1890

George M. Dawson

Private Note Book

1890.

Drift. The red drift in going west from Port Arthur quite prominent for many miles. Generally fine & earthy-looking, but sometimes stony & with boulders & prob. a boulder-clay. Farther west the ordinary yellow & yellow-grey drift comes in. The line of junction is not sharp, red drift continuing in places as far as Nordland Stn, though some miles before that place ordinary yellow drift much most abundant. The grey drift forms ridges & terrace-like flats, against which or between them at lower levels red drift. The red drift still earthy though apparently in some places with a few boulders. Cannot be quite sure that the red drift may not have accumulated round these boulders. The yellow

Drift w. of Port Arthur.

June 5. Completed preparations & left Ottawa for British Columbia by 12.20 (night) train. McLeod with me & Dowling also on way west.

June 6. Westward by C.P. Ry. Tyrrell joined at North Bay, where we had to wait a couple of hours to connect with train.

June 7. Had to wait till about 11 am for breakfast, having left dining car behind last night. Struck some fallen rock in a cutting a few miles before reaching Schreiber, but little damage done & got on again after slight delay. Take a number of passengers & another pullman at Port Arthur, the steamer having just arrived.

June 8. Reach Winnipeg & leave there again 1.20 P.M. on westward. Tyrrell & Dowling stay at Winnipeg.

drift gravelly or bouldery, often
pocked with many & large boulders,
sometimes distinctly strat, but more
usually showing little apparent
strat. The stones mixed with much
sand & earthy material & in
some cases at least probably
representing boulder-clay.
All along th. of L. Superior, this
reach the hilly on rocks, the ordinary
yellowish grey drift of same character
as above described. A few banks
show grey clayey & stony material
which may be true boulder-clay,
but the great bulk of deposit more
or less rounded stones & boulders
imbedded in sandy & earthy material
& occasionally distinctly strat. No
general spread of anything that can
be called boulder-clay on this
Laurentian region.

Coteau. June 9. On approaching the Coteau, prairie
gradually rising & becoming more
undulating. Surface soil a sandy deposit,

which in shallow cuts seen here & there to lie on silten B.C. or gravelly & stony deposits. (These not cut deeply enough into to be sure) Limit of coteau proper here pretty definite to E. Possibly some terracing might be made out if carefully studied, but if so much degraded. To its summit at Secretan cuts in coteau hills apparently chiefly B.C. Much earthy material, not like true moraines & if dep. in water not on beach, but off shore. No apparent gravel beaches.

Dipping down to Old Wives valley at abt. 1 m W. of Secretan reach great accumulations of rounded pretty clean & uniform gravel. At 448 m. B.C. again shows, the gravel resting upon it. Gravel fines & much superficial sand again begins & is characteristic of floor of Old Wives basin. Gravel again found on W side of basin till about 1 m. W. of Kenfold, when B.C. again begins to be characteristic. Old Wives basin must either have been sheltered bay (sheltered from heavy ice) or a separate large lake. In B.C. everywhere much rounded material.

June 9. Travelling westward on C.P.Ry. Heavy rain this afternoon north of Cypress Hills & evidence of same all the way west.

June 10. Reach Kamloops at 10.30 & leave McCrory & Kirkpatrick there, while I go on to Vancouver, returning Friday or Saturday. Very fine day & good view of mountains, including Selkirks. Saw Col. Baker & Mr Harpole at Rogers Pass station & Mr Mara at Revelstoke.

June 11. Reach Vancouver this afternoon & to Hotel Vancouver. Met wood of Bowman. Wire to Anacortes & Fidalgo but can learn nothing as yet. Wet this morning clearing in P.M.

June 12. Go with Vaughan to see some Spaniards from boiling at Capilano Ck. Call on Abbott but find him out. Bad headache next day. Get telegram from Bowman from Anacortes in which he promises to be here on Saturday! Very provoking to have to lose so much time.

Rocks & heights along Ry. W. of Donald

Memoranda along Ry. June 10, 1890

Heights by Bar. No. 271.

Donald. (Nom) 2540'

From Donald to first tunnel, good exposures of 'Castle Mt. Schists'? Thence little rock seen along track to second tunnel, near & in second tunnel black clay rocks like Grapto. schists, but more or less mingled with grey. Then followed by rock which possibly limestone, near 449½ M.

Beaver. 2420'. Beyond, grey & greenish schists in Canon of Beaver. On Edge.

6 Mile Ck. 2600' The wide upper valley of Beaver begins about here.

Beyond 6m. Ck., much quartzite seen in cuttings.

Bear Ck. 3560'. Rogers Pass 4070' Summit grade 4190' Glacier (2.40 Rm) 3940'. Ross Peak Siding 3430', Illecillewaet 2710. Albert Canon 2480'

A decided drop in valley below Illecil. but no continuous well marked wide valley above. At Albert Canon, stream cuts down suddenly from level glide to

June 13. Telegraph to Bowman & to Mr Ivory, asking former to bring geol. map of Westminster district, latter to get 2 weeks supply & that would be unable to leave till Sunday. Go with Mr Vaughan in rig to Stanley Park & spend some time examining rocks & collecting fossils on shore. In latter part of P.m. examine cores from Hastings boring. Log. see Dr Dawson.

June 14. Leave station about 8.30 a.m. & go out to Woodyville on hand-car examining cuts along railway line. Get back by train arriving at Vancouver 2.30. Various errands about town. Collect a few fossils where cutting made for water pipes in city. Bowman arrived about 8.30 P.m. Had a long talk with him & wrote to Dr Selwyn. Morning cloudy but very fine in P.m. & evening.

June 15. Pack specimens, write some letters etc. Leave by 1 P.m. train for Kamloops. See Mr Reed at North

bottom grade,
albert Canon Station 2240'
at this station a considerable flat, &
below it (abt 2150') valley markedly
narrowed, but cont. for abt. 1/2 m. only.
Below this for considerable distance,
valley moderately wide & wide & on
whole widening, till at 382 m. (B = 1600)
Rather abrupt rocky fall & river canon-
like for abt. 1/4 m. Then reach head of
delta-flat.
Revelstoke 1510' Bridge 1495,
Sicamous (grade say 10' above lake) 1200'

Bend.

16 June. Arrive Kamloops about 4 am. To hotel but find all full though accorded a room in a neighbouring house. Very busy all day getting packed & preparations made for start tomorrow. Heavy rain in morning. Five in Rm.

17 June. Got everything ready & make a start after noon, but raining heavily & steadily all day, so decided to wait till morning.

18 June. Before everything packed & ready it was 11.30. Stormy weather. Travelled Southward on route for Fish Lake & Camped early at Crossing of Jacko Lake, about 1½ mile below the lake of same name. Overhauling stuff & getting in running order. Examined rocks in vicinity. Day very unseasonably cold for June.

June 19. Up early & travelled south to Fish Lake, getting there early in Rm. After lunch McL & self went up in different directions to examine rocks. Day cheily & stormy, but clearing & pretty bright. Camp in a pretty little

Indian Story

On the trail from Kamloops toward Fish Lake, about a mile north of Jacko or Peterson Creek Crossing is the scanty remnant of an old stump protruding with a few stones piled about it. Indians in passing all make a little offering of some shred of clothing, tobacco etc. Several matches had newly been laid on the stump when we passed. The story attaching is as follows. – Long ago was an old woman who had neither husband nor children & was very lonely. For sake of company she got some pitch & made a figure of a girl which became her daughter. She told her daughter, however, that when she went into bathe in the river she must not afterwards sit or lie in the sun to get warm. Here special orders the daughter obeyed three times, but the fourth overcome with curiosity & not understanding the reason of the order, she sat down on a stone in the sun to warm & very soon melted & ran away. Next the old woman similarly made a daughter of

Ind.

grassy hollow just below the end of the lake & near a couple of Indian shanties where some Indians now are. Enquired about trails etc with view to get best plan for tomorrow's work.

June 20 Left Camp at 6.30 with Kirkpatrick to ride eastward along lake looking for edge of basalt etc. McEvoy with Indian going south across first ridge to visit another lake. Got back about 11.30 & after lunch moved camp, travelling north westward to near summit of Ishoo-whels' Mt. Have an Indian as a guide & get along pretty well though one of horses badly mired at a swamp. Camp late at height of about 5800' in damp tall woods of P. contorta. The grass & rushes just beginning to be high up here. Caltha abundant in swamps.

June 21. After usual early breakfast, climb a couple of hundred feet to summit of part of mountain nearest to us, which is the S.W. angle of a wide rough high mass. Get some photos, & examined country, while McE. got a

clay, & this time told the girl she might bathe & might sum herself afterwards as often as she chose, but must not rub herself in the water. Three times the command was obeyed, but the fourth she began to rub & soon rubbed herself all away & disappeared. Next the old woman made a daughter of a piece of wood & told her she might bathe & swim sum herself & do anything she pleased. Three times she bathed & the fourth, as she sat on the bank of the river with her back partly turned toward it, drying herself she saw a fine large trout jump & exclaimed how I would like to have him for a husband again & for three times the trout jumped & she repeated the same wish, but the fourth she felt something touch her back & turning round she saw a fine young man standing, who said you wished me for a husband now I am come to take you. She consenting, he took her on his back & said not to open her eyes till he told her to do so. Then he

round of transit angles. Weather fine though partly cloudy in morning, but gradually clouding up & becoming stormy toward noon. Back to camp & after lunch, though still stormy got packed up & moved off toward Face Lake. Our trail & very rough going swamps very miry owing to recent heavy rains & much down timber. Had much difficulty & delay in crossing stream which runs into Face Lake. Eventually reached the trail which runs along the valley to W. of Face Lake & got a good camp in a pleasant looking little meadow at lower end of lake. Evidently a constant resort of Indians. Fish-traps set in the stream where it flows out of lake.

June 22. Start at usual hour & travel down Greenstone Ck to Meadow Valley, then up latter about 3 miles & camp at suitable place to undertake a trip into the County to S. to define geol. lines there. Day generally fine, but rather cool. Clouding &

spring into the river & dived toward the bottom, but half-way down she opened her eyes & then like a flash found herself back on the bank. Three times this was repeated, but the fourth she had resolution enough to keep her eyes tight closed till ordered to open them, when she found herself with her lover in a fine country something like that which she had left. Then they lived for some time & had two children a boy & a girl. Other people were there & when the two children grew larger they were taunted with having no grandmother & came to their mother to ask why they had none. She ~~said~~ told them that they had a grandmother, but that she lived in the upper country, but said that they might go up there & that when they did so they would see an old woman engaged in digging roots on a hillside. That would be their grandmother, but they might go to her house & get whatever they could find there to eat. They

Indi

some light showers in evening. Rev. remain in camp, keeping sunday & looking after various camp matters. See a fine buck just before reaching camp. Prosper took a shot at it but did not get it. Bona & our guide went out lately in Rev & came back with two fine sized goslings

June 23. Very wet morning & raining all am. Very disappointing as a long day wanted for work to southward. Get away at 12 45 Rev, the rain having stopped & spend over six hours to the south in rough wooded country, swamps & bottoms all very wet owing to great amt. of rain. Have to turn back without reaching edge of granite, which was objective point. Indian bore away too much to westward & going very bad.

