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RAMBLES

IN THE

NORTH-WEST

Across

THE

Prairies

AND IN THE PASSES OF THE

ROCKY MOUNTAINS

BY

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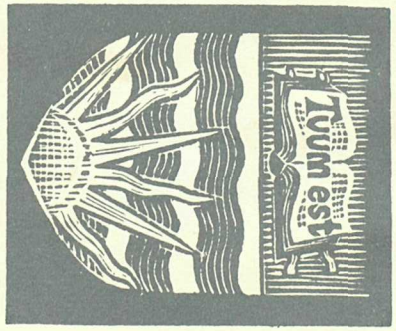

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RAMBLES

Across the Prairie — Up the Bow River — Over the Summit of the Rockies—and down the Kicking Horse Pass into British Columbia.

"See Laggan and die" may be said with much meaning by the citizen of a prairie city like Winnipeg. It suggests a trip over the vast stretches of prairie that intervene between the Red River and Calgary, and an attractive journey of some 80 miles into the Rocky Mountains. Further, it signifies that you have reached a resting place in the mountains from which you can readily start off in any direction to seek and find all that is calculated to charm a summer vacation or business holiday.

A PARADISE FOR SPORTSMEN.

If you wish to hunt you have the dense woods at the foot of the mountains which enclose the valley where Laggan lies. In these primeval forests bears force their way, and many kinds of game find a retreat. If fishing is your delight, the clear, cold rapid waters of the Bow River skirting the village, supply mountain trout; or up the hill, through the woods, about an hour's walk, you reach a beautiful lake, whose beauties an artist would fain place on canvas, or writer describe with pen. Nestling among the mountains, fed by ice cold streams issuing from melting glaciers, apparently near, but miles away, clear as crystal, and waters distinctly green, lies this lovely nameless lake. Already it has become a delightful spot to catch the wily trout. Issuing from this mountain lake a stream rushes, the noise of which is heard far away as it rolls downward with maddening force to reach the waters of the Bow. Even in this seething stream trout is caught.

If science has a charm, there you behold on every side rocks of all kinds, condition and age. In the valley and up the mountain sides you have a most comprehensive flora from which innumerable forms of plant life can be obtained. But should neither sport nor science prove of interest, you may at Laggan climb to lofty snow-capped summits, or walk amidst scenery suited to inspire the most indifferent to all that is wonderful and great.

Having had the pleasure of accompanying some members of the British Association to this enchanting locality, I propose to give the reader our experience across the great Prairie Steppes and through the rugged mountain passes along which the Canadian Pacific Railway threads its way.

THE FIRST PRAIRIE STEPPE.

"All Aboard" was called out, and the warning bell rung for the last time. Slowly the train moved out from the station, quickening in speed till we were fairly under way for a trip across the sea of green that lies on either side of the way to the distant mountains. We were soon crossing the far-famed Red River Valley. The level plain, extending far as the eye can reach, attracted the attention of my companions from a foreign land. They wondered at finding such a heritage comparatively unsettled, and eagerly inquired how a land with such great possibilities remained in obscurity so long. As we rolled on

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the beautiful flowers of the prairie became a source of intense interest to the botanist. Golden compositæ were in bloom on every side. The persistent blue bell, which we found even on the moutains, formed a pleasing contrast to the ubiquitous yellow flowers. Among the clumps of scrub passed were seen the beautiful representatives of the convolvulus family, and near by the handsome prairie rose. "What a country where even garden flowers are wild!" "This is glorious!" and similar remarks were heard as the floral panorama was observed.

At every stop a dash was made to secure specimens from the attractive flora of the Northwest, and sometimes a narrow escape from being left behind was experienced. Long ere the first day closed a fine collection of the innumerable forms of plant life which give such a charm to the beauty of the prairie was gathered. About noon we reached the border of the Red River Valley, over which in primeval days the waters of a vast nameless lake were spread. On the bottom of this, alluvial deposits, brought by western streams, were spread until that lake, held back by a retreating glacier for countless years, at last, when the ice melted, found an exit north through the Hudson's Bay, and left the valley a rich heritage to man. Such, geologists tell us, is the origin of our first prairie steppe, 800 feet above the level of the sea, and some 80 miles wide, with an area of 6,900 square miles. This region is underlaid chiefly by Silurian deposits, of which excellent exposures can be seen at Selkirk, on the banks of the Red River, and at Stony Mountain, a short distance northwest of Winnipeg.

Continuing our course westward, we observed as we passed through the Sand Hills that we were rapidly rising. What a contrast was seen here among these silent monuments of shifting hills to the prairie clothed in richest green, variegated by flowers of every tint. The footprint of a traveller sometimes leads a hill to change its place. For should such a step expose the sand, in many cases held together by very little vegetation, it immediately changes under the influence of wind, which, stirring it about, drives the whole mound before it, and a new monument is raised to indicate the restless nature of these hills.

A hearty dinner was taken at Carberry, and we were soon on the rails again. A short time elapsed before we reached the Grand Valley, and ere long we saw the beautiful blue hills of Brandon looming up to the south. Brandon reached, the strangers were full of complimentary terms in reference to the site and its general appearance. They were delighted as they looked northward and observed the Assiniboine, meandering through the valley, beyond which the land rises with long and gentle slope. They pronounced the location so well suited for pleasure and health, all that heart could wish. We stopped but a short time, and then moved on rapidly, passing over the rolling country which characterizes much of the second prairie steppe.

SECOND PRAIRIE STEPPE.

The deep black mould seen in the Red River Valley is now represented by a more friable and warmer soil. Stones are more frequently seen, and the general outline of the country changed, for we are now on the second prairie steppe, 1,600 feet above sea level, 270 miles wide, with an area of 10,500 square miles. This district and a large part of the third steppe overlies Cretaceous deposits. Among these attractive rolling patches, are homes for thousands willing to till the soil. We steamed on until night settling upon us closed the scene. The next morning we wakened to find ourselves surrounded by a change in the physical features of the district. Over level prairie we were passing again, and nearing Moosejaw. Regina had been passed and miles of level country crossed. Some new plants were observed, a stiffer soil had been reached, and a drier district entered.

We breakfasted at Moosejaw, where a few Indians made their appearance. They were a source of considerable interest to my fellow travellers, who now

stood face to face with representatives of that strange race they had often heard of in England, associated with daring deeds and bloody massacres. Enough was seen here to whet their curiosity for further observation where poor Lo appeared in wilder and more primitive costume. As we now threaded our way over the prairie a new feature appeared. The "runs," or paths, of the buffalos of the past, and every few moments the bleached remains of them were seen. This was a great treat to my companions, who now, becoming exceedingly desirous to hear of the almost extinct buffalo, watched with eager eyes the innumerable paths and bones scattered over the whole country to the Rocky Mountains.

New plants were continually observed, and there was every indication that we had passed into a district with climatic conditions differing from those of regions to the east. We were now approaching the third prairie steppe, and entering a district more subject to drought.

After a three hours' run the monotony of the plains became broken by lakes which appeared from time to time as the journey progressed. Many of these were covered with game, and as the engine steamed along thousands of birds—pelicans, ducks, geese, plover and snipe—rose from the water near the track to seek a spot beyond the shot of sportsmen, who even ventured to shoot from the train at the living mass apparently within gunshot.

C. P. R. EXPERIMENTAL FARMS.

At Secretan the eye, which for many miles had seen no sign of settlement, was relieved by observing a portion of land under cultivation. This is the first Canadian Pacific railway experimental farm, and is one of ten under cultivation this year for the purpose of testing the agricultural capabilities of a vast district, which by some writers has been condemned. No wiser method could have been adopted than that undertaken by the Land Commissioner, Mr, J. H. McTavish, who, by having a portion tilled, sought an answer from nature herself. If the results of 1884 can be received as evidence, the fertility of this western soil is established beyond a doubt. We observed particularly the farms passed during the day, and were surprised at the appearance of both grain and root crops upon them. Swift Current was reached about midday and a stop made for lunch. Here we learned some buffalo had been killed a few days before. The head of one was for sale, and one of our party would fain have made the purchase, but being on the way out he had to content himself with hoping to secure it on our return. Passing westward, alkali lakes appeared at intervals, and as we neared Maple Creek in the evening several were observed. In the distance the white rings of alkali around them, bordered by a distinct band of red formed by innumerable alkaline plants found in these vicinities, presented a peculiar weird-like appearance. Two days had been spent travelling at fair speed and yet we were crossing a prairie country.

