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W.S. Park

The Ramparts - Tonquin Valley

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THE ALPINE CLUB OF CANADA**MOUNTAINEERING SECTION****The Apex Of The Coast Range***By W. A. Don Munday*

Since this article was written the Geographic Board of Canada has changed the name of Mystery Mountain or as was suggested Mt. George Dawson to Mt. Waddington. McCallum Mt. is Devereux Mt., Trapper Creek is Brew Creek, Mt. Marcus Smith is Mt. Marcus, Mystery Glacier is Franklin Glacier, Gorge Creek is Whitemantle Creek, Mussel Creek and Laurette Lake are Devereux Creek and Lake; Mt. Massive is Mt. Reliance.

The route of the 1926 expedition to the highest peak of the Coast Range of British Columbia had proven prohibitively difficult, but that season's exploration had not definitely determined a better one. Presumably the great southern glacier of the region drained to the Pacific Ocean at Knight Inlet¹ by way of the Franklin River.² Further exploration was therefore a necessary preliminary to the 1927 expedition. The peak's official height is 13,260 feet.

Leaving Vancouver on the Union steamer "Venture" on May 30, my wife and I arrived at Knight Inlet cannery at 10:30 p.m. the next day. Mr. Matthews, cannery manager, provided us with a room on the floating camp, "Samson," a former government dredge.

We got away next morning about 10 a.m. with our 15-foot boat and outboard motor, and as soon as we left Glendale Cove we got a taste of Knight Inlet's infamous west wind rushing in from Queen Charlotte Sound. We ran eight miles to Kwalate Bay to meet Mr. J. R. Stanton and his wife; trapper, fisherman, handlogger, he is typical of the hardy resourceful folk scattered along British Columbia's mountainous coast. He gave us much useful information about Knight Inlet and advised us to go up the Klinakline valley by way of his trap-line and try to reach the Franklin Valley by climbing over the intervening ridge. Their hospitality, and the fact that we could not get into the mouth of the Klinakline (Kleenakleen) River before the next day's afternoon tide, decided us to spend the night with them.

Indian tradition asserts that a village at Kwalate Bay was destroyed by a tidal wave caused by a landslide from the precipice of Adeane Point three miles 'away diagonally across the inlet. However, waves of almost destructive size caused by rock falls have been experienced by the Stantons in recent years as the result of the rapidity with which a splendid waterfall is tearing down a cliff two miles away and directly across from the old village site.

The crumbling character of most of the mountain walls along Knight Inlet gives to it a wild aspect. Winter avalanches sweep whole mountain sides from crest to tidewater. Waterfalls

1 Named after Admiral Sir John Knight, K.C.B., by Lieut. Commander Broughton who examined Knight Inlet in 1792. Shown as Braza de Vernaci on Valdes and Galiano's chart, after the lieutenant of the Spanish exploring ship "Mexicana." B. C. Coast Names, Capt. Walbran, p. 291.

2 Named after Benjamin Franklin who in 1892 explored from Tatla Lake down the Klinakline valley hoping to find a route to drive his cattle to the coast.

abound in June, many cascades being thousands of feet in height. Rainbow Falls fill a box canyon at sea level with mist; passing at a little distance the observer sees the cloud change hue slowly through the whole range of colours of the rainbow, only one colour being present at a time. It is a most beautiful spectacle. At Cascade Point a glacial stream divides and flings twin falls over the end of a truncated spur. Petals of wild crabapple fell like snow around a hidden cabin beside one of the channels of the Klinakline River to which we had been directed. We spent the night here before going on to the second lake in "Interior Valley," a remarkable valley within the main valley. Viewing this from the inlet, Bancroft³ regarded it as an example of the truncation and alignment of spurs which record so graphically the intense glaciation which went on in these fiords and their continuations inland. Interior Valley is about twelve miles long, its six lakes "step up" regularly, and seen from above it seems an independent watershed invaded and captured by the ancient Klinakline Glacier.

A climb to 3,500 feet up the eastern mountain side permitted alluring glimpses of the glacier only partly explored which, at 500 feet above sea level, forms the source of the west fork of the Klinakline River. The glacier is about 15 miles inland and is probably 25 miles long; it is variously reported to be four to six miles wide where it forks 10 miles from the snout.

The crest of the ridge on which we climbed was wooded and we caught only glimpses of Mystery Glacier 2,500 feet below. We had been misled, for the Franklin Valley was the logical approach. All the big peaks at the head of the glacier were in cloud. But we had cleared up some doubts as to the relationship of various topographical features, so the time was not wholly wasted.

On the third day we went back to the boat, the stage of the tide required to let us out of the Klinakline River barely giving us time to get into the mouth of the turbulent Franklin while it was somewhat tamed by the flood tide. The range between high and low water in Knight Inlet sometimes amounts to over 20 feet, the water at times rising or falling an inch a minute. We landed at the foot of a rock-slide swept by the river.

Franklin valley is a typical glacial gorge. River channels occupy most of the floor. Its eastern wall rises in an unbroken sweep from 5,000 to 7,500 feet; the western is less imposing. The weather was none too favourable. Dense tangled vegetation on rugged sidehills proved impenetrable under the handicap of heavy packs. The ground was often very rough underfoot, so we set to work to cut a trail through to the glacier, about six miles in a straight line. One evening in driving rain we climbed to about 1,200 feet above sea level on the glacier, and about 700 feet above the snout. Next day we returned to the river mouth.

Thanks to our seaworthy boat, we reached Kwalate Bay on June 13, in spite of the west wind and threatening seas. There is amazingly little shelter along the whole 70 miles of the inlet. Next day we were able to continue to the cannery and returned to Vancouver on the "Venture."

We returned north on the same ship on July 18, my wife and I being the only two who had been on the previous year's expedition. Last minute changes resulted in the personnel of the party consisting of our two selves and Mrs. Munday's sister, Mrs. E. M. McCallum.

Our engine had been damaged in some unaccountable manner and the spare part could not be got in less than two weeks from Vancouver, so we rowed to Kwalate. From there Mr. W. Perkus towed us about eight miles more to Grave Point where we spent the night in an old Indian smoke house. In the morning we rowed the remaining 20 miles against the tide and the current produced

3 Memoir No. 23 Can. Geological Survey, by J. Austen Bancroft; p. 41.



Don Munday

Mt. Waddington From Marvel Ridge



Don Munday

Mt. Jubilee and Confederation Glacier From Across Franklin (Mystery) Glacier

by the two big glacial rivers.

Bulldog flies plagued us on the water, and became almost unendurable at the mouth of the Franklin. Caching boat and engine and unpacking supplies used most of the following forenoon, we broke camp on the 23rd and moved up-river opposite the first tributary from the east. The river was rising rapidly and by forcing us on the higher rougher ground increased greatly the task of relaying supplies, and also necessitated some heavy trail cutting through devil's club, salmonberry, etc. The glacier appears to be discharging more debris than the river can carry, so the level of much of the valley floor is rising. Old moraines are still subsiding towards the river, thus opening root-bridged fissures in the woods.

Ice blocks were seen plowing up the boulders in the river bed. At times they were sufficient in quantity to choke channels and divert the river. A rock weighing approximately 30 tons, and on which we had cached supplies, was moved later about 50 yards down a new channel cut through green timber. Much of the ice reaches Knight Inlet but only in small pieces.