June 24. Paid off Indian guide Joseph. Started 7 am with Mc L. & rode all day in the country to the southward, getting back to camp 5 Rev. Country very rough & much bog & swamps owing to recent rains. Wooded & here & there bad windfall. Much exertion for small amount of information. Day

acted accordingly & on three occasions having seen the old woman hard at work went to the house & helped themselves to food. The old woman powwow, saw their tracks & found that the food had been taken & decided that no one but her daughter's children would visit the house in that way. She prepared some strong medicine & going to a stump ~~said~~ told it that when the children appeared it must move & appear to work upon the hill like a woman digging roots. She then hid in the house & when the children came the stump did as told. The boy said there is our grandmother at work let us go to the house, but the girl thought the woman was in the house. The boy however went in & by & by enticed the girls also to go in. Then the woman threw the medicine upon them. It covered the boy who at once turned into an ordinary

Ind.

generally speaking fine, but one or two showers in Pm. Young & another man who took sheep on this creek called in at camp in evening. Hunting cattle.

June 25. Sent packs on to Greenstone Ck, & rode out to south of Meadow Ck, on a new route with McEvoy. Did not get very far, as the trail we followed gave out & seemed no object of spending more time. Took to packs for lunch, & in Pm while McE. took packs to camp at mouth of Witches Ck, I rode across the high point S. of Meadow Ck, separating it from Snicker Ck., with Kirkpatrick. Got back to camp about 6 Pm. Day fine & quite warm at times in Pm. In 1888 we had a Sunday camp on same pretty spot on which we are now camped. Saw one deer today & a coyote, which was shot.

June 26. Off at 7 Am with K, riding south down W. side of Snicker valley. Pretty rough going in places. Back to camp 12.15 & after lunch, leave at 1.15 riding out over hills to Eastward. Find fairly good travelling. Get back 5.30. Take photo of camp. McE. out all day

human being but only holy yth girls
body was covered & she changed into
a little dog. The old woman took care
of her grandson & the dog but never
told the boy that the dog was his sister,
She told him however to be kind to
the dog & never to beat it. The boy used
to shoot with bow & arrows & was
shooting red-headed woodpeckers
but three times hitting shot woodpeckers
the dog ran on & ate the birds. Then
the boy got angry & the fourth time
struck the dog a beat it with an
arrow. Then the dog spoke & said
why do you beat your own sister
& ran away. The boy followed but
the dog before he could catch it turned
into a chickadee & flew away. Then
the boy went back to his grandmother
very sad & said why did not you
tell me that the dog was my sister,
but the woman said if I had told
you perhaps you would be more
sorrowful than you now are.

with Bena on Forge Mt, to north. Day fine & pleasantly cool. No rain!

June 27. Travel up Witches Ck. & cross Highland Valley westward. Route same as travelled in 1888. Camp at Creek of north fork which Wood & Campbell have a ranch. Intend riding up this creek in Oct. A fine day & rather warm at times.

June 28. Rode up creek above camp with McL. getting to a couple of ponds & marshy lakes, dammed in by beavers, at about 3 miles back. Returned, finding that could not get much more information by going further. After lunch, packed up & moved camp about five miles southward, camping rather early in a high notch at the side of the great Thompson Valley, at a little pool with yellow & rather poor water. Intend going back on the hills a few miles, from here, before going on to Spence's Bridge tomorrow. Another fine & rather warm day. Fine view this am of snow clad mountains of Coast Ranges, perfectly clear.

Ind.

She told the boy that when he went shooting if his arrow lodged in a tree or anywhere above his reach, however little he must not climb a stretch up to get it. Three times he lost arrows there, but the fourth he saw his arrow stuck in a tree a very little way above his reach & stood on a branch to clutch it. Then the arrow moved up & he climbed higher & though he thought that he had not climbed far when he looked down after a time he could not see the earth at all. So he went on climbing & the arrow still ascended till he got at last into a country above which was very pleasant & where many people were & there he stayed. The stump first mentioned is the stump of this identical tree!

The name of the place where this stump is, is Ka-whoo'-sa or 'Crying' or it is said nearly always to be raining when people pass as though weeping. Ka-katt'-pic'-e-hark name of boy who ascended. The old grandmother is supposed to have been a grizzly bear.

Ind.

Fish Lake (Pis'-tsutt or trout lake) Indians say that the 'water people' or water people of some kind inhabit or did inhabit this lake, in the upper

June 29 Sent Kirkpatrick off to Spences Bz. to telegraph to Kamloops for mail, & rode out with Mr Lory up creek near which we were camped. Found a good Indian trail & got about 7 miles forward to take at head of creek. Left camp at 7 Am & got back at 12.30. Lunch & packed up & left for Spence's Bz. at 2.30, reaching there at 6.30 Pm, after a long day. Very hot in pm, the first really hot weather we have experienced. A strong up-river wind however. Camped on stony & sandy flat about 1/4 m above Spences Bz on W. side of river. Usual difficulty in getting poles & fire-wood. Have been 9 1/2 hours in saddle today & what with the heat the feel rather tired.

June 30. Got mail this morning. Ordered new list of supplies. Writing letters etc. Very hot. Moved camp in Pm, leaving at 4 O'clock & travelling a few miles up Trout valley to a more eligible place than the sandy flat occupied last night. Pleasantly cool in the evening.

part (have same as water people of
Adam's Lake) where when the Indians
go out spearing fish by torchlight they
can see in the bottom of the Lake a
cleft from which great numbers of
fish come out, but all holy fish, the
tail ends wanting. Long ago the old
people used to catch these holy fish
but the water is too deep that they never
spear them now. A similar story told
about the Lake from which Edward's
Creek flows, with the addition that
the Indians have seen in fine calms
but water water people one or two
or more floating on the surface asleep.
Bona tells a most circumstantial
story of seeing & examining on two
occasions a snake with two heads,
which could & did run in either directions.
Prosper says he has seen these snakes
three times. The stories relate to the
S. Thompson above Kamloops chiefly.
To see this snake is very unlucky
& portends death of some relative or of

July 1. Travel on up Twin Creek valley, but eventually, where valley forked, became uncertain as to which should be followed. Continued by northward valley for a couple of miles, looking for elevated lake. Decided to camp about 1 P.M. & after lunch McEvoy took one branch while Lewis K., took the other. My branch ran out in a couple of miles into Venable valley & having found that the route good & that it would be our route tomorrow, returned to camp about 4 P.M. McEvoy had a long trip, getting back near 7 P.M. & having been to lake at head of Green Parks branch of Hot Ck. A fine day & pretty warm at times.

July 2. Travelled northward through notch & then down into Venable Valley. Sent packs ahead to camp & followed down valley. Camped at point where it begins to descend rapidly to the Thompson. After lunch go out with McE to look for fossils in rocks above 89 m. Stelle, near mouth of valley, in which had noted occurrence of fossils in 1875-76-77. Made a considerable collection, but including

the man himself. It is called
Wha-thoo'-sil-i-kin. (Interesting
to compare with double-headed snake
of the Kwakiutl, particularly in reference
to the idea that these people are of Salish
origin)

Lud.

Story of the lizard, which being seen
follows a man up & enters by his
fundament while he sleeps, killing
him, but conquered by lizards of the
bear Za-Kwet-Ki'lut, as formerly
supposed but told also of other lizards
which may be seen when breaking
up rotten wood etc. This happened
formerly but does not do so now.
Formerly also the grizzly bear said
to have been a much more formidable
animal than now, constantly attacking
& killing Indians. This probably means
that the Indians are now better armed,
& possibly implies that the bears have
learned this fact.

few forms, & these not very well preserved. Here an uncomfortably Cretaceous look about them, but if so must belong to a lower zone in the Cretaceous than heretofore recognized here. If they should prove to be Cretaceous it will be a difficult matter to draw lines. Day extremely hot, but evening pleasantly cool & a few drops of rain, the tail of a passing storm, with some wind, about 7 P.M. Hope to reach Spence's Bridge again about noon tomorrow.

July 3. Travel down to wagon road & then along letter to Spence's Bridge, examining rocks by the way. Stop for lunch, get water & a few extras needed & then continue down river & climb the mountain side south of Arthur's Seat. Very steep for 2½-3 of trail & total country on 3000'. Camp at a little spring known to Indians as 'Bear's Spring' on the W. slope of the mountain. Day rather hot in morning but pleasantly cool in high country in evening. Fine view of the river & valley as we climb.

Bona says that a heap of stones etc is on Whipsaw Ck, but far below Powder Camp & on route from Similkameen to Hope, which every Indian passing has to 'pay' by putting something on, such as a stone or twig.

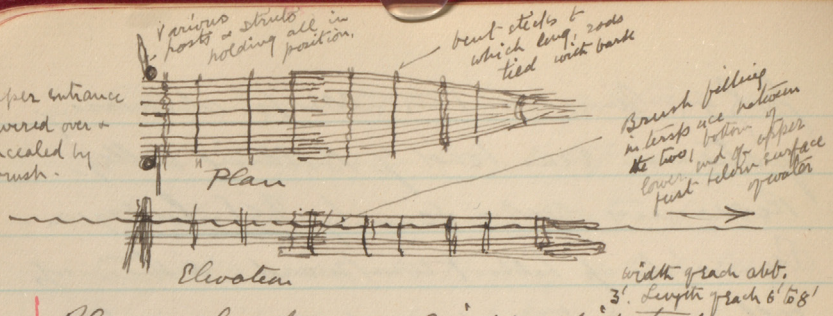
Hunting grounds. The Nicola Indians & possibly others, are said to have hereditary hunting grounds, each family having its own. This formerly the case also with the Kamloops Indians, but the custom is now broken down & all the Kamloops Indians hunt indifferently or nearly so in different parts of their territory.

Story that once a mosquito, gorged with blood, flew up to where the thunder is. The thunder asked where it got the blood & the mosquito not wishing to tell, replied that it sucked it from the buds at the very highest tips of the trees. Hence the circumstance that the lightning (thunder) strikes the tops of trees.

Ind

July 4. Were on to a camp of Crossing y stream near head of Botanie Valley, Reservoir works seen by McL. last year. Rem. side up hills to westward a then up valley to north ward, getting information for boundaries of works. Rather a disappointing day on the whole, but still got some facts of value. Several camps of Indians up here at present, the women being engaged in digging roots. A beautiful country. Flowery meadows in the valley & many open slopes of hills & mountains also covered with many varieties of flowers, wonderfully luxuriant growth everywhere.

