles, bent on a reconnaissance to ascertain the best means of reaching the Strathcona Matterhorn. Mr. J. M. Macoun, Assistant Dominion Naturalist, was here camped close to Drum Lake, a delightful little double lake of bright blue, nestling in a hollow of the valley, surrounded by bold steep heights rising in more or less timbered rock ledges. It was the intention to move the entire party to this spot later in the day. Meanwhile the advance guard climbed to 3,800 feet on the long timbered ridge between the Elk Valley and that of Drum Lake, to where a bare rock point formed a natural observatory. Almost opposite, across the Elk River, rose the Strathcona Matterhorn. It looked a nice rock peak rising above a small, well crevassed glacier. Through the glasses the ice looked very clean and no moraines were apparent, so it was thought the rock must be good and solid, which proved to be the case. At the head of Elk Valley stood another fine rock peak with a very jagged ridge. It looked enticing, but the gauntlet had been thrown down, and it was decided to attempt the Matterhorn peak. By the way, Mt. Assiniboine, some twenty miles southeast from Banff, is generally known as the Canadian Matterhorn, so it was necessary to find a more suitable name for the peak in question. As it stood close to the head of the Elk Valley and rose sharply, seen from our point of view, we decided to recommend to the Geographic Board that it be known in the future as “Elkhorn.” Some distance below the glacier the stream from it broke over a ledge and presented twin falls of great height, that would undoubtedly prove very striking upon closer acquaintance; a steep watercourse below the falls, reaching to the Elk River, showed an obvious line of ascent.

Having sized up the route, it was decided that only those who could carry their bedding and three days’ provisions could go. Mr. Thomson had said that it would take us three days, and then

Tyee Salmon Caught At Mouth Of Campbell River By Miss J.L. McCulloch



“Dave” In The Lumber Woods Of Campbell River.

we could not get there, so it was up to us to make good.

The following morning at 8.30 a.m., nine, all men, pulled out with packs on their backs, rope and ice axe. Macoun, who has wonderful foresight, had decided some days before that this would be the peak of our selection, and had blazed a good line of travel up the Elk Valley for three miles, which helped us greatly. Arrived at the watercourse, difficulties began. In the distance it had looked quite simple. It was now found to be blocked by huge boulders and criss-crossed in every direction by fallen tree trunks of no light proportions. A rock canyon with vertical sides soon forced us to take the hill slope, very steep and densely littered by fallen tree trunks, the result of a recent bush fire. The sun beat down and the packs grew leaden. On we toiled, perspiration oozing from every pore. Wilson remarked in his quaint way: "I don't see much difference between this and work." "You'll find out when pay day comes," retorted Hart. At 1.20 p.m. we had made 1,400 feet and stopped for lunch and a rest, altitude above sea level 2,400 feet. From now on we kept the watercourse and were soon in the blessed shade of the green timber and directly below the falls. They are very fine, of the kind known as "lace" falls, and leap in two broken drops from 800 to 1,000 feet. We tried the precipitous ledge over which they fell, but were forced to the right into a smaller watercourse leading to a 'high saddle. A traverse to the left below steep cliffs brought the party at 7.55 p.m. to a broad open ledge, carpeted with pink heath and white heather, at an altitude of 4,660 feet. Wood and water were plentiful and camp was made, each rolling up in his blanket under the stars where his fancy pleased, having first partaken of a glorious supper. The roar of the falls furnished a soothing lullaby, which gradually grew fainter, then ceased, and it was to-morrow, with a faint alpenglow illuminating our peak.

Oh, what joy to climb without those leaden packs; our feet had wings. The rocks were hard and sound. Ridge followed ridge, always rising. Alpine flowers grew in the grassy patches. In the south and west, peak on peak showed clear, with snowfields and small glaciers between. Near the head of Elk Valley a small circular lake, some eighty acres in extent, showed like a jewel, a rich sap green in colour. Down a steep rock face, across a snow-crested col, three hundred feet of a grand rock climb, a traverse below an extended bed of snow, lunch, step-cutting, up a steep ice slope, a tiny snowfield, another three hundred feet rock climb, a delightful little chimney, a final stretch up broken rock, and at 2.10 p.m. we stood on the summit. The barometer showed an altitude of 7,250 feet. Three cheers for the Alpine Club of Canada; three cheers for our leader, my son; three cheers for the new Alpine fields, as yet unconquered, that lay before us. The contents of an emergency brandy flask served to christen the peak "Elkhorn"; we wrote a statement of the climb and, in order of seniority, each signed; the statement was placed in a carefully sealed tin tube, which, in turn, was placed in a stoneman erected on the highest point, and conquest was formally recorded on behalf of the Alpine Club.

Southwest lay a deep trough of which we could not see the bottom. In this it was assumed lay Buttles Lake. Near its head was a high peak with a snowfield and glacier on the northern side. The peak was later seen from the lake to stand out prominently on the south side of Wolf Creek. Most of the snow-clad area seemed to lie in the southwest quadrant. I counted fifteen fine peaks, of which several seemed higher than that on which we stood. This section will furnish good exploration and climbing, when means of access are available. The atmosphere was heavy with bush fire smoke, and, miles away, a little west of north, the two peaks of Crown Mountain showed dimly. To the east and west long timbered ridges separated a maze of valleys filled with dense forest growth. Six sheets of water were in view, three of which were of large dimensions. One to the northeast was undoubtedly Upper Campbell Lake, another to the northwest, Muchalat Lake,

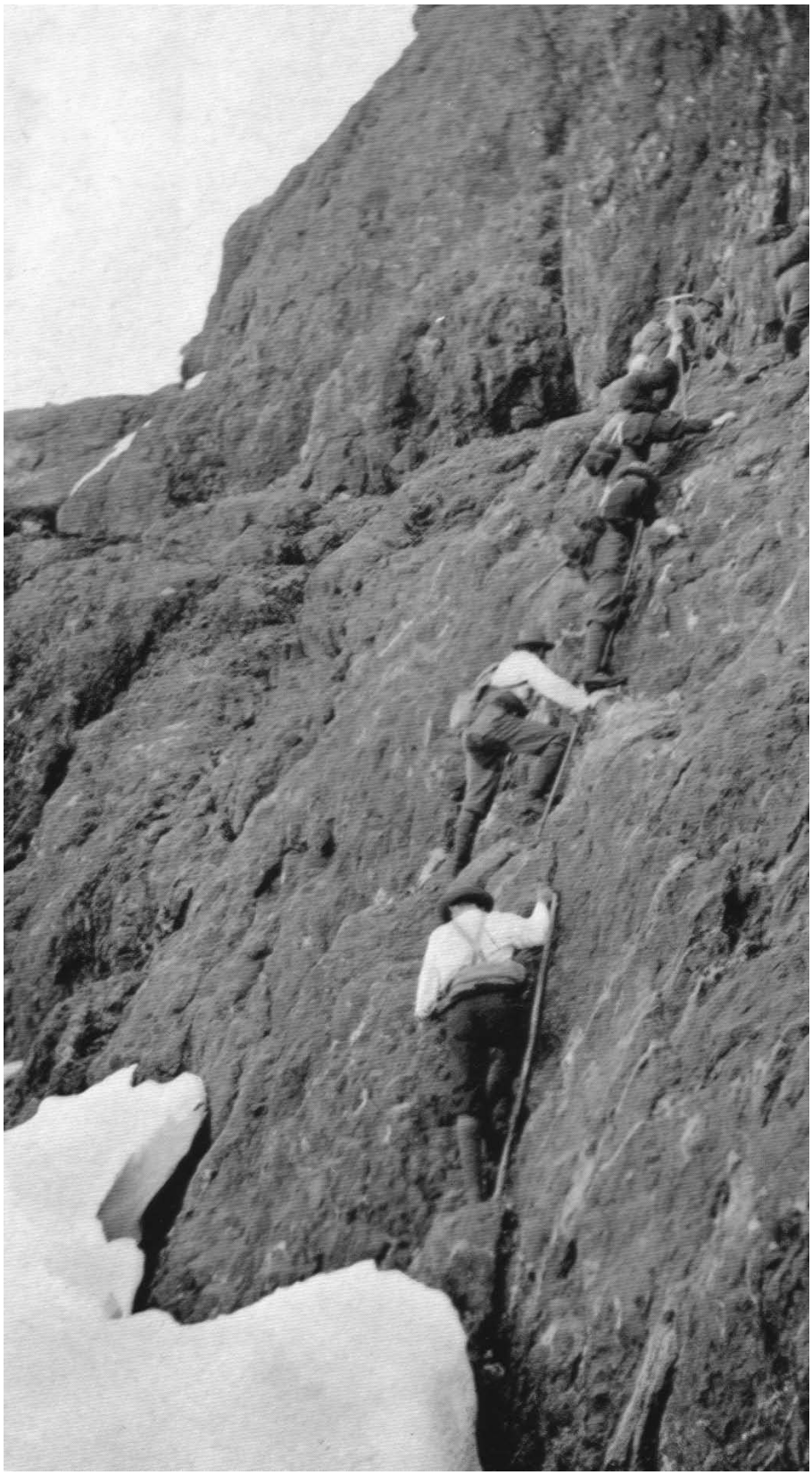
one close by to the west probably Doners Lake, and, quite a distance beyond it, a little further south, the end of Muchalat Arm. The other two were the lakelet at the head of Elk Valley and just above timber line, across a deep valley to the east, another sky blue lakelet. In addition, small highly coloured ponds were seen glistening amidst the trees in the nearby valleys. As in the larger parks of the Main Range of the Rockies, these gloriously coloured lakes are one of the principal features and attractions. In the case of the larger ones, such as Buttles Lake, they resemble inland lochs where bold rock promontories indent the shore line, where tributary glacier-fed torrents form delta-fans and splendid primeval forests line the shores with a setting of deep green, and clumps and single trees rest on the precipitous cliffs and sharp, knife-edge crags, the wonder being how they ever gained a root-hold. At early morn and late eve, when the winds have died down and the silver-tipped wavelets have ceased to chase one another, the clear glassy surface reflects a world of wonders upside down, and it is hard to say where land and water meet.

Judging by the position we occupied with regard to Crown Mountain I should say that a considerable portion of the Alpine area in view lay within the confines of the Park and is worthy of close attention as an attractive feature. It is a matter for serious consideration as to whether it would not be wise to extend also the Park boundaries on this side, so as to include more of the Alpine area. To those who have studied the wide distribution of snow-capped, glacier-lined peaks throughout the wonderful Province of British Columbia, it may not be a surprise to find a similar area in this fertile island which forms the most western portion of it; and yet it was only the exploratory expedition of the Hon. Price Ellison, and his enthusiastic report of it to the Provincial House of Parliament that has opened our eyes wide to its tremendous value as a scenic resource.

A few apparent facts came forcibly to our notice: The peaks seemed to be formed of rock of volcanic origin; the rocks are igneous and, judging by our experience on Elkhorn, will supply climbing of the very best kind, where hand and footholds are safe and sure, and excellent chimneys, loved of all good climbers for the test of prowess they afford, are many; the whole formation seems to have been subjected to severe glacial action in a long ago age; there are few, if any, alplands, or high mountain meadows, such as are found in the main range, and consequently the profuse alpine flora is missing; where in the main range these alps would be, deep water-worn gorges are found at the base of the peaks; the mountain goat is not seen on the crags and the solitudes are unbroken by the shrill resounding whistle of the hoary marmot or whistler. It is likely that both are absent for obvious reasons, and that both would thrive if imported to the mountain regions of the Island, thereby adding greatly to their interest for Nature lovers, to whom the live wild animals of the heights are a source of joy.

Mountaineers detest long stretches of windfalls and extended travel through forests of semi-tropical luxuriance. They like to begin at the alplands that border the bases of the rock peaks. It would, therefore, be necessary to provide good trails for ponies and for walking, in order to get near where comfortable, well-kept shelters would have to be provided for visitors to stay while sojourning amidst the snow-clad peaks. A good trail up the Elk Valley, leading to the pass at its extreme head, would make an excellent beginning, and would open up an alpine area of considerable extent. It is a country of forests, and there is little if any natural horse feed; all such would have to be imported and would undoubtedly make the use of ponies difficult and costly as compared with other sections of mountain areas of the Province.

A return by the party was now made to the south end of Upper Campbell Lake, from which a tramp of eight miles over a splendidly built trail brought us to the north end of Buttles Lake. From this point a motor skiff and towed canoe took the party twenty miles down the lake to



Three Hundred Feet Of A Grand Rock Climb.

Robins' Camp, where a splendid supper and camp fire had been provided. At the camp fire most hearty resolutions of appreciation and thanks were passed to the Provincial Government, to our absent Chairman, Deputy Minister Foster, whose skilful guiding hand had been most apparent throughout, and last, but by no means least, to Mr. R. H. Thomson for his paternal care and great executive ability in the conduct of the expedition, and to all his staff of fine fellows, not forgetting the camp chefs, for their cheerful and unselfish labours on our behalf. All were voted jolly good fellows and there was none there to deny it. A return was made by moonlight, five remaining, who were about to proceed over the Price Pass, and so to return home by way of Alberni.

Buttles Lake is extremely beautiful, chiefly on account of its bold setting and the striking rock promontories that constitute its irregular shore line. The numerous streams that flow into it from the south and west provide splendid vistas of snowy peaks. Unfortunately, as the Park boundaries now stand, the northern end, which is very beautiful from a scenic point of view, lies without. A readjustment of the boundaries as indicated above would remedy this. It would seem to be very desirable that the entire lake should lie within the Park. It abounds in fish, and excellent trout of a fair size can readily be caught at the mouths of the various streams. Good fishing also is had throughout the length of the Campbell River, and in the several lakes to which it expands. The supply should be carefully protected and suitable measures, such as local hatcheries, established to maintain it. If this is done successfully the fishing alone will always prove a good drawing card when suitable hotels are provided to take care of the many disciples of Isaac Walton that would flock to the region.

The party of five who remained to go over the Price Pass were Mr. J. G. Wood, M.P.P., Captain and Mrs. MacCarthy, Mr. J. O. Frind and the writer. They were accompanied by Mr. Ben Lewis of Mr. Thomson's staff as guide and a packer named Paul, a man who though he carried a fearful load over fearful places was never content unless he could secure part of every one else's load.