THIRD PRAIRIE STEPPE.

This is on the third prairie steppe, which is said to begin at Moosejaw and extend to the foot of the mountains, with an average elevation of 3,200 feet above sea level, 465 miles wide, and embracing an area of 134,000 square miles. At Maple Creek the grass was excellent and seemed well fitted to afford superior pasturage for cattle. Here we took an evening meal, and while waiting to start, the passengers were entertained during their short stay by Indian boys, vieing with each other in striving to knock, with bow and arrow, a nickel from the stick on which it had been placed. The successful marksman kept the money.

At this place my English companions had a good opportunity to see Indians in primitive costume and highly painted faces. One of the party was rather surprised to find these aborigines attempt to speak to him. What was the subject of the abortive conversation we did not know, but were left to conjec-

ture from expressive signs made. This spot was one of the most interesting we had stopped at during the day, and it was with regret that we heard the whistle for a new start. Night soon enveloped us after leaving Maple Creek, and when we awoke the following morning we found ourselves near Lathom, 750 miles west of Winnipeg. At Crowfoot Crossing, a short distance from this, a settler rode over to the train while it stopped for a few minutes to take water. We interviewed him, and found he had settled upon a place a short distance from the track, and had been excedingly successful in his farm operations so far. But his highest hopes were built upon the discovery on his farm of an excellent seam of coal 10 feet thick. He was very anxious to have us visit it, but circumstances would not permit. Several sons—I think four—are with him, and thus separated miles from any other white settlers they are the pioneers in this vast tract of untilled soil. The influence of the Bow river, which comes near the track here, is easily perceived, The pasture is excellent and appeared as if vast herds might be easily maintained upon it.

GLEICHEN—A SPLENDID C. P. R. FARM.

Breakfast was taken at Gleichen, where the last experimental farm is located. In fact a better term would be model farm, for the surroundings were such as presented a most attractive appearance to the observer. Splendid roots were growing, fine fields of waving grain ripening, and nature decidedly affirmed by prolific results the fertility of the soil at Gleichen. At this place on a clear day the traveller gets the first view of the Rockies about 100 miles away. But the weather was unfavorable for us. It was now overcast, bright sunshine had accompanied us for two days, but gloomy forebodings concerning the weather for tenting seemed near. Six hours and we would be in Calgary, in the vicinity of which we hoped to tent. We were scarcely out from the last station when rain poured down and little of the country was seen. However, it was observed to be rolling, and clothed in rich green. The thick, bunchy buffalo grass was common, and we readily perceived that we were in the great pasturing district of the Bow River, a region well adapted for extensive ranches.

APPROACHING CALGARY.

As we neared Calgary my friends could not refrain from expressing their surprise at the magnitude of the country. Two days and a half steaming away, and yet only nearing the foothills of the mountains. "What a region, and what room for a vast population!" were remarked. Calgary was reached about 2 p.m., and it was raining heavily. Still no hope for tenting. We landed and sought an hotel for the night, with the expectation of seeing better surroundings next day. We were told that it had been raining nearly every day for weeks, and we knew it was only a few days since the bridge over the river was swept away and much damage done to the track beyond. The rain continued all afternoon, and it did seem as if the valley might be submerged before many hours. With difficulty I called upon a number of friends near the hotel. They tried to fan my faded hopes by saying "it was exceptional to see such rain in Calgary—that this was a peculiar experience, and that the rain would continue but a short time." At the hotel the quarters were somewhat contracted. The wind blew with terrific force, and whistled through the light fabric erected as a shelter to weary tourists for the west. Yet, after all, there was something romantic in the storm; and we all enjoyed listening to the battering rain and whistling wind, which indicated a terrific night without. Morning came, and still rain, but more drizzling. The sky appeared to be clearing in the direction of the mountains (invisible), and we were inclined to prognosticate fair weather. Notwithstanding the rain we started off to search a suitable spot for the tent. To tent we came, and tent we would if the weather was at all reasonable. Three miles beyond Calgary, on the banks of the Bow River, not far from a point honored with the name of Shagganappy, we selected our ground.

At this place a couple of bachelors, whom we at once judged to be honest men, had "squatted" and built a "shack"—a small log house. They had under

cultivation about eight acres, which was largely sown with vegetable produce. We thought it prudent to camp near the "shack" so that these men could have an eye over our effects while we wandered far up the river in search of information upon the botany and geology of the place. We never regretted this conclusion, and will not forget for some time the kind attentions of Messrs. Laurie and McAuley, during our stay in this beautiful valley of the Bow River.

At several places along the Bow the valley widens, forming a sort of oval-shaped area. This is known as a "bottom," and such places are marked by great fertility; consequently, our friends of the first "bottom," west of Calgary were well repaid by handsome yields in their crops. During our stay they were getting six cents per pound for potatoes. The "shack" was rather an interesting spot; its inmates had been extensive travellers and were well able to record many an incident in their wide experience suited to rivet the attention of their hearers. Though much was seen in the little log house to render it comfortable and the general appearance reflected credit upon its inmates, still it lacked many of the attractive features that are seen in a house that is graced by the presence of woman.

Having settled on our future rendezvous we returned to the village, packed up, and luckily got our things on board a train going west with workmen to repair portions of damaged track.

The tent was put up. One of our party would not venture upon camp life under such damp conditions, but determined to remain at Calgary and enjoy the attractive luxuries of the hotel until the weather became more settled. Everything being thoroughly settled, we made a short trip during the afternoon up the bank and returned in the evening—prepared a primitive tea and enjoyed it well. The dishes being washed, if that term can be applied under the conditions of tent life, and all things put in order, we repaired to the "shack" for the purpose of being regaled by the rich experiences of our bachelor neighbors.

EXCITEMENT.

One of our party did not at first come in, being engaged in making some changes in his garments. While doing this it was thought that it would be a good joke to step out and fire a shot near the tent, so as to alarm the inmate. No sooner was it suggested than one stepped out—in a moment both barrels of the shot gun were emptied, and, the sportsman dropping, hid behind a bush. It was well he concealed himself so quickly, for scarcely had the echoes of his gun ceased when our companion was firing as rapidly as he could from his revolver in the direction from which the shot came, for, as he afterwards said, he thought it might have been Indians that had disturbed his peace. The concealed friend shouted out that it was he, and all alarm ended.

We talked far into the night, and many a thrilling adventure was described, which, repeated in England, will command more attention than in a country like the Northwest, where such events are of more common occurrence. The next morning found some of us earlier about than we desired, for scarcely had dawn appeared before the writer was astir, and running along the track striving to prevent a chill which had begun to crawl upon him and disturb his repose. As he ran along working up heat he failed to see much that was attractive in camp life. The huntsman rose at an early hour, as he said, to seek game for breakfast, but we afterwards learned he also had experienced a chill. Our bachelor friend seemed to possess more animal heat, and was permitted to doze on. Having restored comfort and attained a sufficient temperature to rest I returned to the tent, laid down and enjoyed a pleasant nap. I may here say that none of us experienced a want of comfort again. We made some changes in our method of sleeping, which enabled us to rest each night and enjoy a most delightful sleep, seldom awakening until the sun had well entered upon his course.

SCIENTIFIC WORK BEGINS.