July 5. Called at Indian camp when passing & secured a man to act as guide to mountain to west of valley which wish to ascend, chiefly for purpose of getting information about Coast Range. Travel down valley some miles, camping before noon high up on W. slope of valley where, according to our guide we can start for summit tomorrow, no time to occupy the mountain today,



Plan & elevation of simple fish trap used by Indians. Seen below Fish L. & also below Face L. in outflowing stream. A trough made of willow sticks tied together, leading into a second, similarly constructed, but with the branching ends of the willows tied together. So arranged (not exactly as in diagram, that fish running down stream pass over the lower edge of the first trough & collect in the second, being unable to get back without jumping out of the water. Indian not far off watching for them. The necessary weir or blocking of stream so as to allow fish to pass down into the trap only of course implied. This used when fish running down out of lakes. Called Mook'.

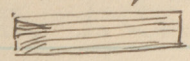
Ind.

also use, so they say, the regular cylindrical basket traps as used by

Sun if atmospheric conditions favourable, which they are not. Had in consequence a rather lazy afternoon. Morning overcast, Rain & evening partly clear & clearing but unpleasantly strong wind, with showers in the coast ranges down the Fraser. Cold & raw.

Before we left Camp this morning, a number of Indian women passed on way out to dig roots, each with basket on back & a digging stick. The stick has now often substituted for it a pointed & slightly bent bar iron, with the usual transverse crutch-like handle slipped on upper end of it. Length of stick or bar about 3 feet, of transverse handle about 9".

Our new guide an amusing old fellow named 'Philip'. Quite ready to accompany us at a moments notice. Merely dived into his tent & reappeared ready for the road with a large stone (steatite) pipe & an extra pair of moccasins.

Chilcotin etc. made of narrow bars of split pine  with converging spikes at entrance. Name of this Pés'-ah.

The Salmon weir such as photographed last year on the Nicola, called Tail-min'.

Custom with respect to berrying. This is not done at random, but for each place known as a berrying ground, some experienced old woman takes charge. Watches progress of ripening & when full time, send word by messengers to the Indians, who then all collect & begin picking. The berrying is female women's work.

Bows, were formerly made chiefly of juniper wood (poontlp) also sometimes of yew (Skin'-ik) which is said to grow & probably does so, some distance up the North Thompson. The bow was formerly often covered on the outer or convex side by a rattlesnake skin. Arrows were made of amelanchier wood.

Said, & Proofer says he has seen, Chief Logan handle rattlesnakes with impunity. Also said that an old man

July 6. Got up immediately after breakfast under 'Philip's' guidance to climb the mountain between Botanie Valley & the Fraser. Very steep zig-zag route till reach summit of ridge, which then followed & has more gradual slope, to culminating point. All day very cloudy with heavy showers particularly on Coast Ranges, which main object of the ascent. Made a fire in the lee of a rock & waited about. In afn clearing & at times pretty clear, so that possible to get all the information needed as well as help a dozen photos. Great work gain, but moderately warm & at least not immediately cold. Back to camp pretty late, having been away 11½ hours.

The wind on summit with a S or S.W direction & only moderate, while can see from clouds & dust below Lytton that the usual gale blowing up river there. Also find that has been blowing very hard from S in valley at Camp all day. Evident that this up-river wind a lower current.

Weather

of Deadman R, deceased some years ago was similarly able to handle rattlesnakes, twining them round his neck etc.

Battle Bluff formerly known as a haunt of the 'water people' (same Indian name as applied to these people on Adams L. etc.) Canoes could not pass round the point etc. Water people described as human, though hairy, as to upper part. Fish-like below. The Bluff called Hoom-a-tal'-Kwa.

Ind.

The story that some hostile Indians, informant thinks Okanagans, were coming to attack people of Kamloops lake vicinity. Looking over the bluff, they saw below a woman, in a hitch of the bluff, dancing. The woman probably a witch & said to have been at her monthly period. The Indians sat down along the edge of the bluff to watch her dance & were there turned to stones, which may still be seen.

In addition to other roots, the Indians eat those of claytonia or spring beauty, and the dog-tooth violet or Adder's tongue.

July 7. Paid 'Philip' off & travelled down Botanie Valley to Camp at edge of river near bridge at Lytton. Went on to town & got some provisions & information about routes to be followed. Then rode out some miles on road to Lent to examine rocks. Return to town & telegraph to Kamloops for letters. Have an interview with Chief Michel & arrange about getting a man to guide us tomorrow, when propose going up into mountains to E. of Fraser & S. of Lytton. Rev. Bluett & Stavery.

July 8. Got mail which had been forwarded from Kamloops in response to my telegram. Travelled northward along road for some miles, & then under guidance of 'Tommy' take a steep trail up into the mountains to south. Guide recommended this route to reach higher part of mountain country to be examined, in preference to that going up direct from Fraser. Climbed about 5000' above level of Lytton, & camped rather late in stunted woods

Indians eat root of Bokonortiga.
On enquiry find that it is dug in the spring, when the rough barky outside comes off easily. It is then roasted for two or sometimes three days, in a covered heap in the usual way, when it changes from white to brown & acquires a very sweet taste. The root is shaped like a small spindly parsnip & even in the raw state has a rather pleasant liquorice-like taste.

Ind.

near points which it is proposed to ascend tomorrow. Very fortunate that we have taken this route as it turns out to lead exactly where Wam. of country wanted. A hard climb for the horses

July 9. Off early with 'Tommy' for highest point of Mt. to N.E., which turns out to be about 6600' in height. Take transit & camera, but mist & flying clouds obscure everything. Build a fire a little below summit & make a shelter of branches, in which spend the rest of day, getting back to camp at 5 P.M. without having seen or done anything. The mountain top which we were on was almost continually buried in drifting mist. One little flurry of snow during afn. A long cold wait for nothing. Must return tomorrow.

July 10. Blowing a gale of wind this morning with clouds low & drifting fast over all, even the lower mountains. Evidently impossible to do any work on the mountains. Very cold & raining in P.M. All day spent in & about camp. Reading etc.

July 11. Wind continued all night, but looking a little better this am, though barometer still low. When the Coast mountains began to show out about 8 am. set off for mountain point. Spent the whole of day there, getting constantly fair though partial views of the Coast Range etc. Strong wind all day & pretty cold. Far from satisfactory after so much time lost in getting to this outlook point. Got a few photos., but not as good as might have been under more favorable circumstances.

July 12 Cold showery morning again, with tops of mountain buried in mist. Packed up & moved off for Lytton. Reached Lytton rather late & camped near S. end of town. Got down into Fraser Valley a little above the Cantilever bridge, making a very steep descent by zig-zags for about 500'. Telegraphed for mail, & to William at North Bend.

July 13. Having received a favorable reply from William, decide to spend the day (Sunday) with him at North

Bend. walk in to station in the early morning & have by 5.35 am train. Spend the day at hotel North Bend. Write letters. Reading late papers. Walk out with W. to a lot in which had wished to search for fossils in 'Baton Bar' series, but find none. Leave again for Lytton after 7 pm, arriving there at 9.35 - after an apparently very long day.

July 14. Ride out up Fraser with McLeay, revising previous work on Cretaceous etc. Collected a few fossil plants, but very imperfect. Back to camp about 2.30 after a ride of say 15 miles. Got a late lunch, packed up. Got a small new outfit of supplies, & arranged with Indians about crossing river. River very swift & wide & snow rush in swimming horses, though towed after canoes. Get all at length safely over & camped on W. bank just before dark. Got today letter from Hon. C.H. Tupper on Behring sea matter. The letter had been addressed Vancouver & had gone astray & C.C. Chipman had

written to me about it, I having replied by telegraph to him.

July 15: Somewhat delayed in getting off as all stuff had to be carried out after the crossing. Stopped for lunch nearly opposite the place at which we came down into the Franes valley on Saturday. Then, under "Capt Tom's" guidance climbed the mountain to the eastward. Tom, however, turns out to know comparatively little about this part of the country & soon proposed camping to reconnoitre. Objected to this & kept on up, but had we not fortunately found a little trail leading toward the higher part of the mountains doubt much whether we should ever have been able to get up, as slopes very steep & much wooded as well as rocky. As it was the packs had a very hard climb, getting eventually, about 6.30 P.M., to Camp at height of about 5700' or as near as may be a total ascent of 5000' since lunch point. Find that we have made an ascent in the right direction, & camp in an alpine valley at N. base of Peak-4th Int.,

which had been designated as our objective point. Camp among well grown though very open woods of Engelmann's (?) spruce, subalpina & P. albicaulis. Snow has just disappeared from bottom of this Valley & vegetation springing. A charming alpine Camp of wd only cost a five day tourist for the mountains.

July 16. Climbed laboriously up & along a ridge, which eventually turned into a knife-edge & led to the summit of Kl-ow'-a Mt., which had decided to occupy. Spent the whole day getting up, on the summit, & getting down again, returning to Camp after 8 P.M. A fine warm day, without strong wind, & nearly cloudless, clear, & a splendid view from summit about 8000' above sea. Ridges & upper part of mountain much shattered & resemble a manufactory of granite boulders quite sizes up to the largest. See Mount Baker standing up to the South very distinctly, though about 70 miles away. Got some photos. which should be good. The

Summit on which we spent most of time, really a sort of projecting point on a knife-edge, very small & all composed of crushed & fissured granite. Precipice of 1000 or 1500' in height to the northward, with wide partly wooded valley below with several dark green lakes. Upper part of this valley still wide, but at distinctly higher level. Scrub only growth. Grey stones & great stony patches & slopes. A little tarn in it still partly covered by ice. One glacier of fair size at head of Lucerne Creek (S. Branch) Numerous others but too well seen & probably smaller, but all still much covered by heavy snow of last winter. Descended from Mt. by a different route sliding down some distance on snow slopes.

July 17. Travelled down mountain & back to Camp opposite Lytton. A light day's work compared to the up trip. Would have reached Camp shortly after 3 Pm., but rode on to Earle's ranch, about a mile & a half further up valley to make enquiries about country. Had a long wait for Earle's

return, talking to Mrs E & their little children. Find it difficult to get information about about roads of ascending mountains further north up rivers etc. & therefore difficult to decide precisely what to prepare for in the way of outfit etc. Send Mr Long across to telegraph for mails etc. Fine warm day. Slung up - river wind setting in about sundown.

July 18. Mail which had been telegraphed for in some way failed to connect this morning. Got a new outfit of considerable quantity of supplies intended to last to Lillooet with various branch trips. Attended to other business in town & then recrossed to Camp with supply. Packed up after dinner & moved to Crossing of Stein Ck or River as it should be called more properly. Sent Tom off this eve. to Lodian Houses to find out how we can climb the mountain near us if that be possible. Day warm & very windy, which prevented it being so oppressive as it otherwise would have been.