I cannot now describe this route in detail. We carried everything on our backs and slept under the trees for five nights, through one of which it poured rain. At its best Robert's blazed track, made for the Hon. Price Ellison, was not an easy one. Two years of growth in this moist region had obliterated all except the blazes on the trees, and it was difficult to follow. It traversed the steep slopes of the valley of Price Creek to its head, and on the third day at noon we reached the summit of the Pass. On the north side the snow came right down to our path, and high ragged peaks lined with hanging glaciers bordered it on the west. A rocky col studded with tiny pools formed the divide, and the view would have been a glorious one had it not been blotted out by a belt of clouds. From the ridge to our right one sharp tooth rose clear above the encircling mists and upon it we conferred the name of "Misthorn."

A thousand feet below the pass lay a glorious lake of rich indigo blue. We descended to its shores, not without difficulty, and camped upon its further margin. a number of the old party across to Alberni to greet us, and had he not motored twice a day for the past two days to this very spot to be sure to be there when we should appear from the forest? A few miles' drive in the waggon and then the chug-chug of a motor, and some of us were quickly transferred and whisked into civilization in time to partake of a sumptuous lunch at a long table completely surrounded by the smiling well-known faces of our comrades of the camp fire. At the foot of the table sat our genial, smiling chairman; and, as he bowed me to the head of the table, he raised his glass and said, "Here's to you, Mr. Director."

Strathcona Park is a splendid possession, and a wise and safe reserve for the great future

Elkhorn And Peaks At Head Of Elk River. Photo, J.G. Cory Wood

At Summit Of Price Pass. Photo, J.G. Cory Wood

that lies ahead of Vancouver Island.

Note.—Since this article was written the boundaries of the Park have been enlarged even more than indicated above, as will be seen from the accompanying article by Mr. W. W. Foster.—Ed.

Strathcona Park.

By W. W. Foster.

In a short address to my fellow members of the Alpine Club of Canada, concerning Strathcona Park, rather than attempt any detailed description,— particularly of its vast areas of gray and white, whose strongest claim upon their feelings can never be described,—I would give a few facts connected with the development of this great reserve and leave to them the pleasant task of anticipating the possibilities contained within it.

A few years ago the centre of Vancouver Island was practically unknown, and reliable information as to its topography almost impossible to obtain; yet already Strathcona Park is attracting widespread attention, and it is recognized that the development work in progress will give British Columbia the most magnificent public domain on the continent.

The original reservation declared by the Government in June, 1910, was practically the shape of an equilateral triangle, having the westerly line of the Esquimalt & Nanaimo Railway grant as a base, with Crown Mountain in the northern angle, and containing approximately 260 square miles; but one of the first results of research during the past season was to disclose the absolute necessity of an immediate revision of the Park boundaries, in order to secure:

1. Proper portals.

2. The chain of lakes at the head of the Elk River, with the feeding grounds of the elk, as well as the wonderful Alpine area adjacent thereto.

3. The reservation of the upper portion of Buttles Lake, at present outside the Park.

4. The acquirement of the unique territory from the divide south of Buttles Lake towards Alberni, known as the Ash River Section.

The amended limits providing for the inclusion of the whole of Buttles Lake, as well as the other essential features at first disregarded, contain an approximate area of 800 square miles, bounded on the north by the fifteenth parallel, which crosses the island south of Campbell River; and on the south by a line running 20 miles north of the city of Alberni.

In describing this area as one capable of being converted into a park without a peer, consideration is naturally given to the facts that in addition to magnificent natural characteristics, some unique in character, the climate of Vancouver Island permits a park season at least, two months longer than could be found elsewhere; whilst the trunk road programme undertaken in conformity with the general plan of development, will provide a park extremely easy to reach. Its accessibility is better understood by noting that the direct distance from Victoria is only 120 miles, from Vancouver 100, and from Alberni 20, and that even at the present time by using the Island Highway to Campbell River there is no great loss of time involved in reaching the Park boundary, whilst the impending construction of a road from Campbell River to Buttles Lake will provide a highway probably within the forthcoming year, into the heart of the Park itself.

The chief impression upon a first trip is naturally one of amazement at the diversity of Nature's wonders. On a summer day glancing upward from the placid surface of Campbell Lake, its shores fringed with magnificent foliage and the clear waters acting as a mirror, thus presenting

Buttles Lake. Photo, R.H. Thompson
A beautiful inland loch, Twenty-five miles in length.

an idyll of nature in its softest mood, to the cold white mountains with their tumbling glaciers, gleaming snowfield or leaping waterfall, a contrast presents itself possibly only excelled by the panoramic effect obtainable from the summit of one of the higher peaks within the Park, whence the eye can range across countless mountains, glaciers and snowfields, thence down luxuriant valley and over peaceful lake, to the waters of the Pacific, or even eastward to the mainland itself, until the range of vision is exhausted against the long chain of snowclad peaks that parallels the coast line.

The work of the past summer, which entailed an expenditure of over $100,000, consisted of topographic surveys, contouring and trail making, including provision for immediate access at the north end, whilst the general plan of development has necessitated the partition of the reserve into three sections.

The first, at present called the Elk River, has at its entrance wintering quarters for elk and other game, farm, nursery and experimental grounds, and contains too the most magnificent standing timber in British Columbia; whilst further up the valley, with a beautiful chain of lakes as a centre-piece, lies a truly Alpine area of magnificent proportion to surprise and delight the mountaineer.

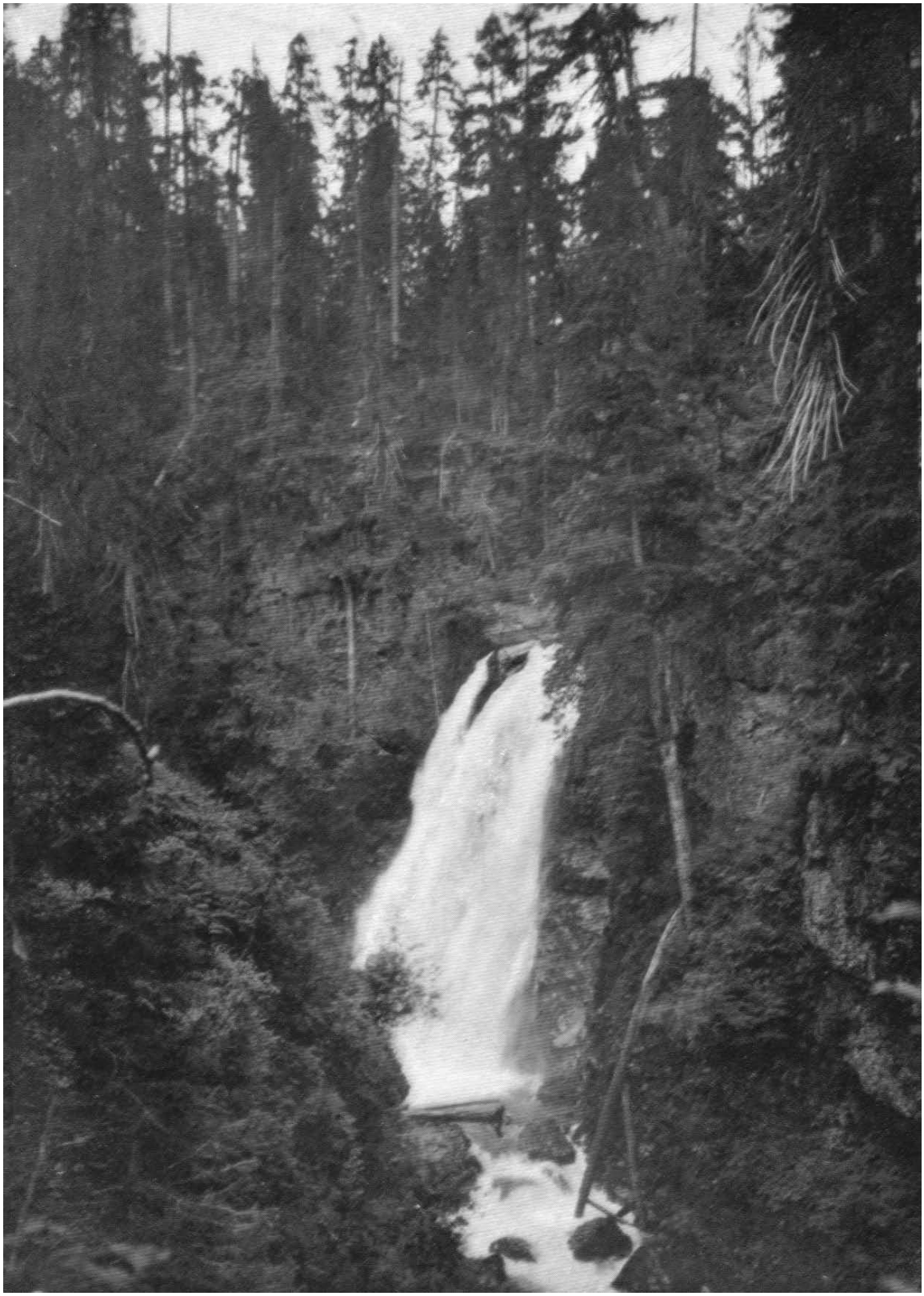
The second division includes Buttles Lake, a magnificent waterway, running down the centre of the Park, twenty-five miles long and averaging one to two miles in width, whose charm is intensified by the ever varying panorama of beauty disclosed from turn to turn of Alpine view and forest. On either side streams and rivers,—many of them having leaping falls of wonderful beauty,—come pouring through countless valleys from the glaciers and snowfields, of which glimpses are constantly obtained.

The third section, at present called the Ash River, is of entirely different aspect, and includes many magnificent mountains, with their attendant glacier and snowfield. It has upon its lower levels open pasturage with fruit and heather lands but lightly timbered, and is dotted in every direction with lakes of varying size,— oftener than not the result of the activity of the beaver in damming up the streams flowing off the watershed.

In the development of the Park, two points must necessarily receive equal consideration, i.e., giving the public the best possible opportunity to take advantage of their domain as soon as expedient, and its preservation to posterity as a heritage unspoiled by too great an interference with the original gift of Nature. In pursuance of these ideals steps have already been taken to eliminate the danger from fire and promiscuous camping, to destroy all refuse, for game protection, and consideration has also been given the reforestration of timber areas cut or to be cut, and to proper regulations covering the lakes and rivers which now teem with fish.

The flora is known to embrace over 350 species, but as many of the more attractive and showy varieties are not to be found, or exist in small areas, the question of seeding and planting out during the early history of the Park is being investigated with the view of presenting the whole area at its best, at the earliest date possible.

The work thus briefly outlined this season demands continuation for a term of years, and will only terminate when the natural advantages of this wonderful Provincial Reserve have been used to make it the last word in a public park.



Lady Falls On Glacier Creek, A Tributary Of Elk River. Photo, R.H. Thompson

Vermilion Pass Camp, 1912.

By The Reverend J. J. Robinson.

Those who have read "Our Mutual Friend" will remember, as among Dickens' most characteristic types, a certain young gentleman whose name was Eugene Wrayburn. His chief peculiarity seems to have been an immense capacity for boredom. It is on record that on one occasion reference was made in his presence to the Rocky Mountains, and Eugene took strong exception to this, alleging that the Rocky Mountains, about which no one cared an atom, were yet a set of conversational bores, about which everyone felt bound sooner or later to make a remark.

I suppose that I may regard myself as Mr. Wrayburn's logical contrary, since I find life and nature and men and women perennially interesting. While as for the Rocky Mountains they have been for me a word to conjure with, the very last word of enchantment and attractiveness. But for many years no dream seemed less likely of fulfillment. It was "the desire of the moth for the star, of the night for the morrow," as Shelley says. So when at last I found myself settled for a time in Western Canada with my family away in the old country, I was free to go where I listed when the time of my statutory clerical holiday drew near; when in addition I learned that there was actually a club that one might join, with a veritable club house of its own, I lost no time in putting myself in communication with Mr. S. H. Mitchell, the club's well known and highly esteemed secretary. I wrote to Mr. Mitchell to the effect that I had done some climbing in Switzerland and elsewhere in days gone by and wanted to sample the Rockies, so after due enquiry as to the names of the peaks I had conquered, I got a delightful letter telling me that in consideration of my performances, which, by the way, are by no means remarkable, and also perhaps in consideration of my gray hairs, I might consider myself a free and accepted member of the club without having to make the usual qualifying climb of a peak above ten thousand feet high.

The looked for day arrived. I had with great joy bought and packed and carefully weighed my dunnage bag. I had got it checked and now it only remained to watch my fellow passengers that so if any showed signs of possessing an ice axe or a coil of rope I might immediately chum up with them, But alas, they all carried grips and their talk was all of real estate and motor cars, so my journey was a lonely one until I arrived at Banff. Once there it was lonely no longer. Before ever the train stopped I spied a man who wore knickers and boots suggestive of Arolla or Zermatt, so I took off my hat and asked was his name Mitchell. He proved to be somebody else, but he pointed out the real Simon Pure and I received that more than kindly welcome which every one meets with who goes to the Alpine Club House. I had arranged to spend a couple of days at the Club House and take a walk or two so as to get into trim before the climbing began, and here I wish to state my strong opinion that it is worth any mountain lover's while to visit the Rockies even if he gets no further than the Banff Club. It is a delightful place. The excellent plan of having tents with good beds in them for the sleeping quarters permits of ample space for the living rooms in the club itself. Situated high above the river and the hotels, it commands a noble view, and as for the members I felt by the time I had walked up Sulphur Mountain with some of them that I could buckle them to my heart with hooks of steel, if the phrase does not sound too strong in view of the fact that some of the members are ladies.