The next day was beautiful ; the storm had passed away, and it was our lot for the remainder of the journey to experience most delightful weather. We were soon on the way westward to explore a fine exposure of what is known to geologists as rocks of the Laramie series. The deposits of this period commence about the Blackfoot crossing and extend to the mountains. This escarpment is at the track, and forms a portion of the bank of the Bow River. What a delightful morning walk it was as we passed up the track ! High above us to the left was the lofty hill, about 300 feet high, while to the right the rapidly flowing Bow rushing eastward filled the air with the noise of its waters. Having reached the fossil haunt we climbed to the steep bank and soon observed that we would not require to move far from that locality to secure many representatives of the primeval life in these deposits. In a short time our hotel companion joined us, and work was thoroughly entered upon. Great fragments of rock were observed, made up of a mass of clam-like shells, and some not unlike a snail. In fact these masses were so compact that it took considerable practice to break out a good specimen. How carefully my friends packed the treasures, that they proposed taking over the sea with them. Even the botanist became so interested in the fossil wealth of this exposure, that for a time he forgot to mark the charming flora around him and made a fine collection of fossils.

There was danger here. At short intervals water burst out from the clay beds which lie between the layers of sandstone, and ran down the steep precipice above, warning us that all the conditions necessary for a landslide were present and that any moment the earth above us or beneath our feet might move river ward. We watched the face of the hill carefully, and looked out a supposed retreat should such a change occur. Had it not been for former slides we could not have climbed this hill so far up as we did. Three distinct slides were perceived, and we felt convinced that after the continuous rain of 1884, another might occur at any moment. At this very time some distance further up men were removing one from the track which had fallen some days before. The whole bank on this, the south side, shows that many slides have occurred in times past. Some seven varieties of fossil shells were secured, and several interesting specimens of leaves and fruit of plants obtained, which flourished when these Laramie deposits were formed. With well loaded bags we returned to the tent, prepared the evening repast, and after a talk in the "shack," retired well prepared to enjoy all the delights of a good night's rest. Another glorious day was ushered in and a long tramp further up the track undertaken to a locality which the writer thought would supply excellent fossil leaves, for he had visited it the year before during the construction of the road and obtained good results. In this we were somewhat disappointed and had to be contented with obtaining specimens less readily than at first anticipated. However, a good collection of fossils from the Laramie was obtained. The botanist too had done well. In the valley of the Bow near Calgary, he found beautiful wild geraniums in bloom. Near our tent, on the hillside, monkshood was common, and far up the hill on its very summit the wild onion flourished. Many other attractive plants were observed and a large collection secured. One evening while returning from Calgary a magnificent view of the Rockies was seen. T'was near sunset. The lofty peaks with snow capped summits, bordered with silver sheen, were distinctly seen, and the golden tints of the western sky formed a background which added grandeur to the glorious scene.

As I walked over the valley in which the town lies, feasting upon the matchless sight of the sun passing down behind the distant mountains, the murmuring waters of the Bow River greeted my ear. At intervals happy youth dashed by me on native ponies, and cantered across the beautiful valley in which the fragrance of prairie flowers was borne on the summer air. I seemed enveloped by all that was suggestive of joy and happiness, and the place appeared more like fairyland than a young city on the borderland of civilization. Such scenes

are not uncommon in Calgary and give it that charm which renders it so attractive to those who call it home.

LEAVING CALGARY FOR THE MOUNTAINS.

The next evening, after having waited for some hours at Calgary on account of the train from the mountains being detained by the falling of rock on the track, we moved off for Laggan.

It may be of interest to the reader to learn how all the traps were brought from the "shack" to Calgary. A kind friend in the town offered to bring out his pony, which I may say here was well worthy the reputation it had as an active, gentle and hardy horse, although a few days before, while cantering over the prairie, it suddenly stepped into a badger hole, careened and left its rider gazing heavenward with some broken bones. Wishing to take a pole we had been using, and which answered our purpose admirably, we rolled the tent and several other wraps, such as blankets, etc., around it. The bundle was no small object, being something over seven feet long and a foot and a half thick. The pony arrived. The immense pack was brought over to the gate, and there examined very suspiciously by the horse. His neck was patted and some encouraging words repeated, while two of our party raised the burden on to the saddle. It will be some time before the sharp inquiring look given by the horse at that bundle, as he turned his head from side to side to take in the situation, will be forgotten. St. George became restless, and the tent extremely movable, but the master held to the bridle and endeavored to settle the nervous condition of his charge. The pony seemed no longer under the control of gravitation, but moved from side to side as if without weight. This could not last long, for the bundle had assumed an oblique position about parallel to the axis of the earth. But things had now reached the worst phase. The pony ceased to be disturbed by the unwieldly burden, and with one assisting to balance, moved along quite unconcerned till the station was reached.

Shortly after starting from Calgary, darkness closed in upon us, and all scenery was cut off for the night. Still through the darkness we could discern something of the beauty along the way. Following the Bow River we continued our whole course, crossing and re-crossing it from time to time, slowly but surely rising as we neared the mountains, lying 50 miles beyond Calgary. Before day had well dawned, we awoke and beheld the lofty peaks of mountains on every side.

We reached Canmore, a place of great interest and beautiful location. There was not enough light to fully realize the scenery here, but in the gray dawn we caught a glimpse of its surroundings—beautiful, inspiring, and sublime—while from every mountain the echoes of our engine whistle seemed to come. Farther on near Duthil we saw a group of fantastic figures, which, as we approached, proved to be earth pillars. They stood on the hill side like sentinels, each with its stoney cap, which has prevented the rain from wearing the top down while water wore away soil around the sides until an upright pillar of earth is left 15 to 20 feet high.

BANFF PARK,

one of the most attractive places in the Rockies, was soon reached. This is likely to be a great resort for tourists when its wonderful natural attractions are fully known. Here the valley of the Bow River widens and forms a beautiful park containing several thousand acres, through which the river passes with less current than in many parts of its course, as if resting from some of its past maddening efforts in forcing its way through the mountain pass. At this point the Cascade Mountain towers heavenward over 5,000 feet above the track. Dashing down its almost perpendicular sides rushes the seething stream which has given the rocky elevation its name.

About five miles north-east of the station there is a beautiful lake, with water clear as crystal, and teeming with fish. It is about 20 miles in length, somewhat circular in shape, and over a mile in width. Lofty mountains on every

side add to its beauty, and make the scenery of the place all the most exacting could desire. A beautiful beach skirts the lake, and along the shore for a short distance out the water is comparatively shallow, but deepens quickly beyond. Across the river south-east of this station about three miles there are thermal springs showing temperatures of 95°, 110° and 114° F. These are impregnated with sulphur, and no doubt possess mineral characters of medicinal value. Here at one place, about 200 feet above the river, an opening occurs in the rock, large enough to allow a person to crawl in. Entering this you can descend some 40 feet by means of a ladder, and find yourself in a large cone-shaped cave 30 feet wide at the base. The foot of the ladder rests on a ledge of rock, which extends half way around the circular cave, and is wide enough to allow one to move about. The bottom of the cave is covered with about 4 feet of water at 95° F., bubbling with great force through a bed of dark colored sand. This would be much warmer, but cold water is continually falling into it from the roof of the cave. Innumerable needle-like crystals on the sides of the cave give it a most attractive appearance.

Very few tourists pass Banff without visiting this wonderful cave and bathing in its tepid mineral water. Near these warm springs others can be seen with water very little above freezing point. The rocks on every side indicate times of great upheaval, and show in many places strata folded in a most complicated way.

LAGGAN REACHED.

At 8 a. m. we steamed into Laggan, and in a few minutes our baggage was unloaded. We looked around for a new home, and concluded to put up our tent near the station beside the mounted police, who we thought would be able to watch our effects while we made excursions into the Mountains. Up went the tent, and by 10 o'clock we had completed breakfast. Laggan at the time of our visit was as far as the passenger cars went, but the track extended 13 miles farther.