July 19. Having after many enquiries found that there is a way by which it may be possible to take horses some distance into the mountains North of Stein Ck., & thus establish base for climbing some point, leave this camp with Mr Cory, Kirkpatrick Prosper & Tom with the horse bearing light pack, & our riding horse. Tom had got an outline of the supposed feasible route from an old Indian & managed to follow his description pretty well. Very fair going till reached about 3000', where after having found a little water, with some difficulty, stopped for lunch. Next had to negotiate a dangerously steep hillside, more or less grassed & wooded, but like the roof of a house & a steep roof too. Must have made about 3000' on this when reached crest of long ridge, which moderately good going, & at elevations of crest of from 6000 to over 7000 feet ran on toward central part of Stein mountains. Very little timber or timber, rocks & herbaceous plants. Found one very bad place, where had to partly clear a trail from loose rocks, along the very crest of ridge, which ran down by

very steep bare rock-slide to branch of Stein on one hand, by cliffs on side of Frances. Seen that we must camp at last woods in Valley of branch of Stein Ck, which far below as I managed to make a descent to there by a dangerous hill for the horses, who slid much of the way among bare stuff. Got supper & camp arranged in this Rosalles valley just before dark, all very well tired out. Camp at about 6400' & promising a cold night for single blankets under a fly.

July 20. Sunday. Got away from camp about 8 A.M. taking 'Louis' to ride as far as might be practicable, & following a ridge which lies in the valley on S. side & slopes slightly up to higher peaks to westward, connecting laterally in the end with the main wall of the valley on the S. side. Below our camp a short distance the numerous small rills & streams of the upper valley become confluent & pitch down rapidly in a V-shaped gorge toward Stein Ck. Quite impossible for horses. Above camp, the valley continues wide, but rises rapidly & ends in a cirque, with the higher

parts of Stein Ck. around its head. Upper part of valley shows only grey rocks & snow with several little shallow lakelets, one of which still nearly covered with old ice & the open water skinned with new ice when we passed in the morning. Soon had to have Louis's aid & then continued climbing over snow & rocks till attained crest of ridge on S. side of Valley. On topping this ridge a truly wonderful view of blue & black crests & peaks running along the sky-line to the S.W. — hundreds of them & pass this height till appearing nearly at our average level. View surpassing in its vastness & the multiplicity of summits, but after a time began to pick out some more prominent points which seem beyond. Great areas of snow on all the mountains & scarcely possible to conceive a more Alpine panorama. Very steep & deep, scarred & gorges, running down from ridge to Stein Ck, which looks a white thread below. Climbed along crest of ridge, partly over rocks & partly on snow, to the central point of Stein Mts, which little under 9000'

in height. McE., went on to a further western point, from which better outlook for transit. Set up Camera & got a round of views. Managed to get enough water for lunch from melting snow. A truly magnificent clear day. Mount Baker in full view to south & Tow-ee-ah-kum Nut, far up North Thompson in sight in opposite direction. Returned to Camp in evening, finding 'Louis' patiently waiting where we had left him. Tom had killed a mountain goat just before we got to Camp last night, but find him pretty tough eating. Change plates after dark.

July 21. Having found that the way we got down to Camp valley the only possible way out, managed with some difficulty to get the horses up again & pursued our old route back to main Camp below. Stopped for lunch on the ridge at a height of over 7000' where a few sticks for fire obtainable & snow to melt, & took a second round of photos. Descent

very hot & dusty & all well tired out & very thirsty on getting to Camp about 4 P.M. Very warm in the valley even now when the sun has got well behind the mountains.

July 22. Send Kirkpatrick to Fytton for mail, which had arranged to have sent there till evening of 21st. Set out with Mr Evry to ride up Stein Ck as far as might prove possible. Stopped at a mile & a half only from Camp by an impassable tributary. Impassable at least at present high water stage. Left Mr E. to go on as far as Edge of Cretaceous, & take both horses back to Camp. Spend some time collecting fossils at locality previously discovered. Mr E & K got back about 5 P.M., the latter with a large mail. Keep the afternoon as a sort of Sunday, discussing letters & papers. Find also a piece of proof (of my article on Glaciation of Cordillera for 'American Geologist') to be read. Take a couple of photos. A very hot day.

July 23. Send Indian Tom to Fytton with mail, the proof requiring immediate

return. Moved camp about 7 miles north. In Run, rode up hill with McL. in search of edge of Cretaceous, but found it impossible to get far enough in the time. Had to travel very slowly as the day exceedingly hot & breathless & the horses in a complete lather of perspiration in consequence. Very disappointing to have to turn back without definite result. Jim did not reach camp till about 7 Pm, having been detained by various circumstances. Brought with him, however, a certificate of having safely delivered the letters at Port Hedland.

July 24. Arranged last night, as programme for today, that while I should go back to get the edge of Cretaceous satisfactorily on the mountain behind camp, McL. with Jim should go up 'In-th-pam' Creek on foot, there being no horse trail. Send K with them this morning some miles up river towards of creek to bring back horses. Climbed the hill with Bona & after satisfactorily getting beyond the Cretaceous, got back to camp about 2 Pm. K getting back with the horses

about same time. Day again excessively hot, & air for the first time this season somewhat obscured by smoke

July 25. Moved on about 5 miles up river to Creek up which McE. had gone. Got there about 10 am & waited till noon, when he & 'Tom' turned up. After lunch travelled on a few miles, & having got information of a feasible route for horses to 'Red Mountain' which we had seen from a distance & visited to make next observation point, travelled up a long ridge on N. side Sa-th-pam' Ck & camped at considerable elevation where a Chinaman's ditch crosses the ridge. Day exceedingly warm for a time, but more bearable in afternoon & strong up river breeze. Indians camped at mouth of Sa-th-pam' Creek a pretty snug untutored looking lot.

July 26. Left camp early with one pack-horse, McE., Prosper, Tom & riding animals. Ascended the ridge from camp,

getting eventually to a point beyond which the horses could not well go, would have made our out-camp here, but no water to be found. Took instruments needed & sending Prospere back to look for water, with the horses, went on on foot to Summit. Spent the whole day on summit at about 7600'. Very fine views & considerable amount of useful information gleaned, besides McLong's transit work. Day very fine, the few clouds which had collected away yesterday in warning, clearing away. Pleasantly warm. Evening returned down ridge & found Prospere, but being still enough daylight, decided to push back for ~~the~~ main camp & arrive there about 8 P.M.

July 27. Sent packs on with instructions to camp on next large creek, known as Chi-wooh' (= the creek) Did not know exactly how far off the creek was & following with observations did not reach camp till 1.25, having been on water since 7 A.M. Tents set & dinner ready when we

arrived. Rem, being Sunday, kept as a holiday. Several showers this am & day throughout partly overcast & pleasantly cool.

July 28. McEvoy with Tom, goes up Creek, while I rode back some miles, examining rocks along river. Get away about 6 am. Get back stiff yet 10 am. McEvoy returns yet 7 Rem, Tom had a hard long day yet. Took a couple of photos. in Rem of the big slide of rocks across Fraser from here. Reading, writing etc, Day fine & partly overcast. Rather cool than otherwise.

July 29. "Tom" wanted to leave this morning & return to Lytton, having a bad toothache on the leg. Had not intended taking him farther than Lillooet so willingly paid him off, & gave him at his request, a certificate of good character. Sent packs ahead with instructions to camp near bridge across Cayoosh Ck, about 1½ mile from Lillooet. Followed, examining rocks etc. On the road from

7 Am to 1.30 Pm. After lunch rode into Lillooet & got a few needed supplies. Then up the hill behind the town to further outline border of Cretaceous rocks. A very pleasant day, not too warm. The usual strong wind blowing out of the Seton Lake valley as though the nozzle of a bellows. Strikingly picturesque situation of Lillooet in a wide basin like expansion of the Fraser valley, surrounded by rugged & picturesque mountains.

July 30. Get away at 7 Am, passing through Lillooet & travelling on to 11 M. Ck for lunch, then on to Pavilion Creek & up it to about half a mile beyond point where Pavilion Mt. road turns off. Made in all about 22 miles, travelling fast as all rocks ahead here previously examined. A fine cool day, generally overcast. Get a pleasant camp on flat near the Creek. See four mountain sheep on the road, a few miles above Lillooet, a most unusual occurrence.

July 31. Decide to revisit the Tertiary area on Pavillion Mountain, hoping to get some information as to age of the deposit, which possibly reverses them the rest. Disappointed in so doing, however, but bettle information & get back to camp in time for lunch. Pm. made a short trip up the Marble Canon valley on S. side while Mr Lory went down to river to get Tertiary boundary more definitely. Bettle I move camp as will require probably a whole day for trip over the mountains south of Marble Canon next contemplated. A fine day, pretty warm in the afternoon. Took two photos. of the great rock slide in this valley. People on Pavillion Mt. all hay making, much later this season than usual.

August 1. 1890. Sent packs on to Camp at E. end Marble Canon, a distance of 11 m. in direct line, while Mr E & S made across trails way to same place across mountainous country to the southward. Same camp at 7 Am, & after toiling all day, manage to make the new camp at 8 Pm, having thus been 13 hours on the way. Forced up to a height of

about 6600 feet & obliged to travel along ridges of mountains. Trail or trail of any sort to us & went with very kind of bad going. The greatest difficulty of all being to get our horses down the mountain side again to the Hat Ck. valley. Thought at one time that we should have had to sleep out, as the sun going down while we were yet completely involved in nearly impassable thickets on steep slopes. Got, however, a lot of valuable information, both geological & topographical. Day rather fine. A few showers.

Aug. 2. Sent packs on to point for dinner Hat Ck & rode south with K., while McL. made track-survey of road along creek. Joined the packs about noon. In afn, sent K on to Ashcroft to telegraph for mail. Sent packs of road to camp at place about 2 m. above Cache Ck on Bonaparte. Set out with McLeory to examine intervening hilly region & got down to camp before 6 p.m. A fine day, not very warm, & partly overcast.

Aug. 3. Travelled on into Ashcroft, or rather to Camp near mouth of Bonaparte about a

mile from the town, getting in about noon. Got mail, which had come on from Kamloops, with good news from people at home &c. A very hot day, & did little in the afternoon but lay & keep cool under shade of some bushes by the margin of the Bonaparte. Mr Seton-Kar came into camp & spent some time with us. He is on his way to Capt. Martley's et ultra, & appears to be generally looking over the country & writing letters to 'Colonist' &c as he goes along. Evening went into town to inquire as to locality of reputed Coal discovery near here. This turns out to be about 4 m. up the Bonaparte on E. side.