But the attractions of the Club House, in spite of its pleasant occupants, good cooking, and comfortable beds, must pale before the joys of the camp itself. This was indeed a step into the unknown and suggested delightful possibilities of adventure. Mountain hotels I had known in plenty, where the Cook's tourists swarmed like bees, and the English people persistently opened

“We Started On Our Eight Mile Tramp”. Photo, P.L. Tait

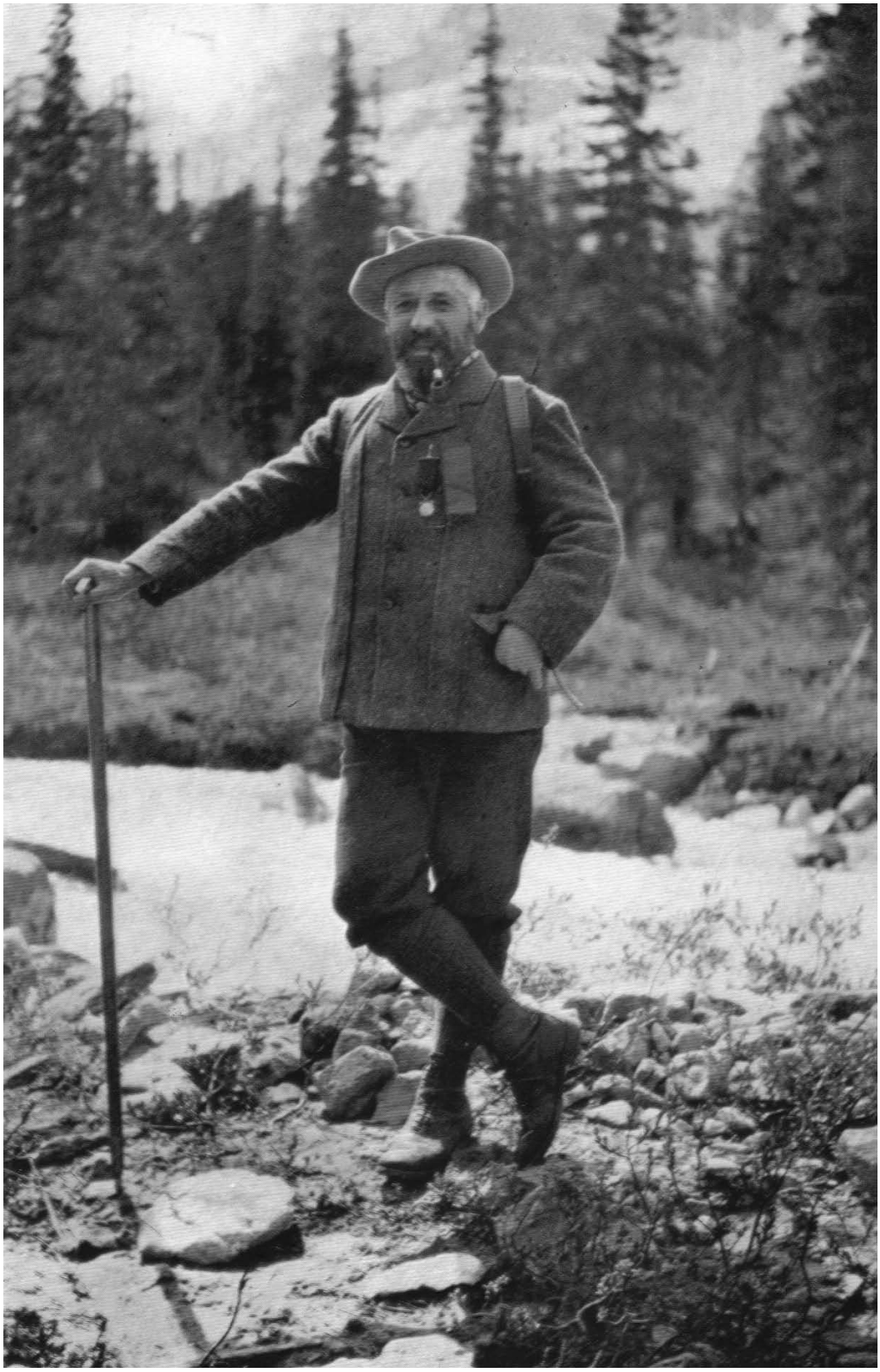
Under The Dining Canopy. Photo, Rev. A. Sovereign

the windows which the Germans with equal persistence shut; club huts too I had known, all honour to those who have erected them, but they are not easy places to sleep in, especially in the crowded August time, while a row with a rival party of climbers at two o'clock on a cold morning as to who is entitled to a first turn of the cooking stove is not a pleasant beginning of the day. Likewise, I have had my turn of camping out in Syria where everything is too expensively and too luxuriously done for you by the dragoman into whose hands you must put yourself. But what was a camp in the Rockies going to be like? What were the drawbacks it was likely to develop, and on what lines was it going to run? I was soon to know. We travelled on from Banff, our Club House party considerably augmented, to a wayside station named Castle, with a grand mass of rock towering above it, the turreted form of which explains the obvious name. Here the Bow River flows through an almost level valley, and as soon as we had deposited our bags at the base camp, from which had to come on pony back our daily supply of provisions, we crossed the river and started on our eight mile tramp to the camp at Vermilion Pass. At first the; trail was dull enough, save for the beauty of the mountains that lay all around. I had not come to the Rockies to walk along a high road, and felt defrauded accordingly. It appears that a great international motor road is to be made right over the pass where our camp lay and it was along one of the completed portions of this road that our feet were treading now. But soon the road was left behind and we hit a delightful narrow trail that wound up and up through forests of varying denseness, and with a glorious abundance of wild flowers in the more open spaces. Many of the flowers were new to me. Later on I was to learn the names of some of them from Mrs. Henshaw, who not only occupied the responsible position of camp mother at Vermilion Pass, but is a very high authority on the subject of the flora of the Selkirks and Rockies, and has lectured and written much on the subject. One lingers in pleasant retrospect over every incident of that first walk,

> "When stepping westward seemed to be,
> A kind of heavenly destiny."

But the two facts that remain firmest in my memory are that I got into an argument with a learned companion on—of all subjects in the world—the poetical merits of Robert Browning, and that every here and there in the depths of the silent forest we struck on little parties of lumber men busy hewing out the track along which the automobiles of the globe trotters will some day run. Some were felling mighty trees, some were blasting out the roots with dynamite, some were flinging fragile looking bridges over small ravines, and at one blessed spot it was so ordered that the lumber men gave the ladies a cup of afternoon tea.

The camp at last, and glad to be in it, and to get a hand-shake from that benevolent despot the camp director. All who know anything about the Rockies know Mr. A. O. Wheeler, Honorary Member of the English Alpine Club, the man who knows the mountains of Western Canada from end to end as they are known, it is probable, to no one else. All too, who have camped with him know, that benevolent despot or not, his rule is certainly despotic, and that he is the male counterpart of the famous "She who must be obeyed." To people who know only the Alps, and who are accustomed to wander at their own free will, and to feel that so long as they pay their way they may do as they please, nor owe allegiance to anybody, this may seem surprising, but a moment's reflection will show the sense of it. There can be no half way house. Either the thing must be simply an open air hotel where people who pay their bills can go as they please, or else if the directorate makes itself responsible for the safety as well as the comfort of its visitors there must be what Petruchio calls



He Who Must Be Obeyed. Photo, Mrs. J.W. Henshaw

"awful rule and right supremacy." And surely the latter is the better plan. Even in the over trodden Swiss Alps people have got lost, and accidents have happened through ignorant and culpable carelessness. But here in the Rockies are no convenient chalets at which to ask our way, no cow bells sounding through the mist to tell us where safe going is likely to be found. Nothing but the wild and trackless forest everywhere, and the grim peaks of glittering snow that rear themselves above the pine tops. So no one may leave the camp without permission. No tenderfoot or party of tenderfeet may make an expedition except under the leadership of a competent amateur guide. Other rules there are, but they are also for the general good, so why should they not be obeyed? I have heard whispers as to people, who failed to keep camp rules and so had to take their sticks and quit. But so far as I know we were all good boys and girls last year, and thus there was no reason why Jove should bend stern brows upon us. But, joking apart, Mr. Wheeler is father and friend to all in the camp. To see him of a morning planted upon as steady a pair of legs as ever trod a mountain side, while the different climbing parties, each under its appointed leader, file out before him, to hear the terse vigorous words of advice and encouragement that he gives to each in turn, to notice how sharply he looks after the various elements of each party's equipment, is to realize that we have to do with a man who knows how to handle men.

Well, what of the camp itself? I am told that it was not so well selected as some of the camps of the previous years, and I am bound to say that to my thinking a camp in the open would be preferable to one in a forest. The week or ten days that we spent in camp happened to be rainy, and not only was there dense pine forest but thick scrub and underbrush as well, through which it was needful to push one's wet way, scrambling over fallen trees in every stage of decay before treeline was passed, and the rock and snow work began. However, things have their compensations, and there was never any lack of logs for the camp fire.

And what of the accommodation? Isn't it very rough? Figure to yourself a cleared space. In the centre a huge tent for the dining room, roof only, no sides. Long tables fill it, covered with rows of tin plates and cups; the seats are just untrimmed pine logs supported on cross bars. Evidently this is not the sort of place a man should go to who left a picnic party because he declined to drink his champagne out of a claret glass. Around the central tent are the kitchen, the ladies' parlour, and various tents of an official character; beyond these again are two little streams, for the camp is almost on an island; just below the camp the streams unite and hurry on their way to the Pacific, for in the course of our walk from Castle we have crossed the summit of the pass and are actually in British Columbia. You must cross one of the streams to reach the men's sleeping quarters, and the other to reach those of the ladies. By the way, the bridge that led to the men's quarters was a fine practical test of the camper's sobriety. Thereon too there hangs a tale. A notice board had been posted up with a hand painted on it indicating the bridge and an inscription "To the cawsway." Whether the writer was weak in his spelling or whether he meant to suggest that the men were unduly conversational, does not appear, but the notice board was annexed by some curio collector and a well known and dignified camper was charged with the theft.

The result was a mock trial held round the camp fire, real lawyers were retained for the prosecution and defence, the prisoners were brought in heavily guarded and manacled, the witnesses tried to be as absurd as possible, and a great deal of fun was the result.

I fancy I hear an anxious enquiry from some hesitating recruit about the beds. Oh, the beds are all right. You bring your own blankets and pillow and whatever else you like, so long as your load does not exceed forty pounds. The substratum of your bed is brushings, i.e., the chopped off soft tops of the pine, and if a man breathing mountain air, taking wholesome exercise, cannot sleep

J.D. Patterson, Col. Walker. Photo, Miss J.D. Patterson

well on brushings, why he must have something bad on his conscience. If you would prefer a softer bed, and it does tend to get hard towards the close of the week, why shake the brushings up, or go and cut more for yourself.

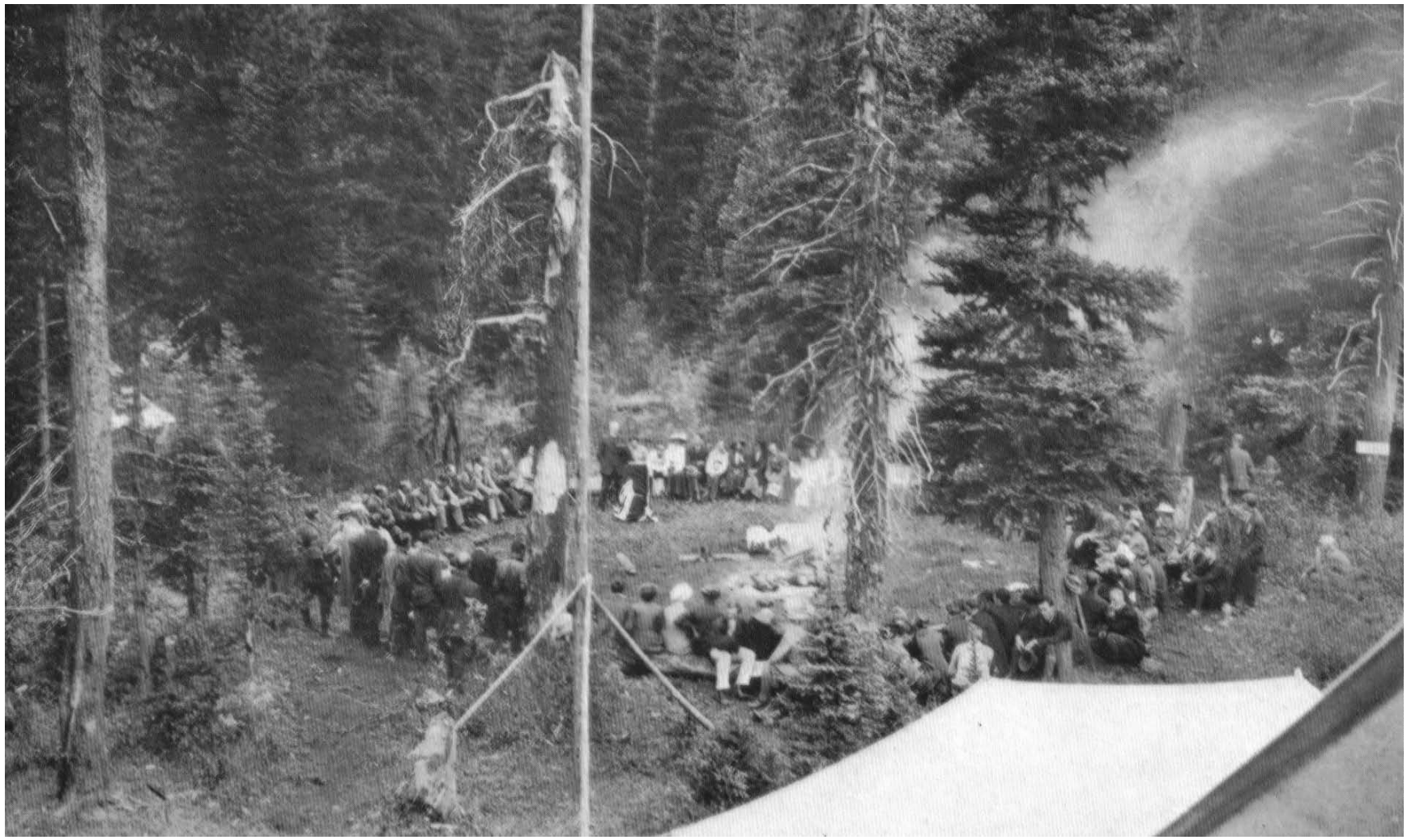
Last and most important question of all. What are the campers like? Could a lady go there all alone? Yes, or a young girl either, and be just as safe as in her home at Brighton or Toronto. All sorts of people come, but they have from the first a bond in the common love of the grander, sterner side of Nature, and it is interesting to notice how soon they catch the camp spirit, which is an amalgam of cheery optimism and unselfish thought for others. As I said the weather was far from good, but the ladies especially took it all with a frolic welcome like Ulysses' mariners, and as for unselfishness, to give one instance, two of the men who slept in the tent with me had just come in from a hard day's climb when news reached the camp that a regrettable accident had happened high up on Storm Mountain, and that they were wanted to join an expedition of help. The night was wet and pitch dark, but there was something more than alacrity in the way in which they thrust their tired feet into their boots and started off with blankets and so forth, to make a fire and watch through the night by the injured man until morning would permit of his being carried down. Both my tent mates were old English public school boys, and this, therefore, was only to be expected of them. What struck me even more, because less spectacular, was the way in which certain leading members of the club, and those the keenest climbers, quietly put aside their own tastes and devoted themselves to the work of the camp and the care of the neophytes.