The glacier has retreated about a mile in the past 100 years. The old lateral moraines, stand 500 feet above the river and indicate periods when the ice melted back slowly for some time before extensive losses took place again. The river had undermined the west margin of the glacier for about 400 yards so that it flowed through a defile between the 100-foot ice cliff and the dangerously unstable lateral moraine. The cavern of exquisite violet and blue from which the river emerged in July and August was about 150 feet in width; in June the cave did not exist; in September it was breaking down.

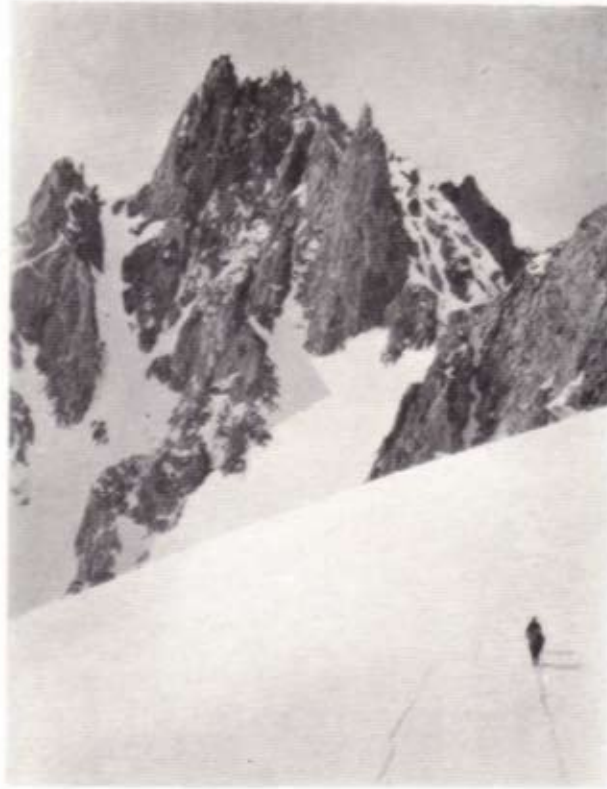
The glacier proved disappointing as a highway. It has a complex flow and descends in a series of steps, ice-fall conditions being hardly smoothed out before another break occurs; each promontory constricts it sufficiently to produce high pressure ridges. Intense thawing at low altitudes steepens southern faces of ice, and the strong cold wind down the glacier serves to accentuate the differential thawing. Fortunately we had crampons, for, although the gradient of the glacier is generally gradual, much of the footing was so steep that step-cutting would otherwise have been a necessity with heavy packs. The wind down the glacier was strong enough to be reckoned as an impediment.

The lateral moraines average about 250 feet in height, and the steep mountain sides above them present surprising difficulties in the matter of finding a site on which to pitch even a small tent. Some of the surface streams cut such deep gorges in the ice that they were obstacles to be reckoned with.

Lit by the setting sun, the twin summits of Mystery Mountain came into view on July 29 from an elevation of 1,500 feet on the glacier. The evening of August 1st found us with heavy packs almost baffled by a maze of great chasms in our attempts to get "ashore" to the foot of a pretty water-fall on the east side. A flowery but rough morainal bench looked delightful, but obviously was only a fair weather camp.

This turned out to be our base camp. The elevation was 4,200 feet. Having brought all our supplies up the glacier and indulged in a day's rest, we climbed 3,200 feet behind camp to a crest we named Marvel Ridge. Visibility was perfect, and the summit revealed the immensity of Mystery Glacier as well as the unchallenged supremacy of Mystery Mountain whose 10,000 and 11,000 foot guardians were dwarfed by the monarch's mass and height. It became apparent that the glacier covered fully 100 square miles and was 25 miles in length. The day was one of unforgettable memories.

We left base camp next day with four days' grub and no certain destination as we did not



Don Munday

Lower Pinnacles of Spearman Peak on East Ridge of Mt. Waddington



Don Munday

Franklin (Mystery) Glacier, Opposite Base Camp (1927) With Junction of Confederation Glacier at 4000 Feet

know how close to the mountain we could find firewood. The place we had in mind was Icefall Point on the west side of the glacier which here swept round in an arc of almost 90 degrees, its serried séracs advancing majestically in curving waves, subsiding to lose themselves gradually in the flatter stretch 500 feet below.

Shortly after descending the troublesome moraine at base camp, we had to tackle an imposing mass of séracs. I put my pack down while cutting steps around a huge pinnacle, whereupon a muddy torrent burst through within a yard of my pack. Later we found that this was the suddenly released water of a marginal lake formed by one of the streams from Yataghan Glacier. Sometimes the lake did not exist, but sometimes it was 40 feet deep. Longitudinal crevasses proved vexations on this trip.

At Icefall Point we found an exposed campsite at 5,500 feet near a little morainal lake. There was enough wood for a small party for a short time.

For a mile above this main icefall Mystery Glacier was badly crevassed, so next day we climbed over Icefall Point carrying with us a supply of cooked food and a limited amount of firewood. By way of the first of the large southerly tributary glaciers we descended to the main glacier and ascended its westerly fork. Crevasses were troublesome to a degree, and about 4 p.m. we became involved in a series crossing each other at right angles and almost completely masked though highly unsafe. For an hour we travelled away from our objective more than toward it. Shortly before the sun went down we found a ledge at 7,000 feet on a cliff cluttered with loose debris by recently retreating ice. Here we bivouacked. Many meteors were noted this night.

Starting at 4:15 a.m., we had an anxious climb of 900 feet up glaciated slabs heaped with loose boulders. We then descended 600 feet to Dais Glacier, crossed it to Regal Glacier, and ascended the latter. It tumbles magnificently out of a 10,500 foot basin in the angle of the great west ridge and the southwesterly spur; the crest of the latter (never yet seen by us in profile) promised access to the main mass of Mystery Mountain west of Epaulette Glacier which caps the summit ridge.

Regal Glacier offered enough problems to be exhilarating to the leader at least, and its snow formations were splendid even in a region where glacial features are on a colossal scale. A bergschrund guarded the base of the cliffs everywhere. Two attempts failed to force the upper lip, and finally we had to cross a slender bridge and traverse a steep ice slope to steep rocks, where a shower of fragments greeted us as we took off crampons with one hand while hanging on with the other.

The rocks were shattered, the ledges sloping. We went straight up to the apex of a small peak about 11,000 feet high. Much of the south face of this ridge actually overhangs. Advance along it was not perhaps impossible but certainly impracticable, calling for the traverse of difficult towers that almost attained the dignity of individual peaks.

But we were now only level with the top of Dais Glacier, above which rises the immense south wall of the mountain, crowned at the nearer end with the impending blue cliffs of Epaulette Glacier. Forest fires dimmed distant views.

The worst part of the descent was the glaciated slabs above our bivouac, which we reached at 7:10 p.m. The tedious tramp back to Icefall Point next day was by way of a cliff-foot capped by a lively hanging glacier on the side of Mt. Cavalier.

From Icefall Point we went on the 9th, to base camp and brought up more grub. Then the weather broke and we found our camp site very bleak. Snow fell on all the peaks.



Mrs. Munday

North Peak of Mt. Munday at Left, Main Peaks in Centre Distance. One of Arabesque Peaks at Right From Spearman Col

On the 13th we set out for Corridor Glacier, the east branch of Mystery Glacier, by the same route over Icefall Point. The two branches meet almost head-on at the base of Mt. Halberdier, Corridor Glacier then being forced abruptly around the end of Glacier Island in an arc of nearly 180 degrees, greatly disrupting its surface. Glacier Island is capped with ice that flows opposite ways to Agur Glacier⁴ and Corridor Glacier.