Aug. 4. Up early in the cool of the morning with Mr Ivory & rode up Bonaparte to the coal locality. Got edge of Cretaceous &c definitely. The 'coal' is in very thin seams in a very small patch of Tertiary, under basalt. Back to Camp at 1 P.M. In afternoon got some new supplies &c. Had another visit from Mr Seton-Kar. Found

Mr Foster of Clinton in town. Very warm day again, but pleasantly cool wind in the afternoon & evening. Papers which did not reach yesterday, arrived today, including proof of part of my paper on Physiographical History of Rocky Mountain region.

Aug. 5. Drove along road to 8 Mile Ck, where stop for lunch. Then on to camp at crossing of Deadman River. Day very warm & oppressive. Examined rocks along route somewhat critically, & find them very puzzling. Had seen rocks along latter part of route in 1877 but useful now to reconsider with later information, as well as to refresh my memory. Day a long & tiresome one.

Aug 6. Leave camp at 7 Am, with McEvoy to examine section from Savona, at outlet of Kamloops Lake, to summit of Savona Mtn to south. Spend the whole day at this, getting back to camp on Deadman about 5.30 Pm. Heavy shower in the morning & spattering all day, but pleasantly cool. No time to speak of from

the mountain owing to clouds & mist; which cleared at intervals to sweep over & envelop it. Glimpses of the lake & mountains through openings in mist fine & remarkably weird effect produced on the summit by swirling & twisting of the mist clouds over it.

Aug. 7. Sent packs on to Camp near mouth of Copper Ck., & rode across hills at some distance from lake to examine rocks & complete information required for this region. Found argillites with distinctly Triassic fossils, which goes far to clear up many points in doubt as to geology & confirms idea as to existence of much Triassic formed in 1877! Camp on the edge of the lake. A fine evening & very refreshing outlook on the water. Trip across the hills took the whole of a long day.

Aug 8. Travel on to Tranquille, & camp at head of flat where had camped two summers ago. Examine rocks where

not previously seen. Took a couple of photos. at noon & again in the evening. Day warm but not excessively hot. Showery with thunder in Rm.

Aug. 9. Rode up Tranquille River with McLoy to endeavour to find locality from which Mr Bowman had obtained some good fossil plants some years ago. Spent whole morning at this, but without discovering any place worth collecting from. Several heavy showers. Back to Camp & lunch, when a long & exceedingly heavy shower, with much thunder set in. When this head exhausted itself set off for Kamloops. Made some further examination of works during rest of. Camped about 6 Pm at the Ferry opposite Kamloops. Got mail in the evening. Went up to see their people on the reserve. Saw a large rattlesnake, which McL. killed, on way here this Pm.

Aug. 10. Sunday. Spent the whole day in camp, the men going over to see their friends on the reservation. Fine hot day.

Most of time engaged in reading proof of R.S.C. paper.

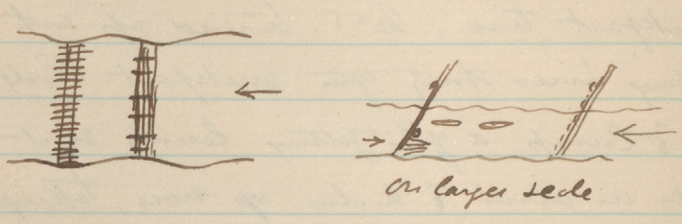
Aug. 11. Went over to town with McEvoy to look after various business matters & was surprised to meet Dr Schrenk, who had arrived last night. Got very little done in consequence except wandering round from place to place. Compared barometers. Evening writing letters etc.

Aug. 12. Completed arrangements in Kamloops & decided to go down the line with Dr S. on a freight starting 12.30 to show him something of geology. McEvoy to move camp in meantime across the river & a few miles up N. Thompson. A hot dusty trip on the railway. Got off at Spilton while Dr S. went on. Had about 2 hours at Spilton & after getting something to eat waited about till arrival of the passenger train going East at 9.30 P.M. Very hot today even after dark & no wind at Spilton!

Aug 13. Arrived at Kamloops at 4.15 a.m. Got a bed in Hotel & turned in till breakfast time. McE. turned up with riding horses shortly after breakfast. Rode out to Camp & after getting lunch sent packs on about 8 miles up river, taking to the hillside & examining rocks there for general section, with McEvoy. A very hot day with scarcely a breath of wind. Beautiful evening & a pretty camp underneath the quiet-flowing North Thompson

Aug. 14. Two of horses having strayed, got a rather late start. Another very hot morning. Examined rocks along hills for about 5 miles & seeing more distant hills which appeared basaltic, decided to camp at lunch pot. Spent all afternoon out to the Eastward. Breezy & pleasantly cool. Camp situated about a mile above 'Edwards', beside an irrigation ditch which has become naturally bowered with alders etc. Thunder storms in the distance this afternoon & evening.

At Barrière R see another new Salmon catching device, as below



Lud.

Lower barrier composed of upright small poles, closely supported, & forming a fence which slopes back up stream. Converged sticks arranged in several places below as entrances, but not possible as exits. Upper fence with same slope, but wattled of bars horizontal & wattled in with small sticks etc. See no reason why both fences should not be similar, but judging from number of salmon entered, must be a very effective trap. The Salmon afterwards taken at usual three-pointed spear of this shape

Aug. 15. Spend the morning off in hills to Eastward & the afternoon running works up along River. Camp near Fish Trap Rapid. Day pleasantly cool most of time & fine. Section water disappointing on the whole, works not regular not continuously exposed. Get some information as to distribution etc but imperfect at best & seems nearly impossible to obtain exact outlines, country so rough.

Aug. 16. Morning spent running works on up to Louis Ck, having somewhat better luck with section. Then rode out to Fort & got into back Valley, following it to Barrière River & finding Camp near mouth of that River, where nearly all the upper Kamloops Indians now are catching, eating & drying Salmon. Day fine & not too warm

Aug. 17. Arranged with an Indian to bring a canoe to cross our stuff & moved about a mile to a good crossing. After waiting some time, unit stuff unloaded & horses tied up, the Indian hove in sight with a dangerously small

looking dug out, extremely narrow, round bottomed & neatly pointed at ends. Succeeded, however, in getting everything safely over in a number of trips. Boxes had to go on edge, as canoe too small to take them any other way! Swarm bones out. After lunch, went on with McE to examine rocks opposite reservation & back from river. Camp meanwhile moved on. Got back to new camp, a couple of miles below Indian houses & on W side of river about 7 PM, pretty well tired out.

Aug. 18. Set out westward pr Pa-Kaus L. ~~Foll~~ rough crooked dim Indian trail, climbing gradually to plateau level, & camped at East end of second or 'Eating Lake' after a rather long day with short mileage. Lake very pretty, occupying a little basin in the plateau & surrounded by well grown auburnt woods. Said to be full of trout. Remarkable antiphonal concert by loons this evening, assisted by a number of grebes round the lake. Camp on a park like & attractive open slope, though

most of country thickly wooded.

Aug. 19. Sent packs on to camp at the large lake Pa-Kows or Ka-Kowe & took up a small hill to get an outlook which proved to be pretty good. Then followed packs to camp, meeting Constable Pierce with two or three other white men & an Indian, armed to the teeth, being one of the parties at present out searching for the stage robbers so far quite unsuccessfully. Got to camp in time to take a bat. about noon. Got a time about in pen & a bath. Find the canoe which we were told was here & it proves to be a small cranky affair as might have been expected. As however, it seems large enough for McEvoy & self to circumnavigate & examine the lake in, decide to use it rather than build the canvas boat for which materials brought. Get the canoe well corked before night & strut it out to somewhat greater width. Get provisions looked out & all ready for an early start. With calm weather we should do fairly well but if it blows we shall evidently have to lie too ashore.

The stage robber search leads to another element of trouble is. that we may either taken for the stage robbers, who are supposed to be skulking about or encountered by them if they happen to have made this almost unknown lake their hiding place. In either case the consequences might be unpleasant, particularly if the robbers should happen to take us for constables! The lake seems a fine sheet of water, though surrounded by stoggy wooded hills of no great height. The Indians from the Bonaparte side do not come to it to fish or hunt, as it is in the territory of the North River Indians. Hence the apparent want of trails to the lake from the west side & the fact that it does not appear on the maps, the approach from the North Thompson being a very crooked bad Indian trail as described yesterday.

Aug. 20. Made an early start with McEvoy in our small Canoe little dug-out. Coasted & Surveyed the South shore with boat log & then set out on return along N. shore. Had previous

for several days in case we should be wind bound, but as weather very fine & calm decide to get back as far as possible. Land at 5 P.M. & have an interpolated cup of coffee & then continue on. Finding no rock-serpents or other reason for delay, decide eventually to make back to camp if possible & keep plodding on with this end in view till so dark that unable to take further bearings on points. Just about to give up bearings & take through distance to camp to be supplemented by bearings from there in the morning, when the weather which had long been threatening became bad. Sky completely clouded & heard wind & wash of water coming along up lake at an alarming rate with spattering drops of rain. & sea begining to rise. Landed in a hurry just where we were & in complete darkness & chanced to find a little flat grassy spot among bushes behind boulder beach ridge. Drew canoe up & made her safe & carried stuff in. Got a fire had supper & turned into blankets, though

much disappointed I to be caught there alone only about 2 miles from camp, saw & shot two deer along the shore in the course of the day, but both were able to get away into thick brush where we were unable to find or follow them. Caught a couple of fine trout with troll which had not yet less than half an hour. Heard a shot back in the woods not very far from lake when near the lower end. Did not know whether meant as a signal to us to communicate or not, but took no notice of it. Indians say that there is no passable trail on either side of lake, which on looking at tangled state of windfall can well be believed. No signs of camps around the lake, the Indians evidently hunting round it in canoe & returning to main camping place at the head. It is in the territory of the North River Indians & is not visited or seldom from the Bonaparte River side.

Aug. 21. Heavy rain toward morning rendering our bivouac uncomfortably wet, though we had a fly spread over our blankets

& drawn up over our heads as well after the rain began. Waning very dark, but got up soon after daylight, made a cup of coffee & got off in Canoe. Completed survey of lake to Camp, arriving there shortly after 7 am, ready for a substantial breakfast. Spent remainder of morning in Camp. Got a couple of photos. & maps etc. Rain still showery, but got packed up & moved back to Ecting Lake, camping on same spot as occupied on 19th aug. Very heavy thunder-shower with hail stones as large as large marbles, shortly after we got under tents. Showers continue int the night.