Perhaps I ought not to mention names where all according to their abilities were kind and helpful. But I cannot avoid referring to one of the Vice-Presidents of the Club, Mr. J. D. Patterson. He noticed everything and thought for everyone. Himself a climber of the first rank, he yet put thoughts of climbing aside in order that he might be the guide, counselor and friend of all and especially of those who were visiting the camp for the first time.

We were honoured in 1912 by the presence of our president, Professor Coleman, F.R.S., who gave us an address on Sunday. It was my privilege to conduct service on Sunday morning, and in the afternoon Professor Coleman spoke on the geology of the Rockies in words so interesting, so learnedly simple, and so reverent that all who sat in our Witan, which is the circle of logs round the great camp fire, felt that their thoughts were lifted up in awe and wonder into the presence of the Great Architect of the Universe.

In this sketch of my personal impressions of the camp, I have said nothing of the climbs and expeditions. Others will tell their story, and my part in the climbing was not great.

But I want, before laying down my pen to say to those who are considering where they will spend their summer holiday. Why not try the Alpine Club Camp? I want to say to all tired teachers, male and female, to dry as dust lawyers, brain fagged business men, worried clergy and unappreciated authors, come whether you are a climber or only a walker, if you want glorious scenery, invigorating air, moderate cost, and pleasant comrades, come and renew your youth this year and meet us at the Yoho Camp of 1914.



“Our Witan” - The Circle Of Logs Around The Great Camp Fire. Photo, P.L. Tait

Vermilion Impressions.

By P. A. W. Wallace.

"A plague upon all Alpine camps, I say! I was never in so vile a case before. Is it not enough, ye muddy knaves, that I must turn pack-horse and transport mine own flesh over forty miles of the most villainous trail that ever led virtuous man astray from right living and the railroads?—but ye must turn me out into the woods to brush your tents, forsooth, as if I were chambermaid in a lumber camp. Zounds, go hang yourselves in your own Alpine rope. If I have not died three score deaths and ten this past hour with axe. log, swamp, stream, and that villainous, abominable man-trap the causeway, I am a heap of scree or a tenderfoot. Give me a cup of sack, boy. This cursed glacial water has dried me out like a burnt forest. A plague upon the Alpine Club, I say."

That is the way Jack Falstaff felt upon arrival in camp, and the way some others may have felt at Vermilion Pass. Brushing tents, till that time a mere phrase, became a shocking reality; the difference between balsam and spruce ceased to be an academic question for the botanical laboratory, and was sharply impressed upon stinging palms; and circus performing, hitherto supposed fantastic buffoonery merely for the amusement of children, became, on dark, wet nights when we crossed the slippery bars of the "CAWSWAY" in attitudes reminiscent of our baboon ancestry, an intensely practical accomplishment for all men who desired direct intercourse with the "down town" section of the camp.

The down town section was certainly an attractive one, for it contained the civic centre, or dining tent, and other municipal offices. The camp was a great city in miniature, with a newspaper, post office, police register, lost and found department, and city council. The council met every night about a huge bonfire

"To talk of many things,
Of shales and shoes and scaling rocks,
Of sandwiches and springs,
And why new climbers lose their breath,
And whether Feuz has wings,"

in addition to other subjects of a more lyrical nature. Those were the times when Jack Falstaff and some of the rest of us felt a sense of perfect happiness steal over us from our toasted toes to our blinking eyes as we watched the flying sparks twinkling over the pines, and heard the delightful wit of the "Alpine Herald"; followed the judicial proceedings when A. C. Gait, K.C., shackled to an old stump, defended himself against the charge of feloniously removing the camp's chief art treasure, the "CAWSWAY" sign, from a neighboring tree; or joined in the rollicking chorus of "Patrick Hooligan's Mule", to the interruption of the family devotions of every retiring bird or beast in the forest for miles around.

One of the most useful institutions about camp was the Lost and Found Department. You could get there almost anything you wanted if you waited long enough. Never mind losing your hat in a crevasse—there were lots more in camp. And anybody who burnt a handkerchief while trying to dry out the evidences of a damp climb, was consoled by the knowledge that there awaited his selection a large set of assorted handkerchiefs in the L.F.D. I myself got no less than three hats there (though, by an unfortunate coincidence, they were the same hat each time), and I could have had a great many more if I had seen any I particularly liked.

Next to the L.F.D. in general usefulness was the institution of the human alarm clock, which was eminently superior to the old-fashioned clock-work gong that wakes up everybody in the house but the man who set it. This new kind could not be set for a wrong hour, whether by

A Crisis On The "Cawsway" Moral: Look Before You Creep. Drawing, P.A.W. Wallace

accident or guile; it could not be shoved out of hearing under one's pillow; and it could not be silenced by the insertion of a match in the works. Once it struck, you were doomed to "Sleep no more: Wheeler doth murder sleep."

Falstaff—and most of us have some Falstaff in us—was inclined to quarrel with the clock in the early morning. But its work was essential to the mountaineering side of camp life. It was undoubtedly arduous work, too, for it can be no easy matter to wake three score sleepy, town-bred men at five in the morning to climb a mere mountain. So, all hail to the alarm clock that aroused the camp to all its noble enterprises.

Next among the glories of the camp was the "CAWSWAY." One soon learned that the purpose of this engineering triumph was not merely to afford transportation facilities, but was rather to supply a training school for mountaineers. Anyone who has had that horrible, mid-air passage lurking between him and his meals for a day or two, and has gone where hunger called him, is surely capable of scaling the wildest cliffs, balancing himself on the narrowest ridges, or hanging suspended by the slenderest rope over the most appalling precipices without turning a hair or a somersault. The real test of membership this summer was not Storm Mountain or any of the Ten Peaks, but was undoubtedly the causeway, for there campers first got their nerve or lost it, there they learned to walk upright with precipices not only on each side but actually under their very feet, and to trust their lives to the "unsteadfast footing of a spear" or two with that firmness of purpose and contempt for personal risk that characterizes the true Alpineer.

Although that test would seem to be satisfactory to the most exacting, the powers that constructed the camp arranged yet another test to weed out the non-climbers and to develop the gymnastic abilities of the others. Under a huge canopy in the centre of the camp were arranged a series of tables, and by the tables were horizontal bars in place of chairs. The object of meals was to encourage those under training to balance themselves on the bars—the idea being that if once a person could be taught to balance on a log for his breakfast, there would be no difficulty in teaching him to balance on a knife arête for his life. Jim Pong with his minions officiated at these exercises, and won great popularity by the success with which he executed the duties of his office.

I wonder when Francis Walker's three-sided, self-balancing, indestructible camper's plate is to be put on the market. If the authorities do not disapprove of it on the ground that it affords less training to the speculative faculties than the present one-sided plate, I am sure it would win great popularity for the inventor.

For the amusement of idlers about camp (to which category we all belonged at times) three types of sport were provided: athletic contests, fishing, and drying clothes. Hearing a frightful din down town one day, I crossed the causeway and found the sports in full swing. A lot of people were pulling themselves about with ropes in the mud, and trying to jump fabulous distances in the same element. But "the rapture of pursuing" seemed to be all the prizes vanquished or victor gained, so I stood to one side and marvelled. One day I did try a little sport at Vermilion Lake with an alder stick, a line, and choice bits of fly and bacon; but "the rapture of pursuing" seemed to be the only prize offered in this sport also, for the solitary denizen of the deep refused to bite. There was only one fish in that lake. I know, because I saw him myself. Though lacking in numbers, however, he was as full of lives as the richest cat, for, when I subsequently met him at dinner through the kindness of Mr. White, he was produced something like twenty-three times for as many hungry campers.

Everybody indulged in the third sport — drying clothes; but no prizes were won—not even rapture.

The Walrus And The Carpenter. Drawing, P.A.W. Wallace

Were Climbing Wearliy;
They Wept Like Anything To See
Such Quantities Of Scree:
"If This Were Only Cleared Away"
They Said, How Grand 'Twould Be.
With Apologies To Tweedledee

"No more of that, an' it please you. S'blood, to think on't makes me as melancholy as a rock rabbit or a muskeg," says Falstaff. So we will pass on to pleasanter topics.

Storm Mountain, a great sprawling mass of rock nearly two miles high, was the official graduating climb. By 6.30 o'clock, after the causeway and the breakfast bars had been negotiated, those who had thereby proved themselves active members were lined up by the Mayor, who reminded the citizens of certain salutary regulations, gave them his blessing, and promoted them to a higher sphere.

Jack Falstaff dropped behind at the first spring "to roll up these knavish puttees," and he never rejoined the party, but the rest of us toiled up long slopes of forest moss and longer slopes of unsheltered shale with the utmost eagerness. Some of us were eager for a drink, some to discover what sort of sandwiches Jim Pong (that name never sounded so sweet before) had put up for lunch, and some for a view of the splendid landscape. From the shoulder of Storm, there was a fine view across the wide valley to the evergreen slopes of Mts. Boom and Whymper, which were lined by the bright thread of Vermilion Creek flowing from the glaciers in the back-yard of the Valley of the Ten Peaks. But one must have leisure to appreciate beauty, and the scenery was spoilt by Edouard Feuz's relentless—but necessary—"Why don't you come, eh? Do you think you can climb by going to sleep?" We toiled on over slopes of dreary shale, casting longing eyes at the turquoise lakes that lay among the pines beneath the rocky cirque whose huge southern wall supports the final crest of Storm. Those yielding slopes of splintered rock were a tiresome treadmill, but the climb seemed worth the effort when the summit was reached, for there rucksacks were opened, sandwiches and prunes were freely circulated, and the scenery at last began to present elements of beauty.

From the great white dome of Mount Ball seemingly close at hand, the inspired eye swept past the jagged pinnacles of Hungabee and Deltaform, and described a grand circle over a tumultuous sea of rocky peaks to the wild pyramid of Assiniboine cutting the clouds in the distance, then dropped to where the shining Bow River, a mile below our feet, wound its way through the broad valley to which it has given its name.

Lovers of the Alps look with a jealous eye upon the newly exploited Rocky Mountains of Canada, and the Canadians are constantly in fear lest this or that feature here should be inferior to the Alps. That is ridiculous. Judge the Rockies by the Swiss standard, and our mountains are hopelessly inferior; judge the Alps by the Canadian Rocky Mountain standard and the Alps are nowhere. The two ranges are absolutely different. What is typical of one is rare in the other, and each surpasses in its own particular beauties. We have no lovely snow mountain (unless it be the single example of Mount Robson) comparable to Monte Rosa or the Jungfrau; we have no gigantic, isolated peak with a history like the terrible Matterhorn; no quaint villages on the hillsides with clustering chalets tiny church spires, and flocks of goats with their tinkling bells: but we have broad-sweeping valleys clad with primeval forests; we have pretty glacier-fed lakes, and great rivers rushing through long gorges or meandering past green meadows and forests, with islands, and falls, and foaming rapids; we have wild peaks of untrodden rocks split and torn into daring shapes, and seas of mountains stretching as far as the eye can penetrate—stormy seas rolled and tossed as though the earth were molten and the mountain waves in a tempest. Those are the things in which the Rockies excel, and those are the things that we should seek among them. Of course, when we enter the Selkirks, we must change our attitude again, for we are here among mountains that are as different from the Rockies as are the Alps. We should not boast of possessing "fifty Switzerlands in one," but content ourselves with prizing the Rockies for their own qualities rather

Drawing P. A. W. Wallace

THE GRADUATE

The Graduate. Drawing, P.A.W. Wallace

than trying to persuade ourselves that we have a fairly good imitation of a foreign range.

The new graduates were now eager to get back to camp. Such eagerness remained with them until late in the evening, for it takes time and caution for a large party to outwit the playful avalanches of rock that skip like lambs upon the mountain side. Few kinds of travel are more exhilarating than sliding down a rocky gully with a mountain side of roaring stones following at one's heels. Perhaps, to be overtaken by the slide, upset on a flat rock on top of the moving mass, and to be advanced majestically toward the valley on charioteering limestone, is the most triumphant progress that may fall to the lot of any Alpineer. Personally, however, I prefer to walk.

A couple of parties tackled Storm by another route— the northern ridge. This ridge was calculated to test the amount of one's nerve, the strength of one's head, and the buttons of one's coat. Dislodged stones did not slide, but bounced, and the hollow boom they left behind might have afforded food for reflection, if anyone had time to be contemplative. But nobody had time. We were, most of us, so new at the business, and so constantly engaged in disentangling ourselves from the rope, that we had not a moment for contemplating anything beyond our linger tips. But, since then, I have been thinking seriously about the dangers to which we were exposed, and I have come to the conclusion that the roping system now in vogue is radically wrong. Could not someone devise a rope that, while strong enough to hold a man if he fell, would be weak enough to save the next man from being pulled after? That would eliminate the element of danger that still remains in roping. Possibly Francis Walker will take this into consideration when his three-sided plate has been perfected.

The Mecca of climbers was Mount Ball, and three pilgrimages were aimed at its summit. The first expedition had to return satisfied with "the rapture of pursuing" — the "booby prize" — and the second also failed in its ultimate object. But the second expedition achieved results of great importance. By actual climbing, we discovered exactly where Mount Ball is not. We climbed almost to the top of it on the map, only to find that the summit had taken wings and flown across a deep valley. Nothing daunted, we followed it across country, stalked it round a big rocky shoulder, and made a final charge into the sky. But our summit lay hidden in ambush until afternoon came on, and we had to depart with "the rapture of pursuing" gnawing at our hearts.