Some fifty dwellings made up the village, situated on the north side of Bow River, upon ground which slopes gradually up from the river, and affords a very good site for a small town. The mountains over the river, apparently near, but in some cases many miles away, present a magnificent view. The outlines of four are well marked, and can readily be seen. Mount Laggan, to the left, looking south, by measurement, is 6,500 feet above the level of the track, and 12,000 above sea level. Its summit is covered with snow for about 1,000 feet. This forms the so-called Laggan glacier, the end of which is well defined, and though appearing to be but a few yards deep, has been found to be 210 feet. Mount Dawson, a short distance to the right, is very distinct, and being nearer appears as high as Mount Laggan. Two large patches of snow lie near its summit. Still farther west another mountain, with more fantastic outlines than either of the preceding, is observed. It has several peaks, and likely is a considerable distance away. Patches of snow appear at various places upon it. Farther to the right as you look southward, but apparently near, a fine example of glacier is in view. To the observer this does not appear to be over two or three miles away.

One of our number, who was determined to stand upon a glacier, was rather surprised when told that this was twenty-five miles distant. Behind Laggan, on the north side, mountains are also at hand, but none passes the grandeur and well defined outlines of those beyond the river. We longed to scale some of these lofty heights, where, bathed in a rare and cool atmosphere, we might catch a glimpse of the wonderful panorama to be seen among these rugged fastnesses from an elevated position.

Our first day passed pleasantly, and high hopes of the visit began to be entertained. The botanist's eyes flashed with delight at the thought of the variety of Alpine plants that likely bloomed up the sides of these hoary sentinels in the Bow River Pass. To those of us intent on the nature of the rocks, the summit gained meant much, and to the huntsman the dense woods girdling the

mountains seemed to present great attractions. Wild goats were said to pick their way beyond the line of pine, Rocky Mountain sheep were reported to have climbed these rugged heights, and there was every reason to believe that the black bear had made his haunts in the deep thickets that lay between the river and mountains, and who could number other game that might frequent these solitary spots. One feeling pervaded all—to stand upon the summit of a mountain which seemed to pierce the very clouds.

COMMENCE TO ASCEND MOUNT DAWSON.

Another morning dawned, and all nature seemed to present opportunities for the task set apart for that day. Breakfast was hurriedly prepared, a lunch put up, and we on our way by 8 a.m. Up the track for more than a mile, across the second bridge we went and entered upon the work of pushing our way through the thicket of woods. Fallen timber lay on every side, and the pathless forest presented a most difficult obstacle to overcome. We were in no hurry, for the whole day was before us, and the mountain seemed near. Every few moments a halt was made for the botanist, who was continually detained by attractive specimens. A new flora was surrounding him, and we were not surprised at his delays. Here I saw the Labrador tea plant (Ledum latifolium) which I found common on Swampy Island, Lake Winnipeg, and many other beautiful plants were observed. On we marched. Three hours passed, and still toiling up the hill through a dense forest which was now almost impenetrable, we began to be impatient, and frequently charged the botanist with delaying our progress. He seemed to pay no heed, but dashed ever and anon after another plant, out with his glasses, and began to revel in the beauties of the new treasure.

We endured the delays another hour, when fortunately an unforseen turn of affairs had a good effect on the tarrying botanist. Two of us had proceeded some distance from the others, and while waiting, the writer discovered foot-prints of a large animal. The moss was torn up and there was every indication that some large creature had done it. The hunter at once announced that a bear must be near. "Here's a bear's tracks" was shouted. In a few moments the four travellers were together and a consultation held. There was but one opinion regarding the cause of the disturbed moss. It was attributed to the work of a bear, and that too, quite recently. "A big one—see his claw marks," and similar remarks were made. A new mode of procedure was adopted. The huntsman with his Winchester led the way, then came the English geologist, carrying a large revolver and an immense dirk knife: third, the botanist with his revolver, and last the humble writer with a geological hammer as his defence. It was agreed that the first man that ran should be shot down. "If it is a grizzly," says one, "it will take us all." After several earnest and serious remarks had been made the line of march began with far more attentive listeners than before. At the least crack in the bush a halt was made, and eyes and ears were on the alert for the foe. One even got his olfactory nerves to such a fine condition that he demanded a halt, for he was sure he smelt a bear. There were no more delays by the botanist. The discovery of these large foot-prints had a most salutary effect. He never was seen last again, third was his place, and be it said to his honor he kept it well till it was decided that no bear was likely to be seen that day.

On, on, on—the mountain ever near, distinctly seen through the trees, but yet far away. Finally, after climbing hours up through the dense woods, we heard the maddening roar of a cataract, pushed on and reached a large stream rolling down the mountain side with tremendous force. We followed along the bank lined with trees until we felt sure that we had missed our course—that this stream would cut us off from the mountain we set out to ascend—and so numerous were the trees, that we could see no distance around us. We debated the position for a while, and at last concluded to retrace our steps along the banks and follow farther north. We proceeded a considerable distance down and reached an open space in the woods. From this we could not ascertain

whether we should cross the wild current or keep up the side on which we were. However, discovering a small Island in the middle of the stream to which from both banks fallen trees afforded a passage, and imagining that once up the high bank (200 feet) on the opposite side we could better realize our position, we concluded to cross the seething current which dashed madly down the mountain side. We at once saw that though this stream was not over three feet deep, filled with large fragments of rocks, and about forty yards wide, yet if anyone slipped into it he could not escape certain death. The writer first entered upon the natural bridge. Slowly, cautiously, he walked over the knotty, slippery, barkless log, wet with the spray dashed continually upon it by the maddening stream which rushed below. The island was safely reached, the second bridge crossed with equal caution and *terra firma* gained. The huntsman passed over as readily, but it was otherwise with the botanist and geologist.

One placed himself astride the log and by a series of lifts succeeded in reaching the island, but not without having his suspended feet thoroughly wet with the surf as it lashed under the log, and from which it was a very difficult thing to keep them as the log was only three feet above the stream. But the geologist who announced "I will run no risk," having stretched his full length on the log began the arduous task of worming his way across, and after a trying effort reached the island. At the second crossing the fallen timber was not so large, and the passage could not be made in this humble way. Here, two small trees, side by side, formed the bridge. To cross there, it was necessary to put a foot on each and walk carefully along. The botanist did not require to play hobby-horse, and soon landed safe, but his friend looked suspiciously at the weak support; and when he saw there was no opportunity to slide over, started, after some faltering attempts, and in stooping posture, with extended arms as if ready to fall and grasp at something should circumstances require it, proceeded trembling on the perilous crossing. Four feet from the bank he made a lunge, caught the long grass in his grasp, while the dashing current gave his feet a switch, and once more almost breathless, he found himself safe. The cautious efforts provoked roars of laughter from us, who sat upon the banks patiently waiting to resume the march. Near the foot of the mountain we soon ascended the high bank and pushed our way toward the mountain, and finally, about 4 o'clock, reached a muskeg from which we observed that we were now at the foot proper of the mountain, and that another day must be devoted for the completion of our work. These great elevations upon which we had been climbing for hours, formed a series of steps to the mountain proper, and no doubt were the debris (moraine material) left by glaciers which long ages past moved down the mountain ravines and joined the magnificent river of ice that wended its way along what is the present bed of the Bow River. As these glaciers retreated into the mountains, driven back by a warmer climate, they left the great piles of stone, etc., up and over which we had been toiling since we started.