Aug. 22. Decided on consideration that it would be well to attempt travelling southward over plateau to W. of line of N. Thompson to get more information about boundary lines & formations etc on this large unknown spot of map. Indians had had a consultation with 'Corbeau' who passed Camp during my absence on Lake & he (Corbeau) who is supposed to know all about this country strongly advised against route

mentioned, which he considered to be almost impossible. Proposed an alternative route to W. of Sko-atoatl, but as this would give us little new information, decided to attempt the route to East. Seemed clearing this morning a perfect fine day, but became very gloomy just as we started & continued showery & dark all day. Travelled about two miles eastward on trail & then struck off on compass course. Bona going ahead & picking out good going while I kept him straight by compass, Harris & McLeary followed behind working track-survey. Count of Sun revealed straight travelling through the dense woods difficult & wet twigs rendered it very disagreeable. Found going better than had expected & made about 7 miles, falling, very fortunately, on a little swampy meadow just about camping time, where the horses can get good feed.

Aug. 23. A fine morning. Off again through dense woods for a short distance, but with moderately good going. Then strike bad down

timber which looked most unpromising. By great good luck find a belt of standing trees through which we manage to pass for some distance. Then again into bad fallen logs, but after some delay & cutting get into valley on small stream which evidently the upper part of Skull Ck. Stop for lunch & get fairly good going most of afternoon over country which has been pretty completely burnt off. Saw, & Prosper shot at, three deer during day, getting the last just before camping time. The carcass hauled into camp. Camp beside a little pool with good feed for horses round margin & full of pond-lilies in the centre.

Aug. 24. Sunday. Light showers during the night & on into morning, giving us a rather late start. Strike a lake of some size just after leaving camp & follow round its north side, only to be turned back by bad down timber & obliged to return much of way along south side. Then found better going & kept on till about noon, when reached base of 'Poison Hill' of Indians — so named

Caribou

about a generation since Caribou were abundant on this high plateau. Now they have all been killed off or gone away. It is not known, very far to where Caribou still found, as they come down nearly to the Clearwater on the N. Thompson.

in consequence of occurrence of Veratrum Album. Had decided to take afternoon as Sunday & stopped at this place in consequence of proximity of the hill. After lunch climbed the hill, which lies than 300' above camp – a basalt outlier – but afforded a fine view. Spent most of Rem on the hill, examining & sketching the country. Seems settled & fine again this evening.

Aug 25. Overcast & threatening with light showers this morning. Rode out to S.E. a couple of miles looking for edge of basalt etc. Back to camp. Took a couple of photos. & obsn. for lat. at noon. In Rem. travelled South-westward about 6 m. & camped on little lake which we had passed once before, on the high plateau which the Indians call Sil-whoi'-a-kum or Caribou-place. Took two more photos. Camp on a pretty little grassy knoll overlooking end of lake. Most of route today through country forested with standing dead & bleached trees. Here & there a little oasis of green timber showing how attractive then partly open woods must have been before

fire passed through them. The fire, however, has had the effect of causing a fine growth of grass & pasture plants.

Aug. 26. Rode out to Portward a few miles this morning with Kirkpatrick while McEvoy rode to north, looking for boundaries of basalt etc. Back to camp before noon, getting a lot. obsn. After lunch packed up & travelled about 8 m. South-westward over high basaltic plateau between 5500' & 6000'. Get out of the burnt timber & find a delightful country largely open & park-like. This is the country that was part of the haunt of the Caribou already referred to. Get an excellent camp which appears to be within easy reach of the culminating point of the plateau north of Tranquille Lake. Take a couple of photos. of glaciated rock-surfaces. A fine day throughout with pleasant temperature.

Aug. 27. Rode with McE. up to culminating level of plateau north of Tranquille Lake. Took the camera up & got a photo. for topography; as well as general sketch, but too much local attraction that

impossible to get bearings. Back to camp & while lunch being got ready took three photos. Left at 1 P.m. & struck South-Eastward for head of Watching Ck, the E. branch of the Tranquille. Got into very rough & bad windfall & struggled through it with much difficulty & not without danger of broken limbs to horses. Then reached a well beaten trail going down along east side of valley of Creek & followed this, making good time, though for last few miles seeing little as the whole country very thickly wooded. Camped near a crossing of the stream, in tall Skein woods, at 5.30 P.m.

Aug. 28. Rode up hill to S.E. of camp & back about 3 m. over plateau, which all densely wooded. Could get no outlook, but saw a few rock-exposures. Back to camp & after early lunch got packed up & off. Sent packs on to Camp at Lac les Bois, & with Mc E. & K. rode up on hills to Eastward a couple of miles below camp. Got a very instructive outlook which settles many points raised as to junction of basalts, etc

in this vicinity. From the apparently unsuccessful warning joint now turns out very useful in proving the non existence of basalt over part of the plateau. Delayed on long on this part of trip, that did not eventually reach camp till 7.15 P.M. but exception of lunch stoppage & packing at that time have been out since 6.45 A.M. Changed plates in Camera in evening.

Aug. 29. Moved from Lac de Bois down to Lucy's ferry opposite Kamloops & camped. Arrived at ferry before noon, taking a couple of photos. of Mount Paul on the way. Got mails yesterday afternoon & kept the afternoon as a half holiday, reading writing etc. Overcast all day & windy in evening though without rain. Received last of proof of paper on Rocky Mountain region.

Aug. 30. After some delay at ferry owing to strong wind & rough water, which made crossing difficult, got horses over & in hands of blacksmith who was occupied all day on

them. Crossed self letter & ordered new lot of supplies. Mailed boy of R.S. papers & a package of seeds to Fletcher. Overhauled stuff in camp before leaving, & afterwards stuff left at hotel, getting what required for further work. Indian Prosper wishes to leave & want Sodermann to get another man in his place, which now that harvest is staying in progress seems difficult.

Aug. 31. Sunday. Spent the whole day in camp overhauling stuff & writing letters of which 16 ready for mail this evening. Heavy rain last night & showers at intervals all day. Cool weather.

Sept. 1. After an apparently interminable number of delays attributable to all sorts of causes, & after spending nearly the whole day running about town or waiting for one person or another, get away at 3.30 & camp about five miles out at crossing of Peterson or Jacko Ck. Prosper paid off & remains a Sellwood Indian

moved Frank, who seems smart & intelligent replacing him. Kirkpatrick also remains, being afraid that if he goes out on this trip he would be too late for return to College. Proposes going down to Coast before returning East. Weather rather unsettled during day & a heavy cold shower specially prepared wet us in the hill & succeeded in wetting us pretty thoroughly before we got the tents up.

Sept. 3. Heavy rain in the night & early this morning & camp consequently astir late. Decided to ride out for a few miles to complete basalt boundary & return to camp, leaving more time to get things in order & dry. P.M. moved south by 'Brigade trail' some miles. Then struck off west to very head of Dropping-water Creek, (E. branch). Had some difficulty in finding water, but fortunately discovered a little rill & got a pleasant camp in open border of woods. Just in coming to camp two of horses (Blackie & Warrior) got cantered up the trail by a tree & fell into a

deep though dry, hole in the bed of the watercourse. Had somewhat a hard setting them both out, but in the end succeeded in doing so & fortunately found both unhurt, & only one of pack-saddles injured. Seems clearing today & a starlight night tonight.

Sep. 3. Light ~~showers~~ in the night, but a fine morning. Rode out with McE. to westward & luckily in striking a road cut out in that direction by Newman, who we met at a meadow where he has a small cabin & was engaged cutting hay. Obtained some information yesterday about routes from him. Found junction of basalt & granite. Then moved camp, travelling southward & then westward & camping on Moore's Ck. near its head, preparatory to further exploration in vicinity.

Sep. 4. Rode ~~up~~ up valley to northward, but did not get far owing to thick & tangled character of country. Saw little rock & rather disappointing in result. Afn. rode out to west, occupying from noon to 4.30 but again into thick difficult

An Indian asking another to hunt with him gives to the companion so requested the first deer killed, even though the originator of the trip should shoot it. If only one killed divide, but the skin given to his companion in any case. If an Indian should be hunting near or beyond the border of the recognized hunting ground of his people or one of the Indians claiming the adjacent hunting ground should have him shot, the last-mentioned Indian heads for the place & expects to have a combination fracas the shot on the quarry shot by No. 1.

Bona says the Indian women use, for gathering the small blueberry noted on opposite page, a wooden scoop with a comb-like front & thus really comb or rake up the berries.

County & obliged to turn back before getting as far as had wished. Found a trail about half a mile west of camp going up valley which would have followed if had known of it in the morning. Cloudy in pm & before we got back to camp a heavy thunderstorm. Heavy showers continued till long after dark.

Great abundance of the very small low-growing blueberry in all this part of valley. This is the best flavored of all the blue berries & though so small is easily picked & afterwards winnowed from any extraneous leaves. Really wonderful what a good crop of these berries a minute plant bears. Saw a couple of deer this morning but did not get a chance at them.

Sept. 5. Strong stormy wind during the night, sounding quite autumnal, & similar strong wind continued all day, though without rain. Travelled Southward along valley, examining junction of granites & strat. rocks. Stopped to go on side a short distance & sent Bona ahead with packs to stop at stream about 3 m. down, but finding stream in about half a mile, he stopped there, having apparently

his idea of distance. After lunch decided to follow up valley of trib. stream which seemed good going & to run west, but found the stream to head in springs at a short distance & the course of what remained of valley to become nearly north, so they got the E. edge of the granite (which further back than usual) definitely here, retraced & followed down valley to where we found the packs Camped

Sept. 6. Off at 7 am & rode down valley about 4 m. Then turned off up hills a mile or so & continually back to camp at 1 Pm. Lunch, packed & moved off towards Camp at Scott's Ck, near lower end of Shrimp L. Stopped & took camera off pack to get a photo. of Shrimp L., which looking very pretty among its yellow grassy hills under afternoon sun. Bordered by dark green rushes & dotted over with innumerable water birds (ducks divers etc) Then left packs to go to camp & rode off to mines. Visited 'Joshua mine', which the only one actually working. Got to Camp at Scott's at 6.30 Pm, after a rather long day. Splendid rosy sunset. Changed plates in camera.

Grasses

The introduction of some grass or grasses from Australia, Patagonia, or other dry region which would flourish in this dry Cattle County of B.C. & would be more tolerant of pasturage & less easily killed out than the present 'bunch-grass' would be a matter of the first importance to this whole County & is well worth looking into.

Indians here say that the face of the moon shows the figure of a man with a basket on his back. The name of this 'man in the moon' Whā'-la.

Ind.

In some connection with the story of Skil-ap the Coyote Culture-hero, said that the Coyote at one time either placed in the sky for the sun, or placed on the sun. Found that he called out aloud whenever he saw any Indian stealing or otherwise misconducting himself below & this found so inconvenient that coyote deposed in some way. Some other being then placed in charge, but the sun altogether too warm. Lastly a third Custodian chosen when all went well. (Informant does not know particulars of this story)

Sept. 7. Sunday. Sent packs off to Camp on Nicola L near inflow of Nicola R, at same spot where had camped last summer. Rode up hills with McE & South Southward across a block of country not previously cut up. After some deflexions & trouble from wire fences, got down to Nicola R. at old road crossing, & reached Camp hungry at 2.30. The half holiday which had intended to keep them cut rather short, but got a bath, did a little reading &c. Took a photo. of the salmon like fish which S have suspected of being a land-locked salmon, which inhabits all the large lakes apparently, & is now beginning to run up the streams to spawn. A fine day with floating clouds & very pleasant temperature.