Finding the ice much shattered at the angle of Jester Mountain, we climbed the cliffs 350 feet to a small grass patch which made a fine bed, although a little rain would have made it untenable. The elevation was 7,000 feet. A handful of juniper sticks helped out the scanty supply of wood we brought in our packs.

By brilliant moonlight we left at 12:40 a.m., descending to the broken: marginal ice of Corridor Glacier and working out to the middle where the longitudinal crevasses were completely masked by thin, brittle snow. The distance involved made it impracticable to sound with the axe at every step, so the leader was certain to break through frequently. Mrs. Munday assumed leadership on the return trip by moonlight.

We sat down at dawn for second breakfast on an ice mound at the foot of the great trough plowed for 2,500 feet down the icefall of Buckler Glacier by avalanches from two hanging glaciers high up on the face of Mystery Mountain. Richly violet, the shadow of the earth hung in the south-westerly sky under a band of glowing rose so vivid it might well have been the sun's vanguard instead of night's rearguard.

The massive ruins of the icefall were a delight to the eye, but serious obstacles. More than once a single bridge was the only possible route in the whole width of the icefall. To avoid passing immediately under the hanging glaciers we were forced to find a way up a succession of toppling 100 foot walls, and we crossed the glacier three times among their immense fragments before we found a causeway to the basin above. Tawny smoke-clouds were now pouring over Spearmen Peak and Mt. Munday⁵ from the north.

The sunlight had struck the upper face of Mystery Mountain and the great precipices reverberated with loosened rocks and ice and snow. Most of the southerly face is so swept by avalanches that the edges of ledges are distinctly rounded off.

We hoped to gain the crest of the eastern ridge by way of a belt of cliffs under the snow slope on the western face of Spearmen Peak which guards the end of this easy-looking ridge. The ladies described the rocks of Spearmen Peak as "looking like marble cake, only more so." The rocks are intricately mottled with several colours from white to nearly black; the effect is a most baffling camouflage giving the misleading impression of easy climbing where it is wholly impossible. The nearly vertical slabs of granite schist break with numerous small overhangs.

We tried three easy looking ways, the last one being nerve-racking in the extreme as the heat of the day was bringing down snow and rocks along the wall. Both women were bruised repeatedly; Mrs. Munday's hair was matted with blood, and her arm severely bruised by interposing it toward a rock from her sister's head. Finally a place was reached where to have advanced would have violated the rudimentary principles of good climbing. And even had this danger spot been conquered it would have meant a night on a ledge at 11,000 feet before continuing the ascent.

Therefore we started down, reaching the bergschrund at dusk. Avalanches of snow and

4 From Mt. Agur, named after A. E. Agur, member of the 1926 expedition, killed in an avalanche near Vancouver. Height approximately 10,000 feet.

5 Name recommended by Mr. G. G Aitken, B. C. representative of the Geographic Board of Canada, after members of the climbing party. Height approximately 11,000 feet.

rock had choked some of the crevasses, thus furnishing us with short cuts, but our crampon tracks had thawed away, and but for the guidance of a black film pack paper we should have perhaps had to wait three or four hours for the moon to reveal the way down the icefall.

Frost had not yet strengthened the snow bridges, walls were dripping, pinnacles collapsing. When we had groped an anxious way through the worst of the icefall, the moon topped Spearman Peak. Steep slopes by this time had become especially trying as the frosty crust broke away from the sodden layer below. Four hours were required to descend 2,000 feet of the icefall. We reached the bivouac at 3:45 a.m.

Shortly past noon we were packing up, and we reached Icefall camp at 6:55 p.m., having decided to start on the morrow for the base of the formidable west ridge which Mrs. Munday thought held the secret of the route to the summit.

Passing under the ice-capped cliff in the icefall on the slopes of Mt. Cavalier, we missed a fusilade of fragments by a scant minute. We spent the night about 200 feet above our first bivouac, but the inviting little grass patch was mostly afloat in a pool, and it proved a cold, uncomfortable camp.

We again climbed over the spur of Mt. Cavalier to avoid the icefall at its westerly base, and descended into the immense basin into which empty Dais, Regal and Fury glaciers. Travelling was tedious owing to the snow being deeply pitted. Fury Glacier descends from Fury Gap in a thousand-foot icefall. Near the top of this we got off on to the rocks and bivouacked just below the glacial crest of the Gap, at 8,700 feet.

Fury Gap is not a true pass, the descent on the north to Scimitar Glacier being impracticable. Dead insects and small migratory birds littered the snow. The Coast Range, here has a well-defined crest and Fury Gap is the only real break in it: for many miles east and west.

Smoke was again dense. Going across the Gap to the base of the peak we named Mt. Chris. Spencer⁶; we studied such unpromising parts as were visible of the great west ridge with its 10 peaks ranging in height from 10,000 to 11,500 feet. The north peak shone far away, 5,000 feet above us. From the immense basin enclosed by Mystery Mountain, Teidemann Peak and Mt. Hickson⁷, Scimitar Glacier cascaded chaotically in two parallel icefalls for 2,000 feet into a curving valley that was savagely desolate in its utter lack of vegetation, the bare crags soaring from the glacier floor too sheerly, in most places, for snow to cling. These peaks between Mt. Spencer and Mt. Bell⁸ promise excessively difficult rock climbs. "Forbes dirt bands" are well defined on Scimitar Glacier. The Geographic Board has approved the name of Mt. Geddes, after the late Mr. M. D. Geddes, for a turreted rock peak about 11,500 feet, west of Scimitar Glacier.