Here we beheld a most marked illustration of what changes had occurred in these mountains at the foot of which so many heaps of moraine material lay. One glacier still remained, and in lonely splendor looking down upon us from Mount Laggan, gave a clue to the story of a period long receded into the past. It recalled to us glaciers long vanished from the scene—rivers of ice that had been forced by great climatic changes in this region to release from their icy grasp the immense piles of loose material we had climbed over that day, and now it alone survived the change, but much diminished in length, while others passed entirely away, retreating farther and farther till all that remained of them was the debris they carried along in their course, meandering down through the rugged ravines. After a short rest we began to retrace our steps. The crossing was soon reached, and a renewal of great laughter while our friends recrossed the boiling current. After a long and tedious march we found ourselves nearing the edge of the woods. Here we obtained a most peculiar looking fungus in abundance (Morchella esculenta), which the hunts-

man declared edible. Many of these were collected and carried to the tents. During the day he had shot several prairie chickens, so that on our return there was every prospect of a good meal. Home was reached about dark, and although we had not effected what we set out to do, still a great deal of information had been gained regarding the flora of the district, the formation and nature of moraine material, and the great changes which had occurred in these mountains since the glacial period. It would be difficult to describe our evening meal after this tramp and others which were taken. It was a sort of heterogenous meal, combining some characteristics of breakfast, lunch and dinner. A leading feature on this occasion was a tempting dish of the cooked fungi. All partook of the interesting dish but the writer, who thought it was wise that one should be in a position to pen an article of how the hearty partakers fared after the experiment of eating was over. At the morning meal all were present, and there was no difficulty after that to find a ready demand for a fungus, which was considered to be one of the finest treats we could secure. On retiring for the night it was decided to rise early next morning and attempt the mountain again, for we felt sure that it could be done in a day if no loitering occurred.

MOUNT DAWSON ASCENDED.

After a good night's rest we rose early, and were by 5.15 a.m. again on the way, determined to reach the summit of the mountain which we had failed to ascend the previous day. At 9 o'clock we were over the "crossing," and had passed up and over several of the great heaps of moraine material, which form the series of steps from the Bow River to the foot of the mountain. On this occasion the geologist was unexpectedly delayed in his humble method of reaching the island. When about half way across, a knot caught his vest, and for a time it seemed that he was a fixture, being neither able to go forward nor backward. But at last, by a peculiar arched-like motion, not unlike the movement of a geometer caterpillar, he relieved himself, and for a third time was safe. Another hour and the end of the first day's work was reached. We thought then that we were almost at the foot of the mountain ; but, alas, the clear rarified air had deceived us. We toiled on till nearly one o'clock before we had passed out of the dense wood that girdled the mountain.

The summit was now in full view. We had passed the line of tree growth, and the way appeared clear. It was simply a matter of climbing now, and seemed a pleasant cont ast to the toilsome march we had experienced in pushing our way through the thick wood and over fallen timber. The journey became exceedingly interesting. The flora was rapidly changing. Plants which had bloomed weeks before in the valley were now only in flower. Here we were able to obtain specimens in bloom that we had not hitherto been able to secure. Large forms in the valley were represented by stunted types, and many new flowers began to appear. Far up the mountain side we found a most beautiful heather in bloom. This was found even beyond the first snow we passed, and presented a lovely sight with its bright white flowers. It was very steep climbing now, but the footing was good. Along the banks where a mountain stream had at some time flowed, we continued to follow for several hundred feet. The banks of this deserted stream were covered with beautiful flowers, belonging to the genus saxifraga and several Alpine genera. As we ascended, the view became charming, and as often as we halted to take breath our eyes feasted upon the grandeur of what we saw lying in the valley below. We could not proceed far at a time before we became quite breathless.

Within 1,000 feet of the top we reached a beautiful level spot between the mountains. It was like a park, and contained about six acres. Here we saw traces of mountain goats. Before we had reached this we clambered over some wonderful piles of loose stone that were either the monuments of extinct glaciers or heaps formed by the action of frost upon the lofty sentinels on either side. From this attractive elevation, there was a magnificent view. In the rear, apparently quite near, a glacier was very distinct, and far up a deep canon in

the mountains a rich green-colored glacial lake appeared. From this charming spot, where we would fain have lingered, we entered upon the last 1,000 feet. It was very steep, and up such shaly rock that we were forced to separate and climb the mountain abreast of each other, so as to avoid the danger of starting the loose rock which, rolling upon those following, might lead to serious results. While climbing up along the sides of the ravine before reaching the natural park, the sky clouded, and for a time the mountain top seemed above the clouds that rested upon the side in a line with the first snow. Fearing clouds might settle upon the mountains while we were there, and cause us to loose our way, we had provided ourselves with paper which we intended to tear up, and, scattering the pieces as we ascended, leave something on our way which would aid in our return. This was unnecessary, for the wind cleared away the clouds long before we reached the summit. We continued climbing up this last and steepest part of the journey, working our way from point to point as best we could. We seldom could go farther than some fifty feet before we were breathless, caused by physical effort and the rarity of the atmosphere. When about 500 feet up it was evident that unless some marks were left to indicate our route we certainly would loose our way on returning, consequently at intervals we erected small cairns until the summit was gained at 4.15 p.m., ten hours from the time we started. Here we stood upon this lofty summit after the toilsome climb, amazed at our surroundings.

A MANIFICENT VIEW.

The barometer read 21.4 in. Who could describe the magnificent panorama that lay before us? Far as the eye could reach snow-clad summits of other mountains appeared, and glaciers, with slow but certain motion, were gliding valleyward. Down in the deep ravines lay lovely nameless lakes of green, fed from the glacial streams of mountains near. The beautiful Bow River seemed like a small stream in the valley beneath us, wending its way among the spruce and fir trees that bordered its banks. Mountain streams of considerable size were like silver lines passing through the thick foliage of firs. The houses of Laggan were as one, and we pigmies on the mount could not be seen, though some were watching for us with glasses for the greater part of the afternoon. While upon this vantage ground of splendor, our souls thrilled with glorious scenery around, an avalanche fell from a lofty peak in the rear. The air was filled with the awful noise as it echoed and re-echoed through the deep valleys on every side. It seemed as if the very mountain on which we stood was unstable and might readily change.

The space upon the summit was comparatively small. After taking in the situation as well as we could under such wonderful conditions, sixteen shots were fired in succession, and the name Dawson given to the mountain in honor of the distinguished Canadian geologist of that name. Upon the lofty pinnacle a feeling of awe came over us, and we felt in the presence of all that was calculated to set forth God's greatness and glory in His works. One of our party took from his pocket a Bible and read aloud a chapter from Job and one from the Psalms, setting forth the wonderful works of the Creator. We would fain have lingered in this sacred place, but a long and weary walk was before us ere that little village in the valley could be reached. The descent was begun. Near the foot of the last elevation considerable excitement took place in throwing stones at prairie chickens. They were so tame that the sportsman considered it *infra dig* to shoot at them, and undertook to secure them in this primitive way. Some were bagged and the march continued. Among the rocks here we saw a peculiar rabbit-like animal. It made a most weird sound, that always seemed to come from a different spot than where the creature was. This no doubt is the Little Chief mountain hare (Lagomy's principes).

A PATHLESS FOREST.

Pushing on downward we soon reached woods such as I never undertook to penetrate before, and entered upon a perilous journey. We had taken but a small lunch with us in the morning. This had been eaten on the level elevation

before we started to ascend the last 1,000 feet. The afternoon being well advanced a desire for refreshments was experienced which, alas, we had no means of satisfying. On we dashed, jumping over logs lying in the way, and forcing our bodies through almost impenetrable underbush. Rain had fallen since we had left this place in the morning, and we proceeded but a short distance before we were quite wet. It seemed to darken quickly, although only about 6 o'clock, and fears were entertained of having to spend a night in the gloomy forest. The sportsman had his prairie chickens, and we felt that if it came to the worst we could endure till morning as far as food was concerned. Doubts arose regarding our course. It was evident we had entered the thicket at the wrong place. The botanist carried a compass, and telling us that he had taken repeated observations on the way up, we at once appointed him guide, and expressed our willingness to accept his decisions. We were now becoming weak with hunger. This can be readily understood if the reader thinks for a moment of the rough nature of the way we were travelling over, jumping, climbing, slipping and falling. We all owed much to gravitation in that descent, for it certainly gave much assistance to our wearied limbs. Two hours were now spent dashing desperately along, brush snapping beneath our feet, and scarcely a word spoken, save, "Are you sure your course is correct?" What a gleam of delight flashed our faces when we discovered an apparent opening in the dense mass of trees. Sure enough, it was getting brighter, and the darkness seemed to lessen. "Here we are again," shouted the carrier of the compass, "but we are at the east side of the muskeg."