On the return, our eyes were opened to some scientific truths not generally recognized. It is a common fallacy to suppose that glacier motion is slow—so slow as to be, for purposes of transportation, utterly insignificant and contemptible. But that is not the case at all—far from it. To test the efficiency of glacier motion, I sat down on a small ice slope near Mount Ball. Without an instant's delay, I found myself progressing 'at a rate of about fifteen revolutions per second. I observed that this rapid motion tended to accelerate, and it might have attained a still more phenomenal rate of speed had it not been interrupted by some rocks below the ice, which interfered with the free rotation of my rucksack. This ride upset all my pre-conceived notions, and it is surely conclusive proof that Canadian glacier motion is neither sluggish nor unprogressive, but is rather extraordinary for its extreme and startling velocity.

If I had this whole volume to fill, I might say a few words about many other interesting expeditions—the third and successful pilgrimage to Mount Ball, the expedition up Mount Whymper, to Tokumm Creek, the Ten Peaks, the ascent of the unclimbed Mount Mitchell (?), upon whose summit were found bottles containing no records, proof positive that man had never been there before, and many other expeditions. But fortunately space is limited, and Jack Falstaff is in a hurry to go.

"Sack, you rogue, sack, sack! A pox upon your Jim Pong drinks. Am I an old beldame

Heroism Of The Swiss Guides. Drawing, P.A.W. Wallace

to be plagued thus with milk and sugar beverages? I have not climbed these ten days for lack of nourishment. How vilely am I fallen away with your 'kiyi', your camp bacon, your jam sandwiches, and this same unhandsome getting up at small hours o' the morning when honest folk should be going to bed!

"A horse, boy, a horse, and let it be a steady one, varlet, for I am grown as thin as an ice-axe and can scarce balance myself in the saddle. "I'll none of your graduation, not I by the rood. Can graduation gain a cup of sack or a hot capon ? No. Can it ward off these vile Western humours or dry a wet trail? No. What is it then? Hard labour. An I were but Chief Justice now, I would condemn every rogue in the country to graduation in the Alpine Club. Graduation is a mere stick-pin to a starving man. I'll none of it. And so ends my membership. "Zounds, an I remain here a minute more, call me Bergschrund and baffle me. My horse, what ho, my horse! I'll sup to-night in the C.P.R. Hotel. A plague upon your Alpine Club, I say!"

IN MEMORIAM.

Arthur Henry Benson, M.A., M.B., Univ. Dublin, F.R.C.S.I.

With keen regret we record the death, after a long illness, on November 6th, 1912, of this distinguished member of the Medical Profession and also a member of our Club.

Mr. Benson died in the sixtieth year of his age at Roebuck Grove, Co. Dublin, the residence of his brother, Sir Ralph Benson. Many years ago he suffered from acute rheumatism which later produced the heart trouble which in the end proved fatal.

Entering Trinity College, Dublin, at an early age, he graduated in 1875 and took the diplomas of the Royal College of Surgeons in Ireland and in Medicine in the University of Dublin. He, however, did not rest satisfied, but proceeded to London and Vienna to pursue post graduate studies, and in 1881 became a Fellow of the Irish Royal College of Surgeons.

When fully qualified and with the world before him, the restraints of professional life in this country did not attract him. He accordingly took medical charge of an ocean liner, and for two years wandered over many oceans and to many lands.

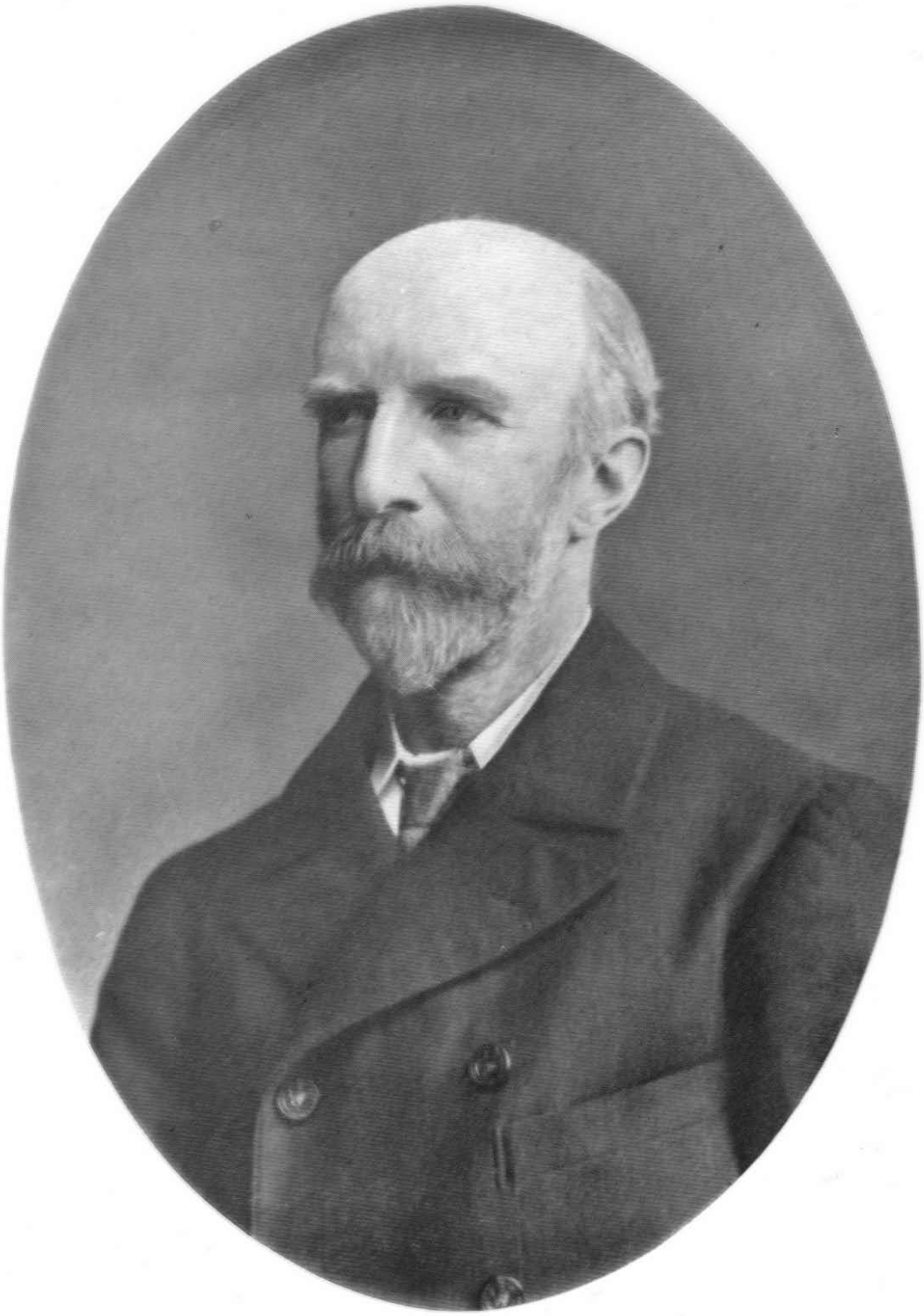
On his return he settled down, specializing in opthalmic surgery, and soon took a foremost place. He became member of several societies devoted to this branch of study in the United Kingdom and in Germany, where his writings are well known.

He was a man of strong, independent character, of great energy in anything he undertook to do, and his work for the hospitals has been commemorated in the City of Dublin Hospital, where a ward is called by his name. Always fond of travel, he made time to visit India, Ceylon, South Africa, Egypt, etc., in company with his devoted wife and helpmate. In 1909 they were members of our Summer Camp in the Rockies, and on his return to Dublin, delighted the members of the Ramblers Club there with his charming lantern slides. Everywhere Arthur Benson went he made many friends; he was singularly broad-minded, a trusty comrade and never made an enemy. He was of the character that Nature makes of all who can sympathise with her in her sublimest moods.

———— W.S.G.

The above has been written for the Journal by one of our Irish members who was well acquainted with the late Dr. Arthur H. Benson's many scientific attainments and charming personal qualities. Notwithstanding, I feel that I cannot refrain from adding a few words.

Dr. and Mrs. Benson came to Canada in 1909, partly to attend the meeting of the British



Arthur Henry Benson, F.R.C.S.I.

Association at Winnipeg and partly to attend our Annual Camp at Lake O'Hara as guests of the Canadian Club. They first visited our Club House on Sulphur Mountain at Banff, and then travelled with us to the Camp. At its close we arranged a six-day trip for our English Alpine Club guests around the Yoho Valley, and had Dr. and Mrs. Benson with us for part of the time.

Later, I met them at Winnipeg and we made the trip through the mountains together on the special expedition, provided for British Association members by the Canadian Pacific Railway, from Winnipeg to Victoria.

I am quite sure that I express the opinion of all our members who had the great privilege of meeting Dr. and Mrs. Benson when I say that we were charmed by their delightful personality, and that they endeared themselves to us during our all too short comradeship.

We found the Doctor a man of whom one could only think with affection, and his wife, who was known to us as "The Colleen," won all our hearts. I maintained a steady correspondence with him up to the time of his death. Both he and Mrs. Benson could never have sufficient news of the doings of our Alpine Club and of the Canadian Rockies, for which they had acquired a great love.

Word of his death came to me as a great sorrow, and I am certain that all our members who shared his friendship have a like feeling. We mourn his loss, but have great faith that the Alpine watchword "Excelsior" has in his case been fulfilled.

A.O.W.

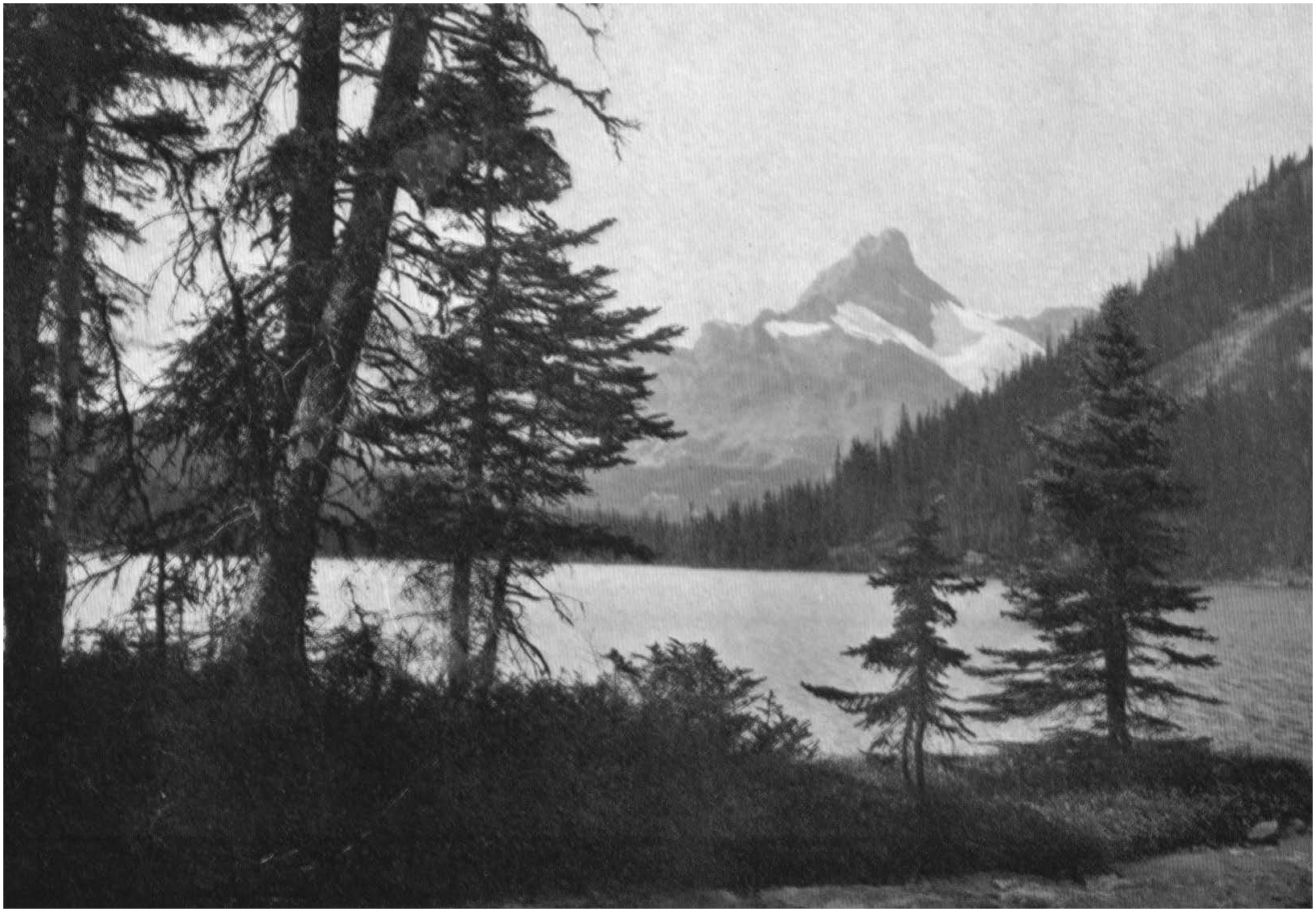
ALPINE CLUB NOTES

Site For A Club Hut.

The Dominion Government has leased to the Alpine Club of Canada two acres of land adjoining the shore of Lake O'Hara for a site for a Club Hut. The plot is beautifully situated on the south shore, directly below Mt. Yukness, and close by the "bridal veil" falls at the east end. It is covered by fine spruce timber of the kind that spreads its branches so picturesquely in umbrella fashion. A mountain torrent, born in the icy depths of the Opabin Glacier, flows brokenly through one extremity of the lot, and the path leading to the hut will cross it by a rustic bridge. The accompanying photograph illustrates a view from a point where the torrent enters the lake. Directly across this glacial sheet of glorious blue, are the towering walls of Mount Huber rising in alcoves and bastions, and close by is seen the ragged outline of the Wiwaxy Peaks. In the distance westward the isolated form of Cathedral Mountain stands in a pile, designed by Nature's architect to well bear out the name. To the east, above the falls, are the snow-crowned heights of Victoria and Lefroy, separated by the Abbot Pass. Extending southward from Lefroy rise the white-mantled Glacier Dome and serrated ridge of Mt. Ringrose. Close by, Yukness towers almost overhead. No more ideal location for a centre from which to plan and carry out a week or two of climbing can be found.