Sep. 8. Sent packs on to Douglas L, & made a detour to South of road to examine section seen across valley yesterday. Got to Douglas L. 1.30 Run, & after lunch went on hills to north of Douglas L trying to get boundaries for granite glimpsed last year. Granite area turns out much larger than had supposed & did not manage to outline it satisfactorily, though out-line of Run. Camp on border of this lake, not

Lillooet name for Pleides

Sn-mōt' = cluster or bunch

Great bear known as Mē-hātl'

= bear

Name gets little salmon-like fish found in lakes. Kamloops Kuk-en-outs'

Okinagan Kuk-en-ēh'

Lud.

Said to be very few words the same in Kamloops & Lillooet languages, a good many the same in Kamloops & Okinagan

A good many the same in Thompson & Okinagan.

fur from Indian village at outlet of lake, named Spä'-ha-min which said to mean 'scraped'. Wood scarce for fire & Frank remarks that his collection of willow branches for fire-wood looks like a 'crow's nest'. Meet Père le Jeune escorted by a Cavalcade of Indians in Sunday attire on way down from Douglas L. A fine day & quite hot for a few hours.

Sep. 9. Off at 7 a.m. & out on hills to N.W. till noon endeavouring to further outline granite area. On return go to Indian Village, & arrange with a half-breed named Antoine Lampreau to act as guide to Okanagan, the promise to join us at Chaperon L. tomorrow night. Get a photo. of Douglas L. while packing up, & in Run moved to vicinity of Chaperon L, Camping on the stream which flows from it, & getting tents up just about sun down. Another fine day, one of a series, warm for some hours in the afternoon & cool or even frosty at night. Much fine open country all round this valley.

Sep. 10. Off at 7.30 with Mc E, & riding out to westward all day, getting back to camp about 5.30 P.m. Made a round of about 18 miles in all, part of the way through rather thick timber. Bleak, cold day with cold constant wind, which did not drop till after dark. No rain, but sunshine intermittent.

Sep. 11. Heavy frost last night, with ice thick on water left out. Thermometer registers 21°. Antoine says that frost much more frequent & severe at Chaperon L. than at Douglas L. Grew good wheat & other grain about latter, but doubtful whether grain would ripen at Chaperon in consequence of frosts. Snow wooded deep in winter about Chaperon. said to have been about 2½ feet on level last winter. Break camp & move up to Eastward, striking for the Mission on Okanagan L by route known to ~~Ant~~ Antoine. Follow up valley of what appears to be main head water of Nicola. In P.m. get on plateau to N. of valley & have some thick going in places. A fine but cool day & quite chilly again this evening, rendering a good fire of block fire sticks in front of tent very.

acceptable. Camp in pine woods near bank of the stream, the whole country beyond lunch stop being thickly wooded.

Sept. 12. Travelled on south-eastward, under guidance of Antoine, making about Eight-miles in all. Had with some heavy windfall & had to chop a number of logs for a distance of about a mile. Stopped for lunch in the windfall & moved on in afn, camping near the culminating point of plateau between Chaperon L & Okanagan L. at about 5300', with intention of occupying the point in the morning. A very hard frost last night, the thermometer registering 17°, but warm & pleasant during the day. Horse known as 'Pennician' has been limping along for some days ~~Sept. 1~~ on a sprained leg. Having a spare horse since Kirkpatrick left, have fortunately been able to let him run loose. This morning, however, 'Warrior', or 'Waiai' as the Indians get it, has so bad a back that obliged to let him run & pack lame Pennician,

Undergrowth of forest above 5000'

The very small fruited blueberry. growing

Sometimes carpeted with them.

Large-fruited do. or 'huckleberry' occasionally.

Lupin (not in very thick woods

Rhododendron (often in very thick woods)

Veratrum (occasionally)

Valerian (both under woods & at 6000' & + in open)

Arnica (two species) (as last)

Sedum (smooth leaved species) (occasionally)

Pachystima (always in shade, but at very great heights, say little above 5000!)

Aster } (sparingly in woods, more abundant
Castilleja } in open)

Various grasses & Carices.

Lys. at high alt.

Sept. 13. Took transit, Camera & Sextant, in small pack on 'Buck' & with Mr Evry, Antoine & Bona climbed to highest part of mountain or ridge, about 3/4 mile from camp. A fairly good morning, though partly clouded. Occupied all morning with observations & got a lot. obsn. at noon, before returning to camp. A fine outlook to north of East & West bearings, over rolling irregular green thickly-wooded plateau, which rises to higher hills & ridges to NW & N. Several little lakes among the dark timber, looking as Bona remarked 'like stars'. See a good deal of undoubted granite in all directions & altogether outlook rather satisfactory. R.M. struck camp & moved on along trail some miles. Trail pretty rough pass fallen timber & rocky in places. Running along & gradually descending ridge which we have been on culminating point. Several deer seen today & one a buck shot at but without luck. A pair 'fool hens' knocked down with sticks, along the route. Somewhat disturbed in camp last night by some animal prowling round & breaking sticks in the dense woods where we were. Supposed to be a grizzly as this follows plentiful about here.

Indian Medicine. Find that the Parnassia reputed as good medicine for deer hunters. The plant to be put in the hat or robbed on it & under the feet, when one is sure to see & obtain the deer. The rattles of a rattlesnake likewise worn in the hat cures or prevents headache.

Ind.

"Spiritualistic manifestations" Indians aver that unknown beings sometimes throw stones at them, particularly at night, when stones may be noticed falling into the fire.

Story of a Kamloops Indian, long since dead, who saw some white object chasing him at night. Drew back from trail & fired an arrow at it as it passed. In the morning returned & found his arrow buried in a human blade bone

Sept. 14. Sunday. Travelled on along trail, descending from ridge & getting into important valley, probably that of Deep Ck., which followed. Going pretty rough in places. Camped at 1 Pm & remained in camp during P.M. Day fine & quite warm, but smoky.

Sept. 15. One of horses astray this morning & did not get away till 9 A.M. Travelled on to lake & then northward along border of lake, camping nearly opposite the Mission. Stopped for lunch in time to get obsn. for lat. at noon. A fine day & quite warm. Sam, & McE. killed a rattlesnake with 7 rattles on trail today. Air slightly smoky & calm making this fine lake look even larger & more striking than usual. It is a most picturesque sheet of water & the low cultivable area about the mission is most attractive looking, fully confirming the pleasant recollection got resulting from visit in 1877.

Sept. 16. Travelled on northward along W. side Okanagan L., lunching at Bear's River, & camping about 7½ m. beyond it. Fine day, with something

Ind.

Double-headed or two-headed rattlesnake referred to by Bona & said by him & Prospere to have been seen. Antoine has never seen, but has heard that occurs near Coldwater, Seems to be a persistent idea of the existence of the among Indians. To see one means that one of your relatives about to die.

breeze on lake. At Bear's R find a great number of the little salmon like fish running up or apparently running up, to spawn. Odd that though these fish have evidently been long in the stream, as they are becoming livid red in colour & some of them are quite worn out, with frayed fins & tails & white fungous growth in places, that they have not got further up the stream, which offers no particular impediment to their ascent. They can not all have already spawned, as many of them still hold spawn & milt. Antoine says that they all die there in the streams & do not return to the lake. Three rattlesnakes seen along trail today & two of them killed. This appears to be a great place for them. Saw the steamer on way up lake today. Paid Antoine off this evening as we have no further use for him.

Sept. 17. Travelled on northward, lunching at Biche R & Camping on Bolean or Birch R. Fine day, rather warm about noon. Fine views of lake from along trail, water appearing intensely blue under light south or south East wind.
In Biche R a good number of same fish as

referred to yesterday. A few on Birch R.

Sept. 18. Travel on northward up lake, getting to Okavagan P.O. at head of lake in evening. Fine day, but clouding on gradually & looking like rain. Packs being ahead McE & I did not know precisely where to find camps, but seeing O'Keefe's buildings & wishing to get mail went over to them. Could see no one about, but finding three little children of O'Keefe's interrogated them. The store, including post office was closed, but one of the youngsters went to the house to get the key, but returned with the news that 'She' had not the key. 'She' I supposed to be the worthy Mrs O'K, had the key in his pocket & was out somewhere & not to be back till supper-time. Thus unable to get mail or any supplies though short of several things mis. Renewed search, eventually successful, for camps. In going down wood met a Mr Chip whom I had seen at some time it seems, at Vernon, driving toward Vernon with a lady supposed to be Miss Chip. Exchanged a few words with him & struck by the remarkably delicate pink & white of his complexion & that of Miss C, as well as the children previously interviewed. Here got

so accustomed to our own new well tanned colour & that of the Indians that anything fair in the way of complexion quite striking & novel. Have only been a couple of weeks or so in the woods this time, but feel even now as often before a sort of strangeness in coming back to civilization, roads, houses & people with open fields; a sort of wish to turn back into the woods where would be work at home. Got home this evening.

Sept. 19. Interviewed Mr O'Keef personally this morning. Sent packs on to Camp at Vernon, & taking lunch, spent whole day examining works along Okanogan Lake (E. side) & across hills to Vernon. Very unsatisfactory & puzzling sections, both yesterday & today, & though the country is open, the rocks are so much rusted & covered with lichen that impossible to know what you have got except by breaking each individual piece. Everything chopped up in the most provoking way about here & scarcely any possibility of working out in detail.

Sept. 20. All day camped near Vernon, getting supplies, information etc. Writing letters & so on. Met Frank Barnard in town & Mr Dewdney, the Indd Commissioner. Also called on in camp by a fine old man A. Girouard, who has been 29 years settled in this valley. Remembers my camping here when I passed through in 77 & seems to regard me in the light of an old friend in consequence. Had a long talk with him & got a good deal useful information about routes through the country. Allowed us to put our horses in one of his fields, presented me with a bottle of preserved crab apples & altogether seemed as if could not do too much for us. A beautiful day & fairly warm.

Sept. 21. Left camp at Vernon this a.m. & moved on along Cherry Ck. road to Vernon's ranch – Coldstream. Found Mr Wood, in charge, very obliging, he permitting us to camp in one of fields & turn our horses out in it. R.R. road back on open grassy mountain to north, where, since vis it in 77, have supposed good section might be obtained. Rather a

Ires.

disappointing day's work known, as we got stopped by a terrible cross gully & after losing much time had not more than time to return to Camp without finishing section. A fine & warm day & beautiful cool starlight night.