With a feeling of relief we halted and looked around to find where we had entered this part of the wood in the morning. We eat greedily the crowberries which grew on the sides of the muskeg, and felt somewhat strengthened for the long walk that still lay before us down through the woods to the valley below. This muskeg contained about four acres, not a tree on it, but dense woods on all sides. It formed a sort of shelf on the mountain side. We now had hopes of seeing Laggan before darkness mantled our way, and were exceedingly anxious to reach the "crossing" as soon as possible. We resumed the march down the deep side which began a short distance from the muskeg, snapping branches, pushing through the underbrush, jumping over logs, forcing our way through a thicket which seemed darker and more impenetrable than the last. One hour and we reached the second clearance that marked another shelf on the mountain side, and also a small muskeg. We knew then that our next landmark would be near the crossing. By this time it was getting quite dusky, but we hoped to reach the rapids before darkness obscured our way.

This last march was a complete failure to strike our expected point. The roaring noise of the mountain torrent was heard long ere we reached it; but alas, when we came to the stream it was at a point far north of the crossing, and down the rapids. We certainly had no energy to dissipate in useless walking, but were necessitated to toil up along the seething stream to reach the natural bridge which spanned the turbulent waters.

The writer and huntsman readily passed over, and wearily sat down to await the attempt of the other members of the party. We were too tired to enjoy the scene which took place. Our friends crossed in the usual cautious, humble way, but with more difficulty. There was less strength in worming over the body of the one and in lifting the other by a series of efforts. We could not refrain from laughing, tired as we were, at the primitive mode of progression, and the moment all were across we moved on for the goal. Few words were spoken. It seemed as if our energies were numbered, and that every effort lessened the staying power of each. We were now nearly opposite Laggan, south about a mile, and high above the valley. The way was still through forest for nearly two miles, and after that one and a half along the track. Darkness was settling upon us rapidly, but we had reached well known land marks of the previous day, and were soon on the hillside, where we picked the "morels" already referred to. It was too dark to see any now, and our

energies nearly gone; another mile of toiling along the path skirting the Bow, and the forest tramp ended.

By the friendly light of the moon we kept our way; very few words were spoken. We had reached the end of our strength, and it was necessary to husband the few remaining "foot pounds" the best we could, for there still remained over one mile along the track after the Bow was crossed. What a relief was experienced when we stepped on that bridge over which we came some sixteen hours before; ten of these had been occupied in climbing the mountains, and over five in descending it.

We reached Laggan a few minutes after ten a.m., tired, wet and exhausted. Some members of the mounted police, who were tented near us, kindly assisted us in preparing something to eat and drink. Four men more hungry than we never sat at a table. The meal was simple, yet hunger gave it a relish almost unknown to any of us. The normal condition of our bodies being restored, the silence was soon broken, and each testified to his hopes and fears during the feat just accomplished.

Wet and tired as we were, there was some fear that the following morning would find us much the worse of the ordeal we had passed. We did not sit late that night, but soon retired to refresh our wearied limbs. It was not long before all were asleep, dreaming of glacial lakes, mountain torrents, dense forests and thrilling scenes which no doubt had been impressed upon our minds for the remainder of our lives. Morning dawned and all were soon astir. Imagine the surprise and quick movements of one who on awakening remembered that he had hung outside of the tent to dry a coat which contained all his money and some valuable papers. Fortunate for him all was found safe. His purse might have easily been taken by men who passed quite close to the tent on their way to work. The writer never awoke stronger or more refreshed from any sleep, no vestige of weariness was experienced or evil effects from the previous day's exposure. However, there was one reminder of the rough journey home. The long march down the mountain side with shoes thoroughly wet had made havoc of his feet so that when he arose, the first movements of them were accompanied with much pain.

As for the shoes worn the day before not a trace of blackening was left, the original color of leather alone remained and a hardness which seemed beyond the softening powers of any patented molliment.

The day had not advanced far before it was quite evident that the strain had been too much for the sportsman. He became sick and quite under the weather for some time. The botanist complained a little but the geologist seemed free.

It was considered wise to devote the day to writing up results of the climb, preserving the plants collected and attending to some other work in connection with our researches. In the afternoon the writer took a stroll up the track, where we had crossed the Bow River the previous day, and from this wandered along the edge of the river collecting some interesting plants, which want of time prevented him doing while on the way up the mountain. The botanist was busy the whole day. Towards evening the huntsman went fishing, and returning brought some twelve very fine mountain trout caught in a small stream which empties into the Bow. It was agreed that the next day should be spent at the end of the track. Inquiring we found that the construction train left Laggan for the summit about 5.30 a.m. This was an early hour, and some doubts were entertained regarding our being able to catch the uncertain train. However, we concluded as our visit was near a close, we must make the effort. We asked the watchman of the Mounted Police to call us at 4.45, feeling that this would give us ample time to be on hand as the station was but a few yards from the tent. Having made every preparation we could so that nothing might cause delay in the morning, we retired full of hope concerning the grand treat in store for the coming day.

The first intimation we had that day had dawned, was the gruff voice of the watchman as he shouted into the tent "Hallo, 4.45." We answered with a

groan, " all right," but alas, like many a sleeper suddenly aroused from a deep sleep, we answered before we were really awake, and immediately fell victims again to the soothing influence af Nature's sweet restorer.

It seemed but a moment from the time I heard that voice say 4.45, when I awoke, and looking at my watch, discovered that in twenty-five minutes our train would be on the way to the summit.

No slumberer now remained undisturbed. A general stampede took place and movements made in every direction while we attempted to prepare a scanty meal and lunch. Each tried to do as many things as possible at the same time, so that a few minutes before our time—5.30—was up, the elementary meal was ready. The writer ate heartily a few minutes, then picking up his lunch said "Gentlemen, the train will be off in five minutes; come on, our limit is reached." The three lingered to enjoy that meal, while I dashed across the unsurveyed lots that intervened between the tent and the construction train. The engine was about to start. From the open car I looked anxiously for my friends. None seemed in sight. A few minutes elapsed and still no signs of the trio. The warning bell rang, and the engine began with measured strokes to move its cumbrous load.

Just as we were entering upon the bridge at Laggan we saw my unfortunate companions speeding up to catch, if possible, the slowly moving train. Alas, the piston strokes were quickening, and it was evident that they had lost their opportunity. I felt disappointed as the distance widened between us, and knew this was the last day to visit the tunnel, and meant a walk of fourteen miles to those whom I had endeavored to impress by precept and example that trains never wait for passengers. However, I felt confident that my friends would turn up somewhere about the end of the track during the day.

LAKE SUMMIT.

A few minutes' run, and the summit, about ten miles west of Laggan, was reached. The lake here, named from its situation Lake Summit, presents some peculiarities worthy of notice. It can scarcely be termed a lake, for it covers only some two acres and is only about three feet deep, but its waters are clear as crystal and cold as ice, like all the mountain water. It presents nothing of the appearance of a pond in lower and warmer regions where such a body of water would be filled with weeds of all kinds, and water tinged yellow from the decomposition of vegetable matter. The water from this attractive lake, 5,181 feet above sea level, on the east side flows with rapid current down to the Swift waters of the Bow River, the wooer of many a mountain stream, while those on the west, after a tortuous course, reach the placid waters of Kicking Horse Lake, from which they eventually pass to the Pacific Ocean. Thus this lake, well named Summit, is the great water shed that divides streams whose waters reach the Atlantic on the one side and the Pacific on the other. In one part of this lake I found an exceedingly interesting plant, Chara fragilis, and along the south side some very beautiful specimens of the genus Lycopodium, The former possesses the power of secreting large quantities of lime, which forms so much of its tissue that the plant has quite a hard, gritty feel, and on drying becomes exceedingly brittle. The cold, clear sparkling water of this elevated lake, and the peculiar position it occupies on the dividing line between the waters of the Pacific and Atlantic Oceans will always secure it more than a mere passing notice. From a little beyond the Summit, alone I set out to walk amid some awe-inspiring scenery. Being comparatively early the air in the valley was but little affected by the sun, which was now tinging the lofty snow-clad summits in glistening wreaths of ever changing splendor. Here, the sun does not rise completely until nearly one hour after it has been seen gilding the rocky pinnacles with its light. From summit to summit the light skips, reaching farther down until at last it bathes the foot of the mountains in golden sunshine and no crag can longer hide its face from view. There was every appearance of a gorgeous day and all nature seemed combining to make our last day among the mountains one of inexpressible grandeur.