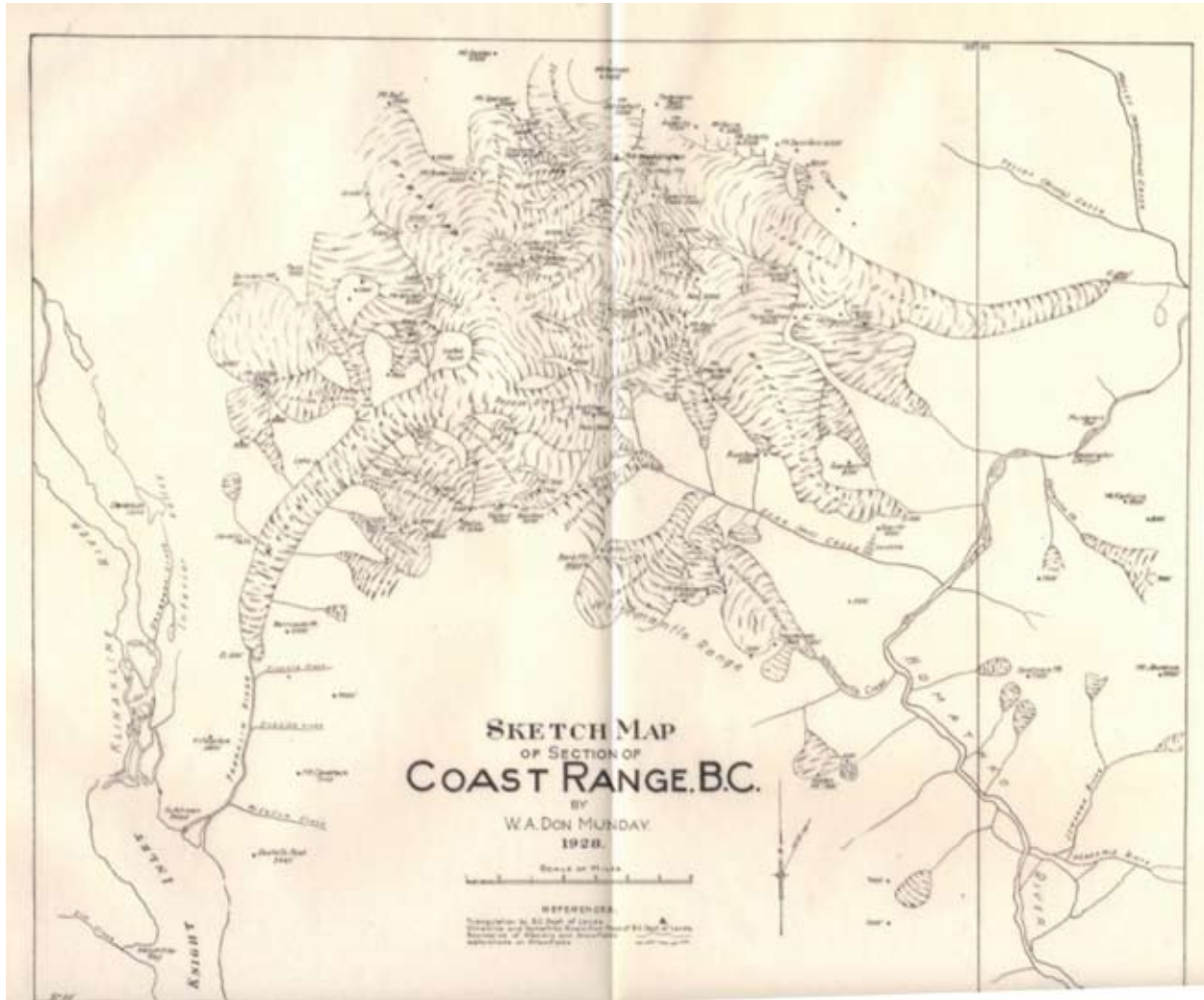
We overslept, not getting away until 5 a.m. At 7:10 we reached the summit of Fireworks Peak, 10,500 feet. Beyond this we met the summit ice cap which extends the full length of the mountain although scarcely hinted at in views from the southern side. Quite extensive sections of the crests of the peaks of the west ridge actually overhang the southern wall. Alternating with equally narrow ribs of ice, these peaks form the splendid skyline route. We had no crampons, the changes from rock to ice being too frequent to use them to advantage.

We met the first big gap in the ridge at 11,500 feet, the peak on which we stood was a thin rock wall leaning over southward at an angle of about 10 degrees; the north side was hard ice too steep to cut steps down, so the enforced descent of 300 feet was by way of the badly shattered end

6 After Mr. Chris Spencer, A.C.C. Height about 11,000 feet.

7 After Dr. J. W. A. Hickson, A. C. C. About 11,000 feet.

8 After Col. F. C. Bell, C.M.G., A.C.C. Probably 12,000 feet



W.A. Don Munday

Sketch Map of Section of Coast Range, B.C.

of the rock wall which was like a narrow buttress leaning sideways appreciably.

We then approached what we had referred to as the Bulge as in some lights its ponderous icecap appeared to swell out over the edge of the southern cliffs. After failing to outflank it on the north, we cut steps directly up it for about 100 feet.

While lunching on the summit, about 11,500 feet, the rocks beneath our feet seemed to quiver with the thunderous descent of thousands of tons of rocks from one of the peaks of the southwest ridge, and we watched the tremendous mass crash down upon the tiny line of foot-prints still marking the route of our first attempt.

The descent of the Bulge for about 300 feet was as curious a situation as a climber is likely to meet. A lip of broken rock averaging 18 inches in width dipped diagonally steeply along the base of the precipitous ice cap, and between the rocks of the ledge the rashly inquisitive glance might note that the whole ledge overhung like a cornice.

Below this airy pathway we encountered changed snow conditions reminiscent of the last thousand feet of Mt. Robson, both snow and ice possessing a honeycombed structure and consequent lack of cohesion.

Negotiating a bergschrund, we descended into a deep and steep glacial trough, mounted a huge snow dome and faced the amazing knife-edge of the west arête where it runs into Epaulette Glacier. The northern face of the arête was largely a smooth slope of bare, blue ice down which small rocks slid almost silently.

From the base of the wall a gaping bergschrund curved out to meet the cliffs over which the snow dome broke northwards. We finally got across, one of the party breaking through. Descending eastward into another glacial trough, we stood at last at the foot of the 1,500-foot incline leading into cloud toward the peak.

Part of our route was strewn with ice blocks from impending masses above. The surface of the deep powdery snow was wind-packed to a condition resembling "wind-board" and tended to avalanche. The crevasses here were of stupendous size and wonderful beauty.

To the dense smoke was now added the murk of gathering storm. We plodded laboriously upward, Mrs. Munday now breaking the trail most of the way. At about 6 p.m. we stopped and ate on a flattened slope nearly level with the base of the north peak which was again clear of cloud.

As we were changing places on the rope at 6:40 p.m. (half an hour later by the right time), preparatory to cutting steps up the final 400 feet of nearly bare ice, a snowcloud swirled redly between us and the low sun. We caught a brief glimpse down Teidemann Glacier's 15 miles of ice, and looked down on top of Mt. Munday's 11,000-foot crest, then cloud hid all.

With all haste we retraced our blurring footsteps through the deepening shadows, but a little light remained as we climbed the "cornice" ledge; it failed as I re-cut steps down the west side of the Bulge. Groping our way slowly up the other two cliffs in the dark was a nightmare experience as the blast shrilled across the ridge. Had we not got back before these cliffs iced up, our situation would have been grave indeed. Mrs. Munday led with a carbide lamp. In spite of darkness and a frozen rope, the last man was not endangered by falling rocks. Part of our carbide supply had been mislaid, and the lamp gave out before we crossed the last treacherous stretch of the ice-cap to Fireworks Peak at 11:30 p.m.

On this exposed rock face the full fury of the storm smote us, the wind nearly pinning us to the rocks; lightning and thunder now came simultaneously, flash following flash so closely that the alternate brilliance and blackness left us almost blinded; rain, hail and snow lashed us in turn. Our ice axes buzzed with blue fans of flame up to three inches in length for three hours; a dancing

fringe of flame around the brim of my hat made a beacon of me when the storm was not too thick, the flame of my ice axe being of less guidance to the others because jutting rocks around us glowed with similar weird lights. The snow on our clothing shone with ghostly light.

Séracs fell frequently, and from the heights the avalanches swelled the echoing thunder. We sheltered briefly under a projecting rock, but the only footing was rocks shakily wedged in a wide, deep crack below. The storm showed no sign of abating, snow was rapidly making the rocks more difficult, so we went on down, dropping from rock to rock in a way we would not have dared in broad daylight.

We came unerringly through the storm to our bivouac at 2:30 a.m., only to find water pouring across the ledge; wood, spare clothes, grub, bedding, all alike were soaked. A pot caught four inches of water this night! The tent intended for high camps had been ground under the heel of a huge shifting rock while cached on the lower glacier. We shivered under the tarpaulin until daylight, then made our way down the icefall. Storm still raged on the mountain, but a little feeble sunshine greeted us before we reached Icefall Camp at noon. Here we cooked a scanty meal, then broke camp in renewed storm which lashed us down the glacier to base camp, reached at 8 p.m., 39 hours after starting the climb.