Along the shore, in front of the location, the Government has reserved a twenty-foot right-of-way for a pony trail to give access to the series of hanging valleys leading to Lake Oesa and Abbot Pass.

The Club is very fully alive to and appreciative of the great boon conferred upon its members by the Dominion Government in thus securing to them a reserve from which to conduct future operations in this magnificent centre, where rise the highest and most interesting peaks of the main



Cathedral Mt. From Club Lot. Photo, Byron Harmon

range, a group dominated by the Chieftain, the mighty Hungabee, from which five glacier-filled valleys radiate to as many points of the compass.

Two Attempts On Mount Ball.

On the afternoon of August 4th, 1912, a party consisting of three ropes of four each left Vermilion Summit Camp for an ascent of Mount Ball (10,825 feet), under the guidance of Ed. Feuz, Jr. The night was spent in the meadow facing the Whymper Slide at an elevation of 7,200 feet.

At daybreak the following morning a start was made in dull, cloudy weather, the ridge to the west of the meadow being climbed and the base of the steep cliffs being traversed into the next valley to the southwest. During this time the weather was gradually becoming worse and at eight o'clock a, halt was made under some over-hanging rocks. After a wait of about an hour, during which the clouds hung round the party so densely that at times it was impossible to see fifty feet away and the rain was becoming heavier, it was decided to abandon the attempt for the day and a return was made to camp. The highest altitude reached during the morning was 8,500 feet.

On the afternoon of the 6th a party of twelve, under the guidance of Mr. J. P. Forde, again left the main camp for a second attempt. The night was spent at an elevation of 6,300 feet in the beautiful hanging valley southwest of the one in which the previous high camp had been made, and immediately below the place where the previous attempt had been abandoned. On the morning of the 7th a start was made at 3.30 for the head of the valley above Camp. The ridge, 9,000 feet, was reached at 8.30, and it was then found that Mount Ball was not in sight and was evidently a long distance off to the east and behind the long shoulder immediately above the ridge. The south side of this shoulder was traversed, the travelling being very slow on account of the steepness of the rock face and the necessity of using ropes. After two hours' work it was seen that the ridge connecting the shoulder with the main mountain was lightly covered with new snow left by the storm of the two previous days and would not be safe and it was, therefore, decided to drop into the valley and make a fresh start on the mountain from there. After lunch in this valley, at an elevation of 7,500 feet, a start was made at 11.30, and at 1 p.m. the arête to the west of the main peak was reached. The small peak on this arête, 10,300, named Beatrice Peak, was traversed, the traverse being a very slow one on account of the large amount of new ice and snow and loose rock rendering the utmost care necessary. After an hour of this, it was seen at 2 p.m. that if the couloir between Beatrice Peak and the main peak was crossed and the ascent to the summit made in the bad condition for climbing in which the mountain was, it would be impossible to return to a lower level that night and, as there were three ladies in the party, it was decided that it would be unwise to proceed farther. The second attempt was, therefore, abandoned and a return to the high-up camp made at 9.30 p.m., the main camp being reached at noon on the following day.

Survey Of The Continental Watershed.

A necessity has arisen for the survey of the boundary line between the Provinces of British Columbia and Alberta, owing to the administration of timber, mineral and settlement franchises. The interprovincial boundary is defined by statute as the watershed line of the main range of the Rocky Mountains, extending from the International Boundary between Canada and the United States, or 49th parallel of latitude, along the said watershed to its intersection with the 120th meridian of longitude—a distance of between four and five hundred miles. It will thus be seen that the survey embraces the highest portion of the main range, and will have to deal with the best,

wildest, and most rugged of its alpine features. This work will be of the greatest interest to friends of the mountain areas of Canada, and particularly so to members of the Alpine Club of Canada and the alpine clubs of other countries. It will of necessity gather information concerning parts of the mountain regions of the main range that are at present but little known, and in due course furnish maps of these areas and provide information to give peaks indefinitely located their true position and altitude. It will also define the extent of the various snowfields, locate the numerous valleys opening from the summit of the range, and enumerate the glaciers and icefalls at their heads and the lakes, waterfalls, torrents and other features that lie hidden within them. Generally speaking, the survey, in addition to determining and marking the boundary, will map and give definite location to all the features which go to make up the great alpine scenery of the range that is attracting so much attention and drawing crowds from all parts of the world to the Canadian Rockies. At the start, it is intended to define and mark the boundary' only in the immediate vicinity of the most accessible and most travelled passes, and while doing this to map the topographical features immediately adjacent thereto: so that each pass will be represented by a map showing the boundary as marked, and by contour definition the various features of the upheaved and broken terrain surrounding it.

There are fourteen principle passes across the Great Divide which have so far been brought prominently to public notice. They may be enumerated as follows, commencing at the International Boundary: South Kootenay Pass, North Kootenay Pass, Crowsnest Pass, North Fork Pass, Kananaskis Pass, Whiteman's Pass, Simpson Pass, Vermilion Pass, Kicking Horse Pass, Howse Pass, Athabaska Pass, Yellowhead Pass, Moose Pass, and Robson Pass. Of these, three, the Crowsnest, Kicking Horse, and Yellowhead, are at the present time traversed by transcontinental railway lines; and one, the Vermilion Pass, by a motor road now in course of construction; while two others are in the commercial eye with a similar object in view. As soon as railways open up facilities for the advancement of settlers and the development of economic industries, with the consequent demand for materials found in these wild places of nature, it will readily be seen how necessary becomes the definition of ownership and consequently the requirement for the survey under discussion.

As far back as 1857-1860, a number of these passes were explored and reported on by the Palliser expedition, sent out by the British Government to ascertain a practical means of communication by road or railway between the eastern provinces of Canada and the Crown Colony of British Columbia. Most noticeable among them were the two Kootenay Passes, the Crowsnest Pass, the Kananaskis Pass, the Whiteman's, Simpson, Vermilion, and Kicking Horse Passes, explored respectively by Capt. Palliser, Dr. Hector (the late Sir James Hector), and Lieut. Blackiston. A full account of this work is found in the Palliser Report, published by the British Government in 1863; and now, fifty odd years later, a more definite and more comprehensive survey is made necessary by the influx of population and the consequent great development of the vast natural resources of the Dominion of Canada, and the rapidly increasing crowds of people from all parts of the world that come each year to enjoy the scenic splendors of our mountain regions.

The work of surveying the boundary will be in the hands of a commission composed of representatives of the three governments interested, namely, the Dominion Government, and the Governments of British Columbia and Alberta, the interests of Alberta being reversionary as, at the present time, the lands of that Province, one of the two most recently constituted, are vested in the Federal Government. Mr. A. O. Wheeler, Director of the Alpine Club of Canada, has been appointed to represent the British Columbia Government.

The work will be carried along in two sections, viz.: the marking and placing of monuments to define the boundary at the passes, and the topographic survey to enable contour maps to be made of each pass and its immediate vicinity. In due course the mountain areas dividing the passes will be linked up and mapped, furnishing eventually a complete and definite topographic contour map of the entire summit of the range between the points previously mentioned.

This topographic map work, which will be done by means of the photo-topographic methods used so extensively and so satisfactorily in these and other parts of Canada, will be directly in charge of Mr. Wheeler, who has made this class of work a specialty, and from whose connection therewith the Alpine Club of Canada has sprung.

A word to show wherein the foregoing applies to the Alpine Club of Canada, and to supply a reason for this note:

Twenty-seven years ago — November, 1885 — the first through train of the C.P.R. made the run from Montreal to Port Moody. On that occasion, the Alpine Club of Canada's Honorary President, Sir Sandford Fleming, LL.D., K.C.M.G., was present when the last spike of the steel track connecting the Atlantic with the Pacific Ocean was driven by the late Lord Strathcona and Mount Royal (then Sir Donald A. Smith). Since the running of that first train, the wonderlands of the Rockies and the Selkirks, of the Gold and Coast Ranges, which were opened up, have been gradually explored, developed, and mapped until they are fairly well known within a narrow zone bordering the railway; and surveys have been made by McArthur, Drewry, Wheeler, Carson and Bridgland, all Alpine Club members, that have extended more or less comprehensively over the railway belt of British Columbia—the zone of territory reaching for twenty miles on each side of the railway, from the summit of the main range to the Pacific coast.

Explorers soon began to visit this newly opened area of mountain wilderness, and the world to learn something of its alpine splendours and natural advantages as a recreation ground, through the writings of Prof. Fay, Dr. Norman Collie, Hugh M. Stutfield, Walter D. Wilcox, Prof. Coleman, and many other articles appearing in the pages of Appalachia and the Geographical and Alpine Journals.

These publications, together with the vast amount of splendidly illustrated literature published by the railway company, and the impetus given mountaineering through the company's bringing out Swiss guides at the early stages of the game and yearly thereafter, attracted crowds of people to the new wonderland, devotees of the science of mountains, of art, of photography and of literature concerning Nature's outposts; then mountain climbers, Nature lovers, health seekers; and lastly crowds of trippers—those who wish to see, do, and enjoy, while seated in the lap of luxury, all that was primarily attained by the exercise of much physical exertion and strenuous endeavour.

As a result, the accessible area soon became known in detail, the peaks were climbed and climbed again, new routes were discovered, photographs from many points of view were on the market, and there was rapidly being reproduced the hackneyed condition that now exists in the Alps of Europe.

A feeling began to arise that, a better acquaintance with newer areas was desirable, that something more definite should be known of the vast mountain tracts outside the beaten path. With this end in view, in 1911, the Alpine Club of Canada made an expedition to the Mount Robson region, and mapped that section of country; in consequence of which the British Columbia Government has opened the new Mount Robson Park to the world. The opening up of the Grand Trunk Pacific will to a considerable extent supply the demand for newer fields, and the fact that the

Alpine Club of Canada has this year held a camp within the shadow of Mount Robson, is a great step forward.

It will be quickly realized that the present boundary survey is a splendid move in the right direction, and will do a lot to give some knowledge of new grounds, and to send forth aspirants to little known fields of activity that lie without the narrow zone that has so far been opened up and made accessible to the public.

The Government of British Columbia, a province replete with mountain scenic beauties, quickly realizing the value of the rapid influx of visitors, and the grand asset created thereby from a revenue point of view, decided in conjunction with the Dominion Government and the Canadian Pacific Railway to open up a motor road from Banff on the Bow River, flowing east, to Windermere on the head waters of the Columbia River, flowing west, by way of Palliser's Vermilion Pass. The road is now in course of construction and in conjunction with the Canadian Pacific Railway Co., between whose northern and southern systems it gives communication, the said government has this year (1913) made a photo-topographical survey of the country adjacent on both sides of the road with a view to providing a complete topographical map of the mountain area through which it will pass, and travellers over it full information as to the scenic beauties it will traverse.

Most of the older civilized countries of the world have provided complete maps of the mountain ranges that traverse them, and particularly so where such regions prove attractive as recreation and health resorts, and the question has often arisen, why does not the Canadian Government provide better maps of the magnificent alpine areas which have proved so attractive? It will be seen from the foregoing that the surveys above referred to will do much towards filling this requirement, one which is becoming more imperative year by year. As an instance of the want in this direction, it may be stated that at the present day no map exists to show the exact location of that splendid peak of the main divide, Mount Assiniboine, known as the Matterhorn of the Canadian Rockies—a peak lying within twenty miles of Banff and one of the chief attractions to mountain climbers and tourists visiting the Rocky Mountains Park of Canada.

Rhodes Scholarship, 1913.

For the second time in the history of the Club, a Rhodes Scholarship has been granted to one of our members. In 1909, Alberta chose as its representative at Oxford, Mr. G. M. Smith, famous for the disproportion between pack and person in the Club's historic six days' trip of that year, and now a lecturer in the Department of History in the University of Toronto. In June. 1913, Mr. G. L. Haggen was selected by British Columbia, to take up the study of Law at Queen's College in October.

Mr. Haggen has attended only one annual camp, that at Roger's Pass, but he is a loyal member of the Club and distinctly a man of the mountains. From the age of nine his home has been in Revelstoke, where as a school boy each Saturday in the winter he went the round of his traps on the mountain-side across the Columbia River. Here also while on a bear hunt the friendly shelter of an overhanging rock saved all but his heels from a spring avalanche. For two years he taught school and learned to know the mountains near the Upper Arrow Lake, and then entered the University of Toronto, registering at Victoria College. He found relaxation from the strain of an exacting course, pursued with distinction, by summers spent in surveying the wilds of British Columbia, serving as a member of Mr. Arthur O. Wheeler's party and during the past three years acting as assistant to Mr. O. B. S. Wilkie.

It would be extremely difficult to find a man better fitted to represent the Mountain

Province. Always student of books and keenly interested in men and affairs, he is also devoted to life in the wilds, and particularly to Nature on end. The Alpine Club of Canada extends its heartiest congratulations to Mr. Haggen in the confidence that the qualities which make a mountaineer will stand him in good stead even at marshy Oxford.

A Winnipeg Expedition.

On May 24, 1913, the Winnipeg section of the Alpine Club of Canada made a very successful tramp to Bird's Hill, four and a half miles from the end of the Winnipeg Street Railway line. Complete arrangements were made beforehand and no time was wasted, so that the party of twenty people, under the leadership of Mr. McWilliams, accomplished a great deal in the few hours at their disposal.

Dr. Wallace, of Manitoba University, met the party and conducted an interesting geological study, introducing the members to the glacial secrets hidden in the Bird's Hill esker, and to the history of old Lake Agassiz. Other glacial remains in the neighborhood were visited and examined.

Dr. Bell conducted a valuable series of First Aid exercises. In this connection, it is interesting to note that a dozen members of the Winnipeg Section of the Alpine Club have passed the examination for the first certificate of St. John's Ambulance Association.

Another party went botanizing under the leadership of Dr. Peirce. In addition to these occupations, a place was found for the study of map-reading and photography.