KICKING HORSE LAKE.

A short walk and Kicking Horse Lake is reached. This is a beautiful sheet of water covering about six acres, and surrounded by high mountains. The track passes half way round, then turns to the left and follows the course of the Kicking Horse River, which forms an outlet to the lake. Where the track first touches the lake a seething stream from the mountain passes under it to mingle its turbulent waters with those of the calm lake. At this place a large and substantial saw mill has been erected.

From this mill, after some examination of its workings, I passed along the curved track following the margin of the lake, passing a dynamite factory situated near the outlet of the lake. Here the track turns westward, and follows with a steep grade, 230 feet to the mile, the course of the Kicking Horse River. Up to this point a traveller is struck with the comparatively small amount of work that has been entailed in making the way through this pass. True, there are places where some difficulty has been experienced ; but taken as a whole the line along Bow River has been wonderfully aided by nature.

Hitherto I had seen much of scenery that was full of charm and beauty, but now language failed to describe the glory and grandeur that surrounds the traveller who wends his way along the many curves of the the Kicking Horse River and down one of the steepest grades in the world. To your right and left are the mountains, apparently piercing the very clouds with their lofty summits. Along a shelf blasted out of the rock at intervals the track is laid. Below this, at first but a few feet, is the swift current ; this is soon much lower in the ravine as you advance, and the course of the river deepens downward into the great valley below.

In some places the maddening waters are forced through a narrow cleft in the rock, and from the confined exit it bursts with terrible fury and striking splendor. Farther on it leaps into a natural basin and boils within the constricted area until it forces out and plunges downward along its precipitous course. At any point in your walk you can stop and witness the furious current lashing against the sides of its confined channel as it rolls in magnificent grandeur downward and onward to the waters of Columbia River. Curve after curve you accompany this noisy stream, apparently at your feet, until at last you reach the first bridge over its seething waters, where they pass into the deep and darkened ravine below.

No soul could fail to be touched bathed in such surroundings. The imposing grandeur of the silent monuments around you, the bracing air of the mountains, and the noisy turmoil of the foaming stream combine to fill your soul with awe. Fear passes from you, and places which under ordinary conditions you would dread to walk over become surrounded by a charm that woos you to venture anywhere.

The first bridge is some eighty feet above the river. True the track is laid over it, but it is not this that gives you the confidence to walk over the yawning abyss below. All fear passes away. You are a child of the mountain, and like those cradled amid such scenery you know nothing but to dare. Bridge after bridge was crossed alone, some with but a single beam across, for I had now got beyond the track, and was pushing my way on to the first tunnel. As I continued my walk along the shelf upon the mountain side, the glorious and ever-changing panorama of nature passed before me, sometimes a glimpse of the rapid Kicking horse 500 feet below, at others a magnificent glacier gliding with slow but certain rate among the mountains. After walking along the enchanting way for about four miles, which had occupied some five hours, I reached the tunnel.

This is somewhat disappointing when seen. It is only about 120 feet through the side of a mountain around which there was no opportunity to blast out a shelf as in many places passed.

I walked no farther westward. At this point there is a very fine view of the valley 500 feet below. The river is much wider, its water shallow, and though

flowing rapidly, still it has not the wild onward rush observed farther up the valley. On one side of it in the flat there is quite a village of tents. Among these are numerous eating houses, billiard rooms, barber shops, stores, etc., indicating that though far removed from civilization much is seen here that is not to be found in more pretentious places.

THE HOSPITAL.

Here too, is the hospital in connection with the division. This was visited, and while here an operation was witnessed. A young man, who had been accidentally shot by a companion trifling with a pistol, had been in the hospital for some time. The doctor had hoped to save the limb, but it was found necessary to amputate it. As the poor fellow was carried into the operating room from a tent outside, I held my hat over his pale face to shade him from the scorching rays of the sun that beat down in the deep valley. Under the skilful manipulation of Dr. Orton the operation was soon over.

Not far from this, among the trees of this valley, two young men who died in the hospital are buried. The tents will soon be lifted, and the evanescent village located farther down the track, for as construction progresses these transient eating-houses, etc., move along; but the last resting place of these strangers in that lonely spot will remain at the foot of the lofty mountains, near the ceaseless turmoil of the river, amid the dreary firs.

While looking down the valley from the tunnel I saw a very interesting sight. About fifty freight wagons drawn by mules were on their way from the Columbia River. Several pack mules, heavily loaded, were also in the procession. The whole cavalcade was slowly wending its way along the river, and sometimes in it, towards the tents which they intended to reach about midday.

Returning homeward along the track it was exceedingly hot, and while sitting at the side of a delightful stream issuing from cool spots far up the mountain side enjoying the surroundings, lo! two of my unfortunate companions turned in to quench their thirst at the same place. They had walked the whole way from Laggan. The huntsman tired had stopped a short distance farther back, The others, determined to see the tunnel, were pushing on. I could not persuade them to return, but we arranged to meet again at the construction train some two miles back. We all met in good time to get the benefit of a ride to Laggan on the train, and had ample opportunity, while waiting, to feast upon the magnificent scenery that was to be seen on every side. A good collection of typical rock fragments was made, and some of the interesting plants seen in that region secured.

About 6 o'clock the train left for Laggan. As we steamed along around the curve and up the steep grade we gazed for the last time upon scenery which had made our trip to the end of the track so intensely interesting. Skirting the beautiful Kicking Horse Lake, passing through the centre of Laggan Summit, and crossing the Bow River, we soon reached Laggan. Around the camp fire, which had been made larger than usual that night, we discussed the visit now drawing to a close, for next morning we intended to return east and examine some spots of interest. The night was not very dark, so that, as we sat by the cheerful fire, we could look up and see Laggan glacier in its lonely splendor, and the lofty mountain which we had climbed a few days before. The well defined contour of the rocky sentinels around Laggan seemed more beautiful in the darkness than during the brightness of day. Next morning, after a refreshing sleep, we were all astir and busily engaged packing up long before the sun had begun to tint with its light the snow-clad summits around us. At an early hour all was ready, and at 6.45 the train steamed out from Laggan for the east. What we had missed in coming west through the mountain during the night we now saw in all the brightness of noonday. The weather had been charming during our whole visit, and did not change at our departure. About noon, after skirting the Bow River the whole way, we emerged from the mountains and passed into the great plain over which we were to spend days in crossing.

MORLEYVILLE.

From Morleyville the scene was most inviting. Apparently but a few miles away the Rocky Mountains seemed to rise abruptly from the plain forming a magnificent back ground to the vast area that with gentle slope stretches eastward, while close at hand the Bow River threaded its way between precipitous banks to the waters of the mighty Saskatchewan. Rapidly we passed along through ranche-land and over river "bottoms" till Calgary was reached. Here a short delay was made but we soon started again, and followed our course over the great grazing country of the Bow River district. It is a charming region of beautiful rolling land, covered by a dense mat of richest green.

About sunset Gleichen was reached, a stop made for refreshments, and here we caught the last glimpse of the Rockies, nearly 100 miles west, yet their well-defined outline could be readily distinguished along the distant horizon. Having taken a farewell look of the distant mountains we soon passed into the darkness. It was decided that two of us, the writer and the botanist, should get off at Medicine Hat, while the others went to Irvine and pitched the tent where we intended to make a good search in the ravine there for reptilian remains. About 3 a.m. we reached Stair, the nearest station to the Saskatchewan coal mines. At this place we left the train and started across the prairie for the mine. about one mile distant.