Unfortunately for our chances of resting after these two attempts on the mountain, Mrs. McCallum had to leave for home the next day. Unsettled weather continued. After many expected and unexpected difficulties, we put her on board the "Venture" at Glendale Cove on the evening of August 23. Six days later my wife and I were back in base camp an hour ahead of a storm that lasted six days and seven nights with only three hours' intermission. One night the harmless-looking little waterfall behind camp swelled in a few minutes to a width of 100 feet and swept through camp. By desperate efforts we saved everything but a little grub and a pair of snowglasses.

Bright cold weather followed, but it failed to restore even minor peaks to climbable condition. We were able to dry our belongings, and also made a pleasant exploratory trip up Confederation Glacier, a big western branch of Mystery Glacier. After caching various things that might be useful for our 1928 expedition, we started down the glacier on September 9, and boarded the boat at Glendale Cove on the 13th, wind and tide not having proved more than ordinarily troublesome. Quicksand along Franklin River had been a real danger.

Many courtesies were extended to us by the management of the Knight Inlet cannery, by Mr. and Mrs. Stanton, and Mr. W. Perkus.

Despite the necessity of "man-packing" from sea-level, Mystery Glacier is the logical route. The region possesses considerable geological interest, but the time spent unravelling the intricate defenses of the big mountain prevented trips in other directions.

From The Athabaska River To Tsar Creek

— 1927 —

By Alfred J. III. Ostheimer

For several summers I attempted to organize a party to explore the Clemenceau Area. The region surrounding Mt. Clemenceau was distinctly remote from the beaten track and the blazed trail; its peaks and icefields had scarcely been touched by the foot of man; many of its secrets were still hidden from the photographer, topographer and scientist, not to mention the alpinist. From all



Canadian National Railway

The Members of the Expedition

Left to right - John de Laittre, Kenneth Allen, Alfred J. Ostheimer III., Hans Fuhrer, Adam Joachim, Don Hoover, Jean Weber and W.R. Maclairin

view-points, therefore, here lay an excellent opportunity for work, and, with time and favourable weather, one could enter the nearby Athabaska, Chaba, Tsar and Whirlpool sections.

Finally, during the spring of 1927, definite plans were made with the outfitter, Donald Phillips, for such an expedition. Its membership consisted of the Swiss guide, Hans Fuhrer; the Swiss amateur, Jean Weber; Don Hoover, as cook; the French-Cree packer, Adam Joachim; young Kenneth Allen; two Harvard undergraduates, John de Laittre and W. R. Maclaurin, and our mascot, "Nipper." These were organized into a main climbing party, a support party and the pack-train. Fuhrer and the writer constituted the first, or light artillery; they were augmented, at times, into the heavy artillery by the addition of Weber or another member of the outfit. Joachim stayed with the horses, which numbered from three to twenty-five, depending upon their work. When the number of horses necessitated it Allen and others aided Joachim. The support party was made up of those not needed for other duty.

The region visited lies south of Jasper and is split by the Continental Divide. Concerning it, previous expeditions had pieced together a heterogeneous mass of information. But of these outfits only four reached the Clemenceau Icefield—Coleman, the Survey, the Carpé-Hall-Schwab and Hall-Schwab expeditions. To the head-waters of the Athabaska, Chaba, Sunwapta, Saskatchewan, Wood and Bush Rivers, and important tributaries of the Columbia River our journey took us. In airline distances southward from Jasper,

Mt. Columbia, at the headwaters of the Athabaska River, is approximately 65 miles; Mt. Tsar, on the southern reaches of the Clemenceau group, is 55 miles; the junction of Clemenceau Creek and the Wood River, 38 miles; and the Athabaska Pass, 36 miles. These, it is important to remember, are airline miles. How far feasible routes of travel with pack-horses are removed from direct courses!

We planned to leave Jasper June 23rd. However, as our men were all anxious to start and the outfit was ready, we dusted our way from Jasper a day early, ascending the Athabaska Valley. At last we were on our way toward the summer's objectives.

Mt. Confederation ⁹ (c. 10,500 ft.) Incomplete Ascent

On June 25, at 1:15 a.m., Fuhrer and the writer left camp upon the plateau east of the junction of the Athabaska and Chaba Rivers. Burnt timber and steep slopes of soft earth delayed us. After ascending rock slides, broken ledges and a long shale couloir, we reached a point about 9,000 feet high at 7:15. As the northwest arête appeared broken and very long, we descended a rock slide of large blocks to a small glacial valley under the west face of the mountain. The southwest arête seemed most favourable, but it was already noon and the summit of the peak lay hours beyond our reach. We slept a few minutes, and considered continuing the ascent. But shortly afterward we left the little cirque and descended shale slopes into the maze of windfall and forest fire debris on the heights above the Athabaska River. It was a hot day and this was merely a training climb. At four o'clock we were refreshing ourselves in the cool waters of the river. Meanwhile, during the day, the pack-train moved to a camp slightly north of Lynx Creek, to which we rapidly walked along the east bank of the river in the rain, covering the eight miles to camp in three hours. Twenty-five miles in eighteen hours was, then, our first day's work. Next day the weather kept us in camp. The antics of moose, deer and beaver helped us pass the time.

⁹ Names in italics have not been accepted by the Geographic Board of Canada and are, therefore, subject to revision

Mt. Massey (c. 9,600 ft.) First Ascent.

Despite adverse weather conditions (it snowed at 5,000 feet) Fuhrer and the writer left camp at 7:30, June 27th. Joachim and his horses put us across the Athabaska at the foot of the "Big Slide" slightly south of camp. Gaining timberline (1 1/2 hours) we continued steadily upward, veering slightly to the south until we reached the south arête after good climbing on snow-covered rock (c. 8,800 ft., 2 1/2 hours). Here we were besieged temporarily by a severe blizzard, but soon waded on through soft snow, gaining the summit without difficulty (1 1/2 hours). We started immediately for the snowfield east of Dais Mountain, and thence to camp via the Slide (6 hours).

Dais Mt. (10,612 ft.) first ascent

Dais Mt. is the outstanding summit between the Athabaska and Chaba Rivers. The western and northern faces of the mountains are ringed by two thousand foot rock walls; its eastern side is sheer for fifteen hundred feet.

From our camp north of Lynx Creek, Fuhrer and the writer were ferried across the Athabaska River to the "Big Slide." We then worked steadily upward until we gained the meadows at timberline (7,300 ft., 2 hours). After a brief rest we swung around the shoulder of Mt. Massey, reaching, then passing the edges of vegetation; thence, in turn, to rocks and snow. Following the out-crops of morainal detritus of the eastern Dais Glacier, we crossed to a snow col on what, we imagined, was the southeastern arête of Dais Mt. We found, however, that we had still to complete a steep shale traverse of about a mile before we could ascend horizontal bands to the southern Dais Glacier.

The traverse was soon completed, however, and we ascended the "stepped" rocks to snow patches above. Under the final pyramid of the peak we left our rucksacks (9,900 ft., 6 hours). Crossing the schrund easily, we climbed slowly up the almost vertical face, hampered by a heavy blizzard. Working into the western snow couloir, we traversed and crossed westerly (c. 10,300 ft.) gaining by this move the upper part of the southern arête. We then crossed a knife ridge, straddling the cornice, to the summit (2 1/2 hours). By an hour's swift descent we returned to our packs, but we hastened immediately through the blinding storm toward camp, stopping for food and rest at intervals during the night. We regained camp early next morning, after a twenty-five hour journey.