Such local expeditions as this are of real value, and should be encouraged in every way. The Alpine Club of Canada should not be a "far-off, divine event, to which the whole creation moves" once a year at midsummer, but an organization in which interest is maintained by members throughout the year, and which is an incentive to the pursuit of the various objects enumerated in the Constitution. Short expeditions, in the mountains or out, may be of immense value. Old moraines lying upon the Winnipeg plains are in their way as interesting and as worthy of study as the glaciers of the Rockies and the Selkirks; photography, botany, and topography may be studied anywhere; and the ability to care for the injured should be part of the equipment of every person who intends to climb.

Miss Norrington's Reply To The Toast: "The Ladies".

A. C. C. Anniversary Dinner, Winnipeg, March, 1913.

The terrible responsibility of answering for "The Ladies" overwhelms me. Just think what it entails in numbers alone! The world's population being, roughly, 140,000,000 millions. I have to account for at least half of these people; for ladies of all races, creeds, colours, temperaments and ages; ladies with the franchise, ladies without it; wash-ladies and ladies who do not; char-ladies and—just ladies; in fact, counting all the fair sex, the estimate reaches the stupendous figure of 70,000,000 ladies, including militants, but excluding mermaids and domestic cats.

And consider, too, the fame and achievements of several of those for whom I have to answer. In order to give you a correct perspective of the subject let me pass them as a pageant before your eyes—a "Dream of Fair Women." Let us begin with "the nicest woman of her day", a noted ancestor of mine, Mother Eve. Despite her name she lived in the morning of the world and was a noted vegetarian, though it is thought she carried vegetarianism a little too far. Then, of course, there are other model wives who helped their husbands: Mrs. Noah must have been very useful with the animals, and we, as alpinists, are especially interested in her on account of her being the first lady to climb a mountain. Ararat is 16.920 feet high. She, like Madame Curie

who helped her husband to radium, must have been of a scientific turn of mind, for, no doubt, she helped Noah to make the great arc light on Ararat. Then, there is Mrs. Lot; though in her later years she was not very progressive, still, these women call to our minds the words of the poet: "Wives of great men all remind us We can make our lives sublime."

Turning to later history, we see immediately Boadicea charging up in her war chariot, and metaphorically, we hastily get away from the knives that stick out so cunningly from the axles of the wheels. I have often wondered, seeing how close to Westminster is the statue of Boadicea, why my friends the suffragettes have not followed her example and attached hat-pins to the wheels of the motor buses. Imagine the joy of sitting inside and seeing your feeble hat-pin hew down a stalwart policeman. Ours might be that joy, if this historical method were adopted.

Among the women famous in history let us mention Queen Elizabeth, the sworn opponent of hobble-skirts, Mrs. Guy Fawkes and Mrs. Christopher Columbus. You may wonder why the two last be included, but recent events seem to prove conclusively that Guy Fawkes was a woman. The probable theory is that she obtained the name of "Guy" from the fact that adverse fortune made it necessary for her to wear last summer's hat—how our sympathy goes out to her! At any rate, we cannot but admire the way in. which she in her day tried to elevate the Houses of Parliament. We cannot but hope that the suffragettes will meet with the same success in their efforts of the same sort.

Mrs. Christopher Columbus had a very wearing time, no doubt, with a husband who would insist upon finding things that had never been lost. She has been very pathetically described as "a widow of the herbal sort", and we must honour her for her tact and faith. History tells us:

"Her husband's absence she enjoyed
Nor ever asked him where he went,
Thinking him harmlessly employed
Discovering some continent."

Next, down the ages, comes Jenny Geddes. She was the first baseball player, and was considered a good pitcher, even though she used a stool instead of a ball and threw at the preacher instead of the first base.

How can I do justice to so great a theme? Poets have long attempted to do so, but without success. In Turkey it is considered complimentary to allude to your divinity as "Thou Moonface". To be sure, such an epithet is more suitable to a chipmunk or to a person suffering from mumps, but even the Turks have some idea of the complexity of the sex. A story is told of an old Turkish seer whose wife one day drowned herself in a fit of temper. The old man went down to the river bank and started up stream looking for her body. "But, Effendi," remonstrated his followers, who thought his mind was unhinged with the shock, "surely by all the laws of Nature thy wife will float down stream." "Not so," said the sage, continuing his way, "She was a woman; therefore, she will go contrary".

The other day I came across a charming little poem by Wilfred Meynell, entitled,"To Her, at Pisa". Here it is in full:

"Thou finished tower of womanhood
Rooted and fast in Nature's good,
Yet reaching, flower-like, to the skies,

The first to catch the sun—his rise—
And when the day's for others done The last to lose the lingering sun.
Thy wall all treasuries enfold
Within their ivory and their gold
Thou canst withstand the straightest siege
Nor asketh aid from this thy liege.
Alone thou standest in thy power
But be towards me a leaning tower!"

But though it be permissible to compare "The Ladies" to the Leaning Tower of Pisa, it is not considered the thing to compare them to any other tower. The "Tower of Babel," for instance, might be taken amiss.

I have done my best, but it is impossible to exhaust so vast and glorious a subject in so limited a time. Had I begun at daybreak I could have given you a four-line resume of each of the following ladies: The six wives of Henry VIII, Marie Corelli, The Nine Muses, The Three Graces, The Lorelei, Cleopatra, Nell Gwynn, Queen Victoria, St. Ursula and her eleven thousand maidens, Mrs. Pankhurst, Marie Antoinette, Mrs. Lochinvar, Carrie Nation. Shakespeare's Heroines, The Women of Weimsburg and Mrs. Crundy. But, as it is already late, let me refer you to the Encyclopaedia through whose pages, as you see, I myself have glissaded so recently

OFFICIAL SECTION

Report Of The 1912 Camp

In 1005 the Dominion Government had carried the photo-topographical survey of the railway belt of British Columbia to the headwaters of the Vermilion River; and in 1904 the first ascent of Mt. Ball was made by the Club's Eastern Vice-President, J. D. Patterson (see Canadian Alpine Journal, Vol. 1, No. 1). These facts, in conjunction with the construction of a scenic motor road from Banff to Windermere, crossing the main divide by way of Vermilion Pass, brought forward the suggestion that the Club's annual summer camp should be held in the vicinity of the pass.

A magnificent site was found on the British Columbia side of the pass, about a quarter of a mile from the summit, at an altitude of 6,100 feet. It was in every way ideal as a camp ground, but was at too low an altitude to give the best facilities for reaching the surrounding peaks, and necessitated a somewhat lengthy tramp through virgin forest before the actual climbing above timber line was commenced.

The dining canopy and official square, consisting of director's quarters, secretary's quarters, committee tent, press tent, tea tent, and cooks' quarters, was pitched in an open glade from which fallen logs and forest debris had been carefully removed.

The square occupied the centre of an island surrounded by two branches of the headwaters of Vermilion River. Immediately outside the square, on the right looking down stream, was the fire circle, where each evening the campers gathered in force and spent the hours between supper and bedtime in song and story and many other kinds of entertainment.

Directly beyond, amongst the trees along the western branch of the stream, were the ladies' quarters. On the other side of the square, across the eastern branch, also in the woods, were the gentlemen's quarters, reached by a natural bridge of a couple of trees from bank to bank, across

which at intervals the camp carpenter had nailed slats. Will anyone who has negotiated this crossing after dark forget the "Cawsway"? Indeed, at that time of night, a favorite method was to cross it on all fours.

On the island also were situated the scouts' tent, the guides' tent, and the tent relegated to ladies for drying their clothes; while just by the trail at the entrance to the camp, but beyond the stream, were the store tents where that prince of caterers, young in years but old in the ways of the camp, Dr. Fred Bell, held sway with machine-like precision, and weighed each lot of baggage as delivered by the packers—relentlessly chalking up over-weights for double charges on a bulletin board, for future treatment by the Treasurer.

The whole was gay with bunting, and the flags of the various nationalities represented flew from poles erected at points of vantage.

Mount Castle, a flag station of the C.P.Ry. seventeen miles west of Banff, was the stopping place of visitors to the camp. Here was a base where a number of tents were pitched to accommodate people arriving too late to reach the Camp the same day. There were sleeping tents for ladies and for gentlemen, a baggage tent and a kitchen tent with a man in charge. Here also were the Packers' headquarters, in charge of our old and genial outfitter, Jimmy Simpson, "Sunny Jim" of the Rockies.

The main camp was situated eight miles from Mount Castle. Of this distance, part was constructed wagon road and part pack trail, or road in various stages of construction. Some forty pack and saddle ponies carried the supplies, baggage, and some of the people to the main camp. The transportation was a somewhat difficult problem owing to the fact that there was no feed for the horses at the camp, necessitating a return of the pack train each day to Mount Castle—a trip of sixteen miles. As the ponies could not stand this every day, only half the number were available, day about. With the excellent managing ability for which Jimmy Simpson is noted, all difficulties were promptly and effectually met, and transport machinery moved on well-oiled wheels.

The Cooks' quarters were in charge of the veteran, Jim Pong, who has officiated at all the Club Camps except one. With a competent staff at his back, he kept the tables loaded and, no matter at what hour parties returned, they were promptly fed and made happy.

The Tea tent was in charge of Miss E. Savatard, the Chatelaine of the Club House at Banff. Ready and cheerful assistance was given by the ladies of the camp, notably Mrs. Henshaw, Miss Vaux, Miss Feilman, and others; and, judging by the crowd that gathered here during the afternoon hours, and the quantities of tea consumed, this popular feature was much appreciated.

The Camp was in charge of Arthur 0. Wheeler, Director, assisted by the Executive of the Club, among whom Dr. A. P. Coleman, President, J. D. Patterson, Vice-President, and Mrs. J. W. Henshaw, Hon. Secretary, were present.

Mrs. J. W. Henshaw was in charge of the Ladies' quarters and the domestic arrangements and, assisted by Miss Vaux and Mrs. McWilliams, the excellent and charming administration made this section of the machinery a perfect sample of tactful skill.

Other Clubs Represented.

The Alpine and Mountain Clubs represented were: the Alpine Club, England, Swiss Alpine Club, American Alpine Club and Appalachian Mountain Club.

Guests.

The following gentlemen were honoured guests of the Club: W. W. Foster, Deputy Minister

of Public Works, as representative of the Government of the Province of British Columbia; J. B. Harkin, Commissioner of Dominion Parks, and R. H. Campbell, Superintendent of Forestry, as representatives of the Dominion Government.

Camp Fire.

The great fire circle represented the altar of worship of the Camp, its fetish, and here gathered nightly all who were in Camp. Mrs. McWilliams acted as chairman of an Entertainment Committee, and each evening a full programme was on hand. An effort has been made to have the various local sections of the Club provide a previously prepared programme for the respective nights. This feature was now initiated and carried out to some extent. Winnipeg produced an excellent mock trial, at which the Hon. Mr. Justice Galt was the prisoner at the bar, accused of grand larceny of camp property. The trial exhibited a most distressing case of justice on the rampage. There was no doubt of guilt, as the goods were found on the person of the prisoner, even while at the bar; and yet, alas, for frailty of human nature, the majority of the jury, being of the fair sex, the prisoner was declared far too good looking to be adjudged guilty, and the verdict of "not proven" was rendered.

Vancouver Island also produced a good evening, and something was done by New York. It is hoped the idea will grow and become an annual feature.

An excellent lecture by Dr. A. P. Coleman gave a graphic illustration of the manner in which the mountain architecture of the Canadian Rockies had been formed. The audience was delighted with the simple and picturesque manner in which this most interesting of all subjects to mountaineers was set forth.

R. H. Campbell addressed the gathering on the subject of forestry, and gave his hearers a clear insight into the value of the work he and his branch of administration are doing in preserving and developing this tremendously important asset of the Dominion of Canada. He also expressed his appreciation of the objects and aims of the Alpine Club, and hoped that all its members would co-operate with the efforts of the Forestry Branch to preserve the existing timber areas of the mountains.

J. B. Harkin gave a most instructive address upon Dominion parks, their boundaries, administration, and ultimate objects. He expressed himself on behalf of his Government as fully in accord with the good work the Alpine Club was doing towards the development of the Canadian Rockies as a world-playground.

W. W. Foster, in a stirring address, dealt with the mountain scenic features of British Columbia, and the policy of his Government to open up the same and make them accessible to the world by means of the creation of provincial parks to embrace the best of such scenery, and the construction of motor roads winding through its midst. He touched upon the beauties of Strathcona Park in the centre of Vancouver Island, and described the magnificent picturesque scenery that would be opened to the public on the completion of the Banff -Windermere road. Finally, he stated that his Government was fully in accord with the excellent results attained by the Alpine Club, and particularly with its expedition to the grandly spectacular region of Mount Robson, to which expedition his Government had been pleased to contribute financial aid, and considered the results attained had been very satisfactory.

On Sunday morning, service was held around the camp fire, at which the Rev. J. J. Robinson, formerly Dean of Belfast, officiated. The Dean's sermon was undoubtedly inspired by the magnificent surroundings of snow-clad peak, towering precipice, rushing torrent, and forested

The "Cawsway". Photo, Miss F. Macmillan

Dr. Coleman's Party For Mt. Ball. Photo, Miss E.B. Fowler

Jim Pong And His Staff. Photo, Capt. F.V. Longstaff

valley. Standing at an impromptu pulpit, draped with the Union Jack, in simple, picturesque language he carried his hearers to the heights and placed them closely in touch with the wonders of creation in these mountains and forests, and reverently dwelt upon the omnipotence of the Great Creator of all things. It was with a feeling of regret his audience realized that his all too short sermon was finished.

The thanks of the Camp are due to Dean Robinson for his very successful assistance in entertaining the members on several occasions when rain held the majority in camp. He was the life of the party, and all voted him a jolly good fellow.

Annual Meeting.

The Annual Reports of the Director, the Secretary-Treasurer, and the Librarian were read and adopted.

The Annual Meeting was of special interest, being the year for the election of officers for the ensuing two-year term. A splendid nomination list had been submitted to the electors by the President, and the largest vote on record was polled. The results showed a good working Committee for the next term of office:

Re-elected President: Dr. A. P. Coleman, Toronto.
Eastern Vice-President: Dr. Fred Bell, Winnipeg.
Western Vice-President: J. P. Forde, Revelstoke.
Hon. Secretary: Mrs. P. Burns, Calgary.
Hon. Treasurer: E. B. Saunders, Calgary.
Director: A. 0. Wheeler, Sidney, B.C.
Secretary-Treasurer: S. H. Mitchell, Sidney, B.C.
Advisors: J. D. Patterson. Woodstock;
C. W. Rowley, Winnipeg;
W. W. Foster, Victoria.