COAL MINES.

On the banks of the Saskatchwewan, about seven miles above Medicine Hat, are located the coal mines of that district. At the time of our visit work was about to be renewed for the fall and winter trade. Large orders had been given from both east and west, and the manager, Mr. Lawson, seemed satisfied that the coal would be in greater demand than the previous year. We entered the mine, and were highly pleased with the superior nature of this lignite, almost approaching a bituminous coal in appearance. Specimens from the seam were taken, and afterwards shown to some mining engineers who accompanied the British Association. They expressed themselves highly pleased, and considered it excellent. At the present time 150 tons are being taken out daily. This coal kindles readily, gives out intense heat, forms no clinkers, and so far gives most satisfactory results to consumers.

Approaching the mines from the prairie you see little or no indication of the great valley through which the Saskatchewan passes. It is only when you come directly upon it that you observe, and are impressed with the work nature can perform through the agency of water. The banks here are 293 feet above the level of the stream, and appear to have been excavated in every direction by streams no longer seen and spring freshets of modern times. The mines are not located directly on the banks of the river, but on the sides of one of the great ravines. The following represents a vertical section at this place :

Prairie level	293 feet.
Drift, sandy clays, light sand shales, clay and sands	190 "
Limestone and sand (2 ft.), followed by dark shade	170 "
Coal seam, 1 foot thick	150 "
Shale, a thin seam of coal, clay shale, iron and sand (8 inches)	114 "
Coal seam 4½ feet	110 "
Under-clay, sandy clay, and band of shells 4 inches	90 "
Sandy clay, hard band (5 in.) and band of shells (7 in.), coal (8 in)	80 "
Iron band (9 inches), coal seam 4½ feet, being worked	70 "
Under-clay 3 feet, coal 2 feet, sandy clay and brown clay	30 "
Iron band in which beautiful fossil leaves occur	20 "
Light sandy clay to the water level	0 "

Already the opening up of this mine has been a great boon to the people of the Northwest. To those of the far west it has brought a cheap and excellent fuel. To the people of Winnipeg, 660 miles east, it has reduced the price of American coal to $12.50 per ton, by introducing native coal at $7.50.

We secured some beautiful fossil leaves from the band of ironstone a few feet above the level of the river. These are quite circular, resembling on a small

scale the leaf of the water lily. Associated with them are plants allied to the horsetails (Equisetum). Above the level of this a few feet the petrified remains of trees are quite common. The femur of a gigantic Dinosaur was found this summer in the deposits a short distance from the mines. The animal life of this place is interesting, and seems to indicate climatic conditions somewhat different from other parts of the Northwest. Here the rattlesnake is common, and the horned toad, usually found far south, is frequently observed.

IRVINE RAVINE.

Leaving the mine we drove across the country to Irvine, some twenty miles distant, where we arrived by 8 a.m., and found our companions enjoying the luxury of a profound sleep. This was soon interrupted upon our arrival, and as soon as possible three of us started south in quest of reptilian remains, for which this place has become somewhat noted. Last year fruitless attempts had been made to discover remains found a previous year. On this occasion we determined to secure them, and thus set out for a long and hard day's work. We walked for about four miles south along the trail to the Cypress Hills, then turning to the right made for the main ravine. Along this intensely interesting depression among the wonderful "weathered" hills we toiled and climbed. Up to 12.30 no rich results rewarded our efforts. Innumerable beautiful crystals of Selenite were found among the clays of some spots, and many large clam-like shells were obtained, but the great object of our search remained unseen. Proceeding to the creek to quench our thirst and eat the simple lunch we had brought, two of us passed from the lateral ravine in which we had been at work.

We had just reached the banks of the stream when we heard shouts, indicative of delight from the geologist whom we had left. He came rushing across, and announced that he had likely discovered the desired object. We lingered at the stream for a short time, and drank freely of the warm water, somewhat alkaline in taste, then proceeded to the hills. Our friend had found what he thought teeth and some peculiar flat bones. We carefully scraped off the sandstone rock in order to form some idea of the remains in position. They were exceedingly fragile and on the least disturbance broke to pieces. We were pleased with the find and spent considerable time under a broiling sun working out if possible the nature of what lay before us. Continuing our explorations we toiled on, but received very little more for our work.

It was evident we had found the remains of different animals from those discovered by the writer on a former visit. About 6 p.m. we had reached a most complicated series of hills and none of us was able to state positively the location of our tent. In this somewhat alarming state of affairs I became suddenly ill, no doubt from the effects of the intense heat of the sun while digging out the fossil bones and the bad water drank with a hastily eaten lunch.

Alone in that wild and dreary spot I lay down to rest upon the weather-worn rocks. The geologist, some distance away, kept groping for further rewards. The botanist, alarmed at our position, determined to reach the tent by what the rest of us thought certainly a long way, if not entirely astray. In about an hour I rose and staggering along the hill-side sought a higher spot to take in our position.

Having reached the summit I descried the tent in the distance, and shouted to my companion the result of the observation. Alas, the poor botanist had taken a long route. By this time it was sunset. Loaded with the results of our work we started for the tent and reached it after a most wearisome walk. The huntsman had a most excellent supper ready, for he had been very successful bagging ducks during the day.

ANOTHER HUNT.

Next day we determined to visit the interesting haunts of last year and make further search. Consequently we started out, and after a short walk reached the place of absorbing interest. There was very little difficulty in finding

fragmentary remains. However, we were successful in finding specimens of more than ordinary interest. In several places many of the curiously marked bones similar to those found the previous day were obtained. These have been identified as portions of the carapace (shell-like covering) of large land turtles. Numerous bones were observed protruding from the sandstone rock, but on digging them out they invariably fell to pieces. I am now convinced that good fossils cannot be obtained in this rock. Its porous nature allows the water to percolate readily through, and thus affect any bones imbedded in the sandstone. Having found the place where some of the largest were discovered last year we made a close examination for teeth, and after some very intense searching were well rewarded by obtaining several interesting specimens, which have been indentified as belonging to a gigantic type of the extinct Dinosaurs. These reptilian forms are a sort of connecting link between the birds and reptiles, and have been a subject of much study by Prof. Marsh. We also found the vertebræ of a large fish and a tooth resembling in structure those of crocodiles. We considered our efforts well repaid, and after a thorough inspection in different parts of the ravine prepared to return to the tent. This rock is largely made up of a beautiful sandstone, comparatively soft, intercalated with bands of ironstone, and in some places a seam of inferior coal was observed. Weather affects the stone in a peculiar way, leaving shelves of iron-stone in many places arranged in a most grotesque manner. At one place in the coulee we came upon large quantities of petrified wood. The strata varies very much in different parts of the ravine.

This was our last day of scientific work, and the following morning we were making preparations at an early hour to continue our journey homeward. The train arrived in good time and we were soon speeding our way across this beautiful rolling district. A short stop was made for breakfast at Maple Creek. There were many passengers going east, and it was with considerable difficulty several obtained a snatched meal before the signal was given to get on board. Through the region of alkali lakes we dashed along and neared Moosejaw before night closed in upon us. When daylight appeared we were in the attractive region around the western boundary of Manitoba. Steaming along over the fertile region of the Red River Valley we finally reached Winnipeg in the evening. This brought our trip to a close and ended a most instructive lesson from the great Book of Nature with its immense open pages wonderfully illustrated on every side throughout the vast area over which the line of the Canadian Pacific passes. To the generosity of this great company we were indebted for a journey of more than 2,000 miles, through a country of untold wealth and scenery of indescribable grandeur, over a railway which for its equipments rivals those that have been in existence for half a century.

COURTLAND BENSON

Conservation Treatment

Rambles in the North-West

Paper covers filled in and backed with Japanese paper and wheat starch paste. Deacidified with Wei T'o solution (pH9).

June 1984

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