Bad weather continued. On June 27th de Laittre, Maclaurin and Weber, with heavy packs, left for a five day visit to the Chaba Valley for work on the East Chaba Glacier. After a good rest on June 29th, and necessary work in camp, we moved the outfit twelve miles on June 30, and established a camp about a half mile from the tongue of the Columbia Glacier on the east side of the Valley. The number of caribou and deer in the Valley surprised us. A cow and a yearling followed the horses over the gravel flats, and deer after deer appeared at the edge of the brush. On July 1st the support party, returning from the Chaba, made the second ascent of Sundial Peak.

At one o'clock that same morning, July 1st, Fuhrer and the writer ascended the Columbia Glacier to the icefall at its head, searching a route to the Columbia Icefield. We decided, as soon as we studied the icefall, that an attempt to ascend it could only result disastrously. The fall fractured continually, and a steady muffled roar told us of movements in the interior of the ice cascade. We turned our attention, therefore, to the rock cliffs east of the Glacier, which form part of the giant buttresses of the Icefield. In them we discovered a long, winding and broken couloir: this we would try next day. Descending a medial moraine of the glacier toward camp, we stumbled on a

large collection of trilobites, including genus *athabaskia* nov. At 8:25 a.m. we were back in camp, to spend the day preparing supplies and equipment for the morrow's icefield trip.

North Twin (12,085 ft.) Third Ascent: New Route.

Next morning, at 1:30, Fuhrer and the writer commenced a trip that was to keep us on the great icefield for thirty-six hours of continuous climbing. Our immediate objective was the North Twin; after that we didn't know! Our food should maintain us for three days.

In a half hour we reached the tongue of the Glacier, which we ascended, bearing easterly, to the lateral moraines below the second couloir on the left (eastern) side (1 1/4 hours). Into this we headed. The rock was bad, and we zig-zagged up the cliff bands to a shale promontory (c. 7,500 feet, 2 hours). We then re-entered the long couloir south of us, in which, on loose and icy rock, we ascended for two hours and a quarter. This couloir was steep and dangerous, only luck protecting us from falling stones and a large cornice that threatened—split and overhanging it was—during the entire ascent. The rocks were sharp, icy and friable, and a blizzard caught us. At last we ascended by three hundred steep snow steps to the level of the Icefield (9,800 ft, 1 3/4 hours).

It was then nearly 11 a.m. We decided immediately to risk any other place on the descent, but not to go down that couloir. As the storm increased, we headed for the North Twin, but two hours later we were forced to wait in desperation for the clouds to lift. At 3:45 p.m., the col leading to the Twin visible below us, we hurried into the saddle (1 1/4 hours). Leaving our packs, we ascended the deep snow slopes which soaked us thoroughly. We rested a moment on the summit (1 3/4 hours), and then retreated to the col for food and brandy (3/4 hour). The air was raw and we expected a cold night, but, anyway, we started for Mt. Stutfield, gazing as we went at the setting sun bathing the tremendous block of Mt. Alberta in shades of pink. It was 8 o'clock when we cached our equipment in the saddle below Mt. Stutfield.

Mt. Stutfield (11,320 ft.) First Ascent.

With frozen rope, we then ascended the southwestern snow slopes of the mountain and snatched a moment's rest on a shale outcrop¹⁰. At 8:55 p.m. we gained the extreme northern crest, and returned immediately afterward to the sacks (1/4 hour). We then headed toward Mt. Kitchener, singing as we went. We were on the "Roof of the Continent ;" yet our thoughts were far distant.

Mt. Kitchener (11,500 ft.) First ascent.

At 10:55 we stopped for ten minutes, trying to melt some water in a jam tin over "Meta" flames. But during ten minutes the bottom of the can did not even warm! Soon we plunged into some open crevasses and spent an uncomfortable quarter of an hour wallowing in the darkness, trying to avoid an accident. Besides, it was cold, and we were very wet. Finally, at 12:10 a.m., we gained the summit of Kitchener and looked sleepily down into the Sunwapta Valley. Then we moved quickly from the mountain, descending toward the Snow Dome.

Snow Dome (11,340 ft.) Third ascent: first traverse.

Ascending the northwest slopes from the broad snow saddle separating Kitchener and the Dome, we reached the top of the latter at 4:10 a.m. After a brief rest, we continued toward Mt. Columbia, but weather conditions discouraged us. We therefore cut rapidly down secondary ice-

¹⁰ At this point, on the descent, we left a record.

falls into the bay of the névé of the Columbia Glacier (8,500 feet, 1/2 hours). Thence we continued down the right (east) side of the main icefall, keeping in fresh avalanche tracks until a giant, sheer break in the fall confronted us. We re-ascended a few hundred feet and commenced to descend the ice cascade a little west of its centre. Here we forced a passage. We jumped, roped off, slid, fell—anything—but always with towering séracs and seemingly cracks on all sides of us. “Wildly broken,” the Survey reports¹¹. Palmer describes the fall: “It was exceedingly steep and overhung with all kinds of crazy towers ready to fall Its ascent would have been foolhardy to attempt¹². For two hours we went through the fastest, eeriest, most nerve-racking work imaginable. Hans claims that the icefall was “straight up and down” in places!

At 12:30 we reached camp. It was now July 3rd, and we had covered approximately thirty-eight miles in our jaunt on the icefield. The support party, meanwhile, had rejoined the main outfit, and next morning Joachim and Allen, with the horses, moved us all back to Lynx Creek. On July 5th we rode eighteen miles to Fortress Pass, where we located for a short stay.

Mt. Quincy (10,400 ft.) first ascent.

From the Athabaska Valley the mass of Mt. Quincy is striking, with its abrupt glacier-falls and steep rock cliffs. Coleman writes: “The (Chaba) Valley and its creeks and rivers spread out more than three thousand feet below and a grand array of mountains near its head a few miles to the south (from Fortress Mt.), the finest of which we afterward called ‘Mt. Quincy’¹³.” The only feasible routes of ascent appear to be from the Chaba Valley.

Weber, Fuhrer and the writer climbed the peak from camp at Fortress Pass on July 6. Joachim placed us over a mile up the Chaba River on the eastern bank (1/2 hour), and we ascended diagonally toward the cirque immediately south of Mt. Quincy. Heavy timber, thick alder and willow slides, and steep slopes hindered our progress but eventually we gained the little valley, while a half dozen goats watched our movements (c. 8,200 ft., 4 1/2 hours). Continuing across shale bands toward the head of the little valley, we halted a few minutes before ascending the left-hand couloir of the two before us (8,500 ft., 1 1/4 hours). Gaining elevation rapidly, via steep ledges and snow slopes, we chose the right (east) of the two final couloirs leading to the summit arête, which we gained after an interesting climb of no great difficulty (2 1/4 hours). We crossed snow and rocks of the summit crest to the western summit (1/4 hour), from which we obtained beautiful views in all directions.

But, alas! A storm closed in on us as we retraced our steps and crossed to the eastern snow or highest summit (1 hour). Thence we descended via our route of ascent to timberline (1/4 hours), where we dried ourselves and ate heartily by a little fire. At 7:15 we continued the descent, and, after hard work in timber and thicket, gained the Chaba River once more (1 1/4 hours). This we forded as best we could, and continued rapidly toward camp, shifting back and forth from forest to river-flat when ever necessary. Darkness caught us plodding wearily on our way toward camp and rendered the last two miles a veritable nightmare. At 11 o’clock we entered the circle of camp fire-light.