Greetings were received from the Alpine Club's Grand Old Man, its Honorary President, Sir Sandford Fleming, LL.D., K.C.M.G., who wrote in a most happy strain, wishing the Club long life and continued prosperity, and recounting in terse but graphic sentences a few of his experiences of early days in the Rockies, when access was attained by arduous physical toil, before the iron horse had made travel easy and luxurious.

Letters of regret at not being able to be present were read from Dr. J. W. A. Hickson, of Montreal, and the Rev. A. M. Gordon, of Ottawa.

Several necessary amendments to the Constitution were presented to the meeting, and authorized for submission to the ballot.

Attendance at the Camp.

The attendance was very satisfactory, one hundred and sixty-eight persons being placed under canvas. A feature of the last two camps has been that most of the people coming have been present for the full life of the camp. A statement of places represented is here appended:

Canada.

British Columbia: Fernie. Kaslo, Kelowna, Revelstoke, Sidney, Vancouver, Vermont, Victoria.
Alberta: Banff, Calgary, Cowley, Edson, Edmonton, Lethbridge, Lundbreck, Macleod, Okotoks, Ponoka, Red Deer.

Saskatchewan: Saskatoon.
Manitoba: Winnipeg.
Ontario: Braeside, Kingston, Ottawa, St. Mary's, Toronto, Woodstock.
Quebec: Montreal.

Great Britain.
England: London, Nottingham, Wimbledon.
Scotland: Aberdeen.

The United States of America.
District of Columbia: Washington.
Illinois: Chicago, Galesburg.
Indiana: LaFayette.
New York: Brooklyn, New York.
New Jersey: Summit.
North Carolina: Ashboro.
Pennsylvania: Bryn Mawr.

Switzerland.
Interlaken.

Report On Mountaineering And Expeditions.

Owing to the unusually low altitude at which the main Camp was pitched, and the heavily timbered nature of the valley, most of the climbs necessitated a somewhat lengthy tramp through forest before reaching the base of the objective peaks.

Tributary to the main Camp were Storm Mountain (10,330 ft.), Mt. Whymper (9,319 ft.), and Boom Mountain (9,015 ft.), furnishing one-day climbs. Peaks requiring one night out were Mt. Ball (10.825 ft.), and an unnamed peak (10,000+) lying west of Mount Ball, which, it was suggested, should be named Mt. Mitchell, for S. H. Mitchell, the Secretary-Treasurer of the Club.

A subsidiary camp was placed at a point some five miles up Tokumm Creek from its junction with the Vermilion River. At this camp a cook was in charge and a supply of blankets was provided to accommodate fourteen at a time, so that parties could go out daily. The camp was close to the foot of the ice tongue descending from the snowfield and glacier on the south side of the Ten Peaks. It was possible for persons coming to the Prospectors' Valley Camp to ascend to the snowfield and make the climb of Nos. One (Mt. Fay, 10,612 ft.), Two (Mt. Little, 10,293 ft.), or Three (10,088 ft.) of the Ten Peaks. This was done by several parties. In addition, the first ascent was made of the most northerly peak of Mt. Quadra, the one left unclimbed at the time of the Consolation Valley Camp, 1910. The return to Main Camp was generally made by the Bident and Boom Lake Passes, and the valley in which the Vermilion River has its main source.

By far the greater number of Graduating Members made their qualifying climb on Storm Mountain, but any of the peaks enumerated, above 10,000 feet in altitude, were accepted for qualification.

Storm Mountain was most accessible, but proved a long and somewhat uninteresting grind. It was, however, a good test of patience, perseverance, and determination.

Dean Robinson Holds Service At The Camp Fire. Photo, F.W. Freeborn

The following list gives the names of those who graduated, and the peak upon which they qualified:

Storm Mountain, August 1.

Miss L. Hilborn
M. Bright
Miss J. Hastings
N. Lindsay
Miss G. M. Shewell
H. Bennett
R. A. Gray
E. L. Fuller
Dr. A. C. Johnston
Miss Jean Macdonald
Rev. A. H. Sovereign
Miss Corelli
A. H. Bush
Rev. G. S. Provis
G. W. MacKenzie
Miss A. Fraser
A. W. Blake
N. Irwen

Storm Mountain, August 6

Rev. C. E. Clarke
Miss C. Christian
Mrs. W. E. Stone
R. Mclntosh
B. Roy Brethour
R. E. Patterson
Miss H. M. Trenholme

Also climbed:

Miss M. Miller
Gordon Cameron
Allen McKinnon

Mount Ball, August 8

Miss B. Schultz

Storm Mountain, August 3

N. B. Sanson
Dr. W. A. Lincoln
G. C. Chinneck
Dr. H. Anderson

Miss G. Langlois
J. A. Wilson
F. O. Feilman
A. Miller
N. Howard
R. F. McWilliams
Miss G. S. Adam
Miss M. A. E. Clarke
W. H. Chinneck
Mrs. H. Anderson
Miss B. Andrews
L. A. McGillivray
J. C. McDougall
Miss K. McNab
Dr. Mary G. Potter
Mount Little, August 7
Miss Myra K. Ellison
C. D. Creighton
H. McC. Johnson

Mount Fay, August 7
F. L, Major

No. 3 (Ten Peaks), August 7
Miss A. Hay
Miss M. Lang
H. 0. Frind
Miss K. Lang
Miss K. Rice

Expeditions.

A number of expeditions were made daily. Among these may be enumerated the following:

Down the Vermilion Valley some five miles to the junction of Tokumm Creek. The creek joins Vermilion River through a magnificent gorge, or box canyon, so narrow that at several places the fissure, for it seems little more than a crack in the rock strata, is bridged by great boulders that have become wedged across it. It was a feature well worth seeing. A short distance above it, the Vermilion River presents some spectacular falls, where the stream boils through a narrow gash in the limestone and leaps downward for some distance. The limestone has been cut into some interesting potholes by the swirling of the water. A short route to the head of the Tokumm Canyon is found by following the pony trail up Prospectors' Valley. Here, the water of Tokumm Creek leaps at a moment's notice into the depth of the gorge. It was a favorite spot for the parties visiting the gorge to have lunch.

Another expedition led up the valley of the furthest source of the Vermilion River to Boom Lake Pass and through the pass to Boom Lake and to the glacier at its head, the Bident Glacier.

The pass between the glacier and the snowfield to the south of the Ten Peaks, lying between Bident and Chimney Peaks and referred to here as Bident Pass, presents a very peculiar rock tower (see illustration), The expedition had several variations, but was chiefly made via Boom Pass.

Boom Lake is so called from the fact that near its eastern extremity an old moraine, at one time the bounding wall of the lake, now just touches the surface which has overflowed it. It spans the lake in a crescent, some distance from the eastern end, and intercepts the drift wood floating down the lake. The appearance created is that of a lumber boom, and hence the name.

A favorite expedition was to the fine hanging valley lying southeast of Storm Mountain. Here we discovered two charming lakelets most picturesquely situated. A vast precipice walled in the end of the valley, and down its perpendicular facade several bridal-veil falls dropped for a distance of many hundred feet, while the ice of an elevated snowfield could be seen topping the edge of the precipice.

As one travelled the trail leading to the Camp, not far from the pass on the northern slope, a blue-green lake could be seen in the bottom of the valley of Little Vermilion Creek. This lake formed an objective for a number of fishing excursions, and many delicate dishes of mountain trout were served at meal times to the sportsmen and their friends.

Guides.

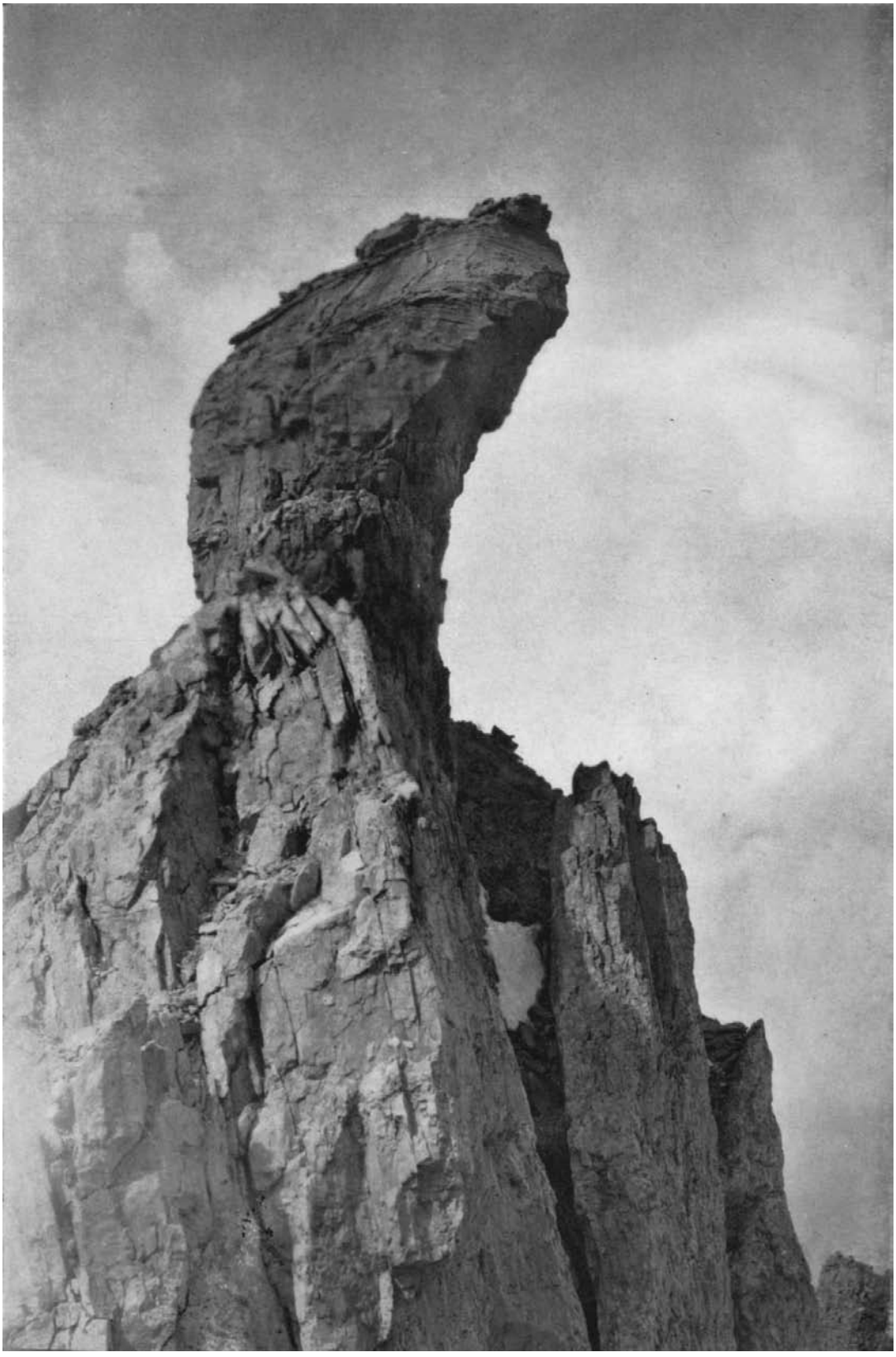
The Swiss guides in attendance were our old and well tried friends, Edouard Feuz, Jr., Gottfreid Feuz, and Rudolph Aemmer. It is needless to say that their work was well done. Two of them were loaned to us through the kindness of Mr. Hayter Reed, who has always, since our inception, been the best of friends to us and has given us many facilities to help make a success of our camps. The third guide we hired at the usual rate.

Important Climbs.

The climbs of importance were: Second ascent of Mt. Ball by a party consisting of Rudolph Aemmer, Dr. A. P. Coleman, Prof. C. B. Sissons, Miss F. S. MacMillan, Malcolm Bright, F. W. Hewton, T. H. Ingram, and Miss B. B. Hume; second ascent of the peak for which the name Mt. Mitchell has been suggested, the first having been made in 1901 by the late Edward Whymper's party, which also made the first ascent of Mt. Whymper; the ascent of Peaks Nos. 2 and. 3 of the Ten Peaks; the ascent of Mt. Fay (No. 1 of the Ten Peaks) : and the first ascent of the most northerly peak of Mt. Quadra.

Accident to Capt. Walker

On the second day of the camp, what might have been a fatal accident occurred. An expedition in charge of Capt. Walker had gone to explore the hanging valley immediately southwest of Storm Mountain. Not finding the object of the expedition sufficiently strenuous for their desires, the party made the ascent of the high shoulder extending westerly from Storm Mountain, descending by the steep rock face directly above the camp. At one portion of the descent the party got separated into two sections and Capt. Walker, while endeavoring to reunite them, stepped on a loose boulder which gave way and precipitated him downward. He fell from ledge to ledge for a distance of about 150 feet. He was found to be so badly injured that he could not proceed any further. Word was immediately sent to the camp and a rescue party promptly organized and despatched to the scene of the accident. Owing to the lateness of the hour, it was found impossible to remove him that night and he was made as comfortable as circumstances would permit on the mountain side.



Peculiar Rock Tower on Bident Pass. Photo, Byron Harmon

Early the following morning, he was carried on a stretcher to the camp over a path cut through the woods for the purpose. Here, he was immediately placed in the hands of Dr. Fred Bell and Miss McPhedran, of the Calgary Hospital. Examination showed his injuries not to be sufficiently serious to necessitate his being removed from the camp immediately, and a hospital tent was arranged for him, where he remained in charge of the doctors and nurses of the camp until it closed, by which time most of the numerous cuts and bruises had practically healed, although he was still unable to move, owing to a serious wrenching of the muscles of the back. A few days after the closing of the camp he was carried out to the railway on a stretcher and, although confined to his bed for several months, we are happy to say that he is now able to attend daily to his business affairs.

Capt. Walker is a very keen alpine enthusiast, and much sympathy was felt by all that his visit to the camp should have ended so painfully. At the same time, we all realize that it was a great privilege to have him with us while the camp was in session, and it was undoubtedly a satisfaction to Capt. Walker to be able to remain there and take an interest in what was going on, which he did from the time of his accident.