Sept. 22. Spent the entire morning on E. part of hill or mountain to N. of Vernon's place, but without getting much additional information. Afn. travelled on along road outward toward Cherry Ck, Camping at crossing of stream about 2 miles out of Dutot's. A fine day & again very warm for a time though chilly in morning & evening.

Sept. 23. Moved on outward along road to Cherry Ck, Camping on bank of Sherwood or Spellumsteen R. about 8 m. from Cherry Ck. Mines. A fine day & again quite warm for some hours. Much of road, however, through well grown woods of Douglas fir, spruce, red pine, & larch (occidentalis) with some Cedar & white Pine (monticola) met Riské who formerly lived on Chilcotin, with others travelling in a Cart, having come from Manashee mine this

morning. Have not seen him since 1875 when I passed his place going up the Chilcotin.

Sept. 24. Moved on to Cherry Creek, camping about half a mile from the Creek on the upper flat. Spent P.m. along the Creek, returning to camp just before dark. Another very fine day, but rather smoky. Met an intelligent & loquacious chinaman on the Creek, who remembered seeing me here in 77 & has been living & mining here himself ever since.

Sept. 25 – on to McIntyre's mine, camping in Valley near his houses about interested between One branch of Cherry Ck & Kettle R. Spent P.m. on the mountains to eastward (Monashee Mt.) with McS. examining various openings &c. got back to Camp just about dark.

Sept. 26. Started early with McEvoy & McIntyre & after spending some time at another openings on Mt., journed on to highest point of the block of irregular plateau known as Monashee Mt. Granite & phyllites. with general examination of country & description by McI.

who has prospected & run over most of the mountains in sight. Air somewhat smoky, but on the whole got a very satisfactory outlook to northward of E. W. Not too good for photos., which probably pass. Superb range of rough mountains to north-eastward, one in particular, forming the southernmost of the high range very much broken & pinnacled & showing pale purple through the smoky air. Very fine about 8000'. Mc Sutyze is a very intensely & intelligent old man, full of information the result of his own observations. Experiences of past years, adventure with a grizzly &c. Got back to camp again just about sunset, after another long day. Decide to remain here tomorrow & finish observations at leisure. After supper spend a while talking over matters with Mc S. in his house.

Sept. 27. Decided to rest today in as a sort of Sunday, but found after all little spare time. Up to main working tunnel in morning & examined it, taking three photos. from the road. P.m. walked southward about half a mile with Mc Sutyze to examine edge of granite & its vicinity. Packed up specimens, attended to

holes etc. Spent a while in the evening having a chat with Mr S. & his man Hollingsworth, who, with a Chinaman cook etc the entire population of the Camp at present.

Sep. 28. Off in good time & travelled back along road, making a few observations by the way & Camping on back of Shearsheds where we had Camped on 23-24th. Day fine & quite warm. air smoky from numerous grass fires, which now, owing to absence of rain for some time, begin to start up in all directions.

Sept. 29. Travelled on westward along road, making some excursions to points not visited before & further examining rocks. Very fine day but air very smoky

Sept. 30. Low barometer of last night & gathering clouds justified by rain in the night, but rather light showers. This morning extremely gloomy & spitting rain. Uncertain whether a wet day is prospect, but decided to start. Sent packs on to Vernon's place & worked along South side of

Valley with McE. about base of hills. A few drops of rain during morning but Pm. clearing & becoming colder. Did not reach Camp till 2 Pm. & thought it not worth while working a second more. Called on Mr Wood, in charge of Vernon's farm, & obtained some useful information about routes, trails &c.

Oct. 1. Sent packs on to Camp near Long Lake (head) & rode round to East arm of lake & thence to camp. Threatening with lt. showers in Am & in Pm. cleared towards sunset, though in very heavy rain. In Pm. examined hills to north of Camp. McE. rode in to Vernon & brought out a considerable mail, & which devoted most of morning, the rather chilly temperature being ameliorated by a fire in front of tent. Saw five or 6 deer today, but got no shot.

Oct. 2. Spent the whole day from before 8 Am till 5 Pm examining hills between Long & O'Ramagan Lakes. Day generally fine, though a dash of rain in Pm. Wrote a few letters to post tomorrow

at Vernon. Sky clouded over again this evening & rather unsettled looking.

Oct. 3. Moved in to Vernon & stopped there for noon, getting some additional supplies & attending to other matters. Afn. Sent packs on to camp near Okanagan P.O. & spent the afternoon examining rocks on hills between Swan L & Okanagan L. A fine day, but generally clouded & the air begins to have a very autumnal sharpness about it. Great numbers of geese & prairie-chickens on the stubble fields about Okanagan.

Oct. 4. Rain in the night & early morning making late start in camp this morning, & though rain ceased about breakfast time, sky so threatening & promised so bleak that until the late hour at which we had arrived I decided not to move till Afn. In Afn with dark lowering wintry looking sky, but no rain, moved on to first crossing of Salmon R, camping where abundance of fire-wood & fair shelter, both essential now.

Oct. 5. Heavy rain in the night, but about sunrise appearance of clearing & day fine throughout, though generally clouded. Moved on westward as far as Grande Prairie.

Oct. 6. Another wet stormy night & heavy rain in morning. Decided not to move camp at any rate till Sun. as weather very bad looking & begin to think that the loss of time entailed by such weather as we have been getting scarcely justifies keeping in the field, particularly in view of other engagements. Spend some time looking at rocks near camp & eventually decide to take the road for Kamloops, abandoning for the present further trouvaux toward head of Salmon R, & particularly the route blocked out to Chapman L & thence northward to Kamloops. Sun. windy & showery, but move camp some miles toward Ducks. Weather this morning shows no sign of improvement, & snow is getting lower on the hills when occasional glimpses of them can be got. Feel a certain regret in closing work while so much remains to be done, but not without some satisfaction in knowing that the incommodious & zophers of

Indians believe that burning wood from a tree struck by lightning brings on cold weather, evidently a deduction from the cold following thunder storm. Thus in spring when travelling among mountains on crust of snow throw splinters of such wood on the fire to make weather cold enough to keep the crust firm. This especially desirable if travelling with dogs. Also believe that a small splinter of such wood wrapped up with bullet in loading a gun greatly increases the deadly character of the bullet.

End.

present life about to be changed for the better.

Oct. 7. Travelled on to Deck's Station on railway, stopped there, & on enquiry found that a freight train was shortly expected. Took the freight & got into Kamloops about 4.30 P.m. Left McCrory with party at Decks to go on to camp a few miles further west & come in tomorrow. Very heavy rain & wind last night & strong cold bitter west wind all day but evidently clearing. Find that the fair is open at Kamloops on the 9th & last three days. Very difficult to get accommodation, but manage to get rooms down at hotel.

Oct. 8. Party arrived about noon. Got stuff put into store, having general overhaul & winnowing etc for tomorrow, hiring etc. Day fine but cold strong wind.

Oct. 9. Occupied overhauling & packing away Camping outfit. Arranging about wintering horses. Sorting over, separating

& packing stuff etc. Paid off the men, & generally got arrangements advanced toward leaving. A very fine though cool day, with very appearance of settled weather. Kamloops full of strangers attending the 'Inland Exhibition' which opens today.

Oct. 10. at Kamloops. Mr E. took ride to northward E. of N. Thompson to complete outlines of small area previously found there. Looking after various odds & ends connected with closing work. Visited the Agricultural Exhibition, now in progress in the afternoon.

Oct. 11. at Kamloops. Finally completed packing &c arranged with Mr Marpole of C.P.Ry to get me a velocipede to examine roads along line in Selkirks. To leave by early morning train for Glacier, & take down grade first on one side then on the other.

Oct. 12. Took 4.18 am train to Glacier, arriving there about 130 pm. Got word about telescopic letter, & arranged to leave after breakfast on Monday morning for examination of rocks along line, taking the W. slope first. A Wesleyan Minister named Turner here & a family of Allens from Glasgow connected with Steamship Line. Being Sunday, service held in dining hall.

Oct. 13. Started with McEvoy & travelled west to Illecillewaet, where stopped for dinner. Then on to Albert Canon Station, where put up at a little place called Hot Springs Hotel

Oct. 14. On to Revelstoke, arriving there about noon. To Abrahamson's Hotel. Found a Carbon skin with two tons for sale, & occupied rest of day in putting it in shape & ready for shipment to Ottawa

Oct. 15. Took 10.10 am train back to Glacier, getting telescopic letter up on

same train. Heavy snow storm this morning at Revelstoke & looking rather unpromising for work. Stayed at Glacier House Run & Sunday, being the only guests there.

Oct. 16. Up early, but found the rail too much covered & left snow that quite impossible to get velocipede to run. Kept waiting till 3 P.M., when passenger trains cleared the rail. Got on only 4 miles, to Rogers's Pass Station, when finding that there was no place to stop beyond, had to remain, getting quarters in a pitiful little 'hotel'.

Oct. 17. Off early & got on to Donald just before absolutely dark in evening. Managed to get fairly satisfactory exam. of works, though considerably delayed by trains in the afternoon. To Selkirk House at Donald.

Oct. 18. Got up by morning train, which somewhat late, & reached Kamloops after midnight. To Grand Pacific Hotel. Cloudy & raining more or less all day.

Oct. 19. Sunday. At Kamloops. Wrote some letters & got arrangements made for departure. Left by night train for Vancouver, with McCoy.

Oct. 20. Would have reached Vancouver on time, but pulled up by a huge tree fallen across track about 8 miles from Vancouver. Road injured & delay of about six hours. Got to Vancouver eventually about 9 P.M., making a long fast from breakfast at North Bend. Has been raining on the coast for a week or more & coming down in torrents today, causing slides & trouble along the part of railway bordering inlet. Everything here most humid.

Oct. 21. Had proposed devoting day to collecting fossil plants, but continued rain rendered it useless to undertake the trip to locality near Hastings. Called on Mrs Abbott & others in town. Spent P.M. going over bones & boring at Kaneka Ck with J.W. Vaughan. Despatched No. 2. to Victoria to endeavour to get some information for map from Surveyor General's Office. Prepare going East myself tomorrow.

Oct. 22. Leave for the East on 1 P.M. train.

Oct. 23. On to Field for supper, Fine weather through the Selkirks.

Oct. 24. Going eastward by C.P.R. on time. Fine sunset beyond Swift Current.

Oct. 25. Reach Winnipeg this P.M. Meet Waldo, who goes down on same train.

Oct. 26. Sunday. Fine weather though partly cloudy & cool. Travelling East, on time.

21 June.

B = 5-860' 7 am: Camp.

6068- 8 am: summit.

Sl. 5000'.

no. 1, 5 Seconds Hub &

a fault 3 Sl.

2. W. ~~Ta~~ do. 9 sec.

3 Spotty S.W. Guard

Fault L. 8 sec.

B = 5940 1.45 Rm. Camp

5500 first Douglas