Having placed us in a position to attack Mt. Quincy, Joachim, with three horses, returned to Jasper for necessary supplies. On July 10th he was back at Fortress Pass. Hoover and Allen, in the meantime, explored the western end of Fortress Lake (using Donald Phillips’ canoe), cut out the

11 J. Monroe Thorington, “The Mountains of the Columbia Icefields, 1923,” *Alpine Journal*, No. 227, page 69.

12 Howard Palmer, “The First Ascent of Mt. King Edward,” *Alpine Journal*, No. 231, page 312.

13 A. P. Coleman, “The Canadian Rockies, New and Old Trails,” page 148.

trail around Fortress Lake, and investigated the situation of the Base Camp on Wood River.

On July 7th the climbing party prepared for a week's stay in the Catacombs Creek and Lick Creek country. Next morning at 4 o'clock Fuhrer, de Laittre, Weber, and the writer left Fortress Pass with fifty pound packs, and in nine hours of hard work reached a small lake at the head of Catacombs Creek, under the western cliffs of the Catacombs massif¹⁴. The weather was terrible: it rained steadily until July 15th. Under such conditions, without shelter and with a minimum allowance of food, our stay in the northern valleys was most uncomfortable.

Mt. Catacombs (10,800 ft.) first ascent.

Our bivouac was 1 1/2 miles west of the peak, at an elevation of about 6,700 feet. Starting at 9 a.m., June 10th, Fuhrer, Maclaurin, Weber and the writer gained the western arête via loose couloirs with far more ease than we had expected (9,600 ft., 2 hours). Clouds and snow laid siege to us as we moved steadily upward along the two-mile arête. Rock and snow were, luckily, in excellent condition, and the ridge proved easy going to the summit (2 1/4 hours). After a rapid descent below the cold of the blizzard, we experimented with chimneys and rock walls. Finally, in three and three-quarters hours from the summit, the first of us reached camp. The climb, though not difficult, offered a pleasant variety of rock, ice and snow.

Mt. Lowell (10,380 ft.) First Ascent.

Sending de Laittre and Maclaurin to Fortress Pass for the dual purpose of saving food and having the outfit move to the west end of Fortress Lake, the remaining three of us back-packed down Catacombs Creek valley and, having forded Lick Creek, placed a bivouac on the north side of the valley, under the cliffs of Mt. Lowell. There was no trail and the going was rough and wet, requiring from 5:30 to 9:30 a.m. to cover nine miles. After a short rest, Fuhrer and the writer ascended northerly to a little valley southwest of the peak. We then gained and crossed one of the western ridges of the main south arête and, after crossing a small glacier, found ourselves on still another outpost of the arête (8,500 ft., 2 hours from Camp on Lick Creek). This long shale ridge led us eastward toward the summit: we soon encountered snow-covered scree slopes by which we gained a col on the final summit arête (9,600 ft., 1 1/2 hours). A heavy snow-storm enveloped us; we left our rucksacks, roped, and worked steadily up loose, wet rock, directly above the steep drop toward Lick Creek. The ridge proved pleasant climbing, except for the weather, and we gained the highest point after one hour and a quarter's work. The descent was made via the same route and occupied three hours. Mt. Lowell is a comfortable day's journey and the view of Brussels Peak on a clear day must be startling.

On July 12th, leaving camp at 4 a.m., we attempted to reach the base of the Brussels tower, but, after eight hours hard climbing, we had scarcely covered half the distance.

We were the first to gain access to the massif of Mts. Christie, Brussels and Lowell, which is composed of these three peaks rising from a curiously formed pedestal at an elevation of nine thousand feet above sea level. On every side two thousand foot cliffs encircle the three summits and it is, therefore, very hard to reach even the base of the final tower of Brussels Peak. From Lick Creek we believe it to be impracticable; sheer walls protect it absolutely. Therefore we should prefer to use Fryatt Creek as a means of approach to both Brussels Peak and Mt. Christie. Our observations suggested gaining the saddle between the two at about 9,200 feet. The final twelve

14 Having remained at Fortress Pass to complete some work, Maclaurin joined us on July 9.



Alfred J. Ostheimer

The Northern Ice Fall of Ghost Mountain

From the Timber Line Camp of the Support Party



Alfred J. Ostheimer

The Central Peaks of the Clemenceau Group.

Left to Right - Mt. Duplicate, Mt. Shackleton, Pic Tordu, Mt. Chrome (Above Shoulder of the Tusk) and Tusk Peak

hundred foot tower is sheer, overhanging in places, and washed smooth by water. Only one chimney on the northeast face suggested itself, and we were in doubt as to its depth, width and length.

Late that evening we were back in camp and next morning¹⁵ we back-packed up Lick Creek Valley and over a small col of Lick Peak, thence dropping into the valley of Alnus Creek. We reached the creek itself at 9:30, and spent the night struggling through thick British Columbia forest to camp at the west end of Fortress Lake, to which position the outfit had moved in the two days preceding. After a rest on the 14th, we moved four miles on the 15th to Base Camp on Wood River.

On July 16th we attacked the Clemenceau peaks. Seven of us — Joachim remained to erect a cache — with packs weighing from fifty-five to seventy-five pounds, gained timberline north of Ghost Mountain in the afternoon. Continuing next day up Clemenceau Valley, we placed Ghost Camp in the evening at timberline under the western cliffs of the Ghost.

Ghost Mt. (10,512 ft.) First Ascent.

Leaving camp at 10 a.m., July 13th, Fuhrer and the writer ascended rock slides and snow slopes directly toward the northwest arête until we reached a small saddle below the third northern knob of the arête (c. 9,100 ft., 1/2 hours). Thence we turned southeasterly, traversing south on the face as we ascended gradually up the vertical, broken ledges of the peak. Finally, after exceedingly dangerous work on the exposed western cliffs, we reached the arête (c. 9,500 ft., 1 1/4 hours). Four hundred steps in steep snow were necessary to cross several lesser humps, but, as a hail-storm struck us, we gained the summit rocks (1 hour).

The snow of the arête was soft and dangerous, and unusual caution was exercised on the descent to the 9,500-foot point (1 1/4 hours). Here we elected to descend a narrow, three hundred foot couloir, rock at the top, but snow below, instead of the verticals of the face. And this despite an overhang of about three feet, bulging into the chimney near its upper outlet. We regained the little saddle at 7 p.m. (1/2 hours) and were again in camp at 7:30.

Next morning the light artillery left at four in an attempt to reach Mts, Brouillard and Franklin. Crossing the Ghost-Brouillard ridge by a small col (9:30 a.m.), we were halted on the eastern side of this secondary divide by rock and ice walls. In the meantime the support party moved part of our equipment and supplies to a small lake at timber-line where the High Camp of the expedition was placed. Fuhrer and the writer joined them at 4 p.m. The next two days were spent in bringing up supplies and establishing the High Camp.

Mt. Brouillard (10,020 ft.) First Ascent. First Traverse.

On July 22nd Maclaurin, Fuhrer and the writer left camp at 4:30 a.m. Crossing diagonally toward the Peary Glacier, we worked, via shale chimneys, to the northerly bounding ridge of that Glacier (8,000 ft., 2 hours). Thence we ascended a shale ridge east of us, rapidly gaining its crest (9,700 ft., 1 1/2 hours). But, alas! We were separated from Mt. Brouillard by a broken, sharp ridge, losing about two hundred feet elevation, thoroughly gendarmed and threatening difficult traverses. Therefore we descended toward the glacier until a suitable opening occurred by which we traversed to the wide rock and snow couloir, slightly west of the summit (9,400 ft., 1 hour). This we ascended with difficulty, the steep rock ribs presented scanty foot and hand holds; the soft snow threatened to avalanche. Nevertheless, we ascended directly up this couloir to the western

¹⁵ Maclaurin joined us the night before.



Alfred J. Ostheimer

Ghost Mt. From Mt. Brouillard



Alfred J. Ostheimer

From the Summit of Mt. Bruce Looking Southward.

Mt. Clemenceau is on the Left. Reconnaissance Ridge in the Centre and the Neve of the Cummins Glacier on the Right

summit arête (9,900 ft., 1 3/4 hours), by which the summit was easily reached in fifteen minutes. We traversed the peak, descending via the southern arête to the col immediately south of Mt. Brouillard (9,5000 ft., 3/4 hour.)¹⁶.

Mt. Franklin (10,575 ft.) First Ascent.

Continuing, we descended easterly from the little col in no small hurry and, crossing the Misty Glacier along the watershed, gained the rocks of the peak's south arête (c. 9,300 ft., 1 hour). Thence we ascended without rucksacks via the loose shale of the ridge to the summit (1/4 hours). The descent to our packs lasted a half hour— thanks to a fine glissade of about six hundred feet— and in three-quarters of an hour more we were again in the col north of the-Divide's eastward arc.

Finding the vertical, water-washed western walls of the southern ridge impassable, we descended a snow couloir south of the col, with a quick glissade part way to the Peary Glacier (9,000 ft., 1 hour). We continued to the shale chimneys north of the glacier, returning to camp by our route of ascent (2 1/2 hours).

Next day Fuhrer, Hoover, Maclaurin and the writer, with heavy packs, placed Climbing Camp in a strip of timber of the lateral moraine well up the Clemenceau Glacier.

Apex Mt. (10,625 ft.) Second Ascent.

Apex Mt. was ascended in 1922 by Carpe and Hall from their camp by the Clemenceau glaciers, via the large glacial pass between Mt. Duplicate and Apex Mt. From our Climbing Camp it is best to follow inside the morainal trench until the broken ice on the bend of the Clemenceau Glacier has been passed. This forms a convenient highway to the snowfield below the Apex-Duplicate divide¹⁷.

July 24th, leaving camp at 8:30, Fuhrer, Maclaurin and the writer followed the lateral moraine and gained the Apex-Duplicate saddle (4 hours), thence working toward Mt. Norton for a short distance before turning northward to the southwestern arête of Apex (9,800 ft., 3 hours). Our route lay up the southern side of the arête, via ice and snow avalanche slopes and rotten rock to the summit (2 hours). As we took advantage of our first trip on the Clemenceau Icefield to study our surroundings, the time was slow, but the descent by the same route occupied only two and three-quarters hours.

Mt. Clemenceau (12,001 ft.) Second Ascent.

Mt. Clemenceau, the highest of the group and the fourth in elevation of the range, is a very prominent peak. It was the objective of the Carpe-Hall-Schwab and Hall-Schwab expeditions in 1922 and 1923, and in the latter year it fell to the attack of Hall, Schwab, D. B. Durand and Harris, after many weeks of preparation.

They bivouacked on the southeast side of Reconnaissance Ridge (7,200 ft.), and ascended from there to the lower plateau of the glacier on the southwest face of the peak (3 hours). Schwab

¹⁶ Either route used by the party is feasible, but the wide couloir of our ascent is extremely steep and dangerous. The northern arête of the peak looks entirely possible, and can be reached with pleasant climbing from Ghost Camp or High Camp, by various couloirs, chimneys, and by way of the vertical ledges of the ridge.

¹⁷ It is practically impossible to ascend Apex Mt. from the Apex-Youngusband col because of the steepness of snow and ice, but the Apex-Norton col may be gained easily from the Apex Glacier.

writes:

“The cold at this altitude beginning to be felt, we lingered but a few moments before breaking into untrodden territory, as we mounted the slopes of the upper plateau. Just beyond the edge of this we made a wide detour to the right before being able to cross an enormous crevasse. Then we doubled back toward the southwest subsidiary ridge, the crest of which we elected to make for at once instead of proceeding up to the head of the plateau and forcing the snow direct to the saddle. The passage across a bergschrund occupied quite a while, but thereafter it was a straightforward rise up steep snow to the top of the ridge. “A short traverse then brought us to the saddle—height about 10,900 feet— where this ridge widens into the snow slopes running up to the base of the great north to south summit ice cliff (2 hours).”¹⁸ They continued six hundred feet in soft snow to the “extraordinary ice terrace that led across the base of the four hundred-foot ice cliff between the north and south summits to the west arête . . .” They kept to the south side of the arête and continued, aided by excellent snow conditions, to the summit (2 hours). “Comfortably warm in the sunlight,” they rested. After two hours spent on the summit they returned to their bivouac in three and one-half hours, and continued, reaching their high camp in an hour and a half.

Fuhrer, Maclaurin and the writer, on July 25th, followed this same route, although we climbed the mountain from Climbing Camp. Under extremely unfavourable weather conditions, which delayed us at least two hours, we made the ascent in nine and one-half hours, and the descent in five and a half. The peak is a first-class snow and ice climb, but not of unusual difficulty.

Next day, July 26th, rain, thunder and lightning kept us in camp. Maclaurin returned to High Camp and de Laittre took his place at Climbing Camp. On July 20th, Joachim and Allen left Base Camp with 21 horses for Jasper, and returned to Fortress Pass July 26th, with only 6 horses. Every day from July 16th until August 10th the support party worked hard. The packs carried averaged over fifty pounds apiece. During those twenty-six days 2,800 pounds were back-packed over the route of the support party. Weber alone carried 650 pounds, followed closely by Maclaurin, Hoover and de Laittre. Young Allen, in his few days with the support party, packed over 350 pounds; and even Joachim, for all his years, ended five days' service with a 65-pound pack.

Keen rivalry existed among members of the support party for possession of packing records of the trip from High Camp to Base Camp and return. It is, indeed, an index to the endurance and willingness of each man that the record parties for both journeys contain Joachim, the eldest, and Allen, the youngest member of the expedition. These two, with thirty pounds apiece, made the trip from Base Camp to High Camp in four hours and forty minutes, a distance of ten miles. Together with Weber, they travelled without packs from High Camp to Base Camp in three hours and a half.

A definite route was worked out by members of the support party, as follows: From Base Camp to timberline the trail is well blazed and worn. Above timberline the route is optional over snow and rock slides, but is marked at intervals by cairns of various sizes. The route continues around the western side of “Survey Hill,” down two hundred feet of rock slides, through spruce scrub and rock slides for several miles at the same height, to the Ghost Camp. It then ascends gradually until a small, loose rock chimney is encountered, about fifty feet high. This our men found little difficulty in ascending with packs. It then crosses a small glacial stream and steadily descends southward to timber-line and the High Camp. From the High Camp the support worked out its own route, descending directly to the bare ice below Hall's camp, where they gained flat

18 «Mt. Clemenceau,» H. B. dg V. Schwab, Alpine Journal.

glacier, crossing immediately to the brown moraine nearest the eastern side of the valley. Following this southward, the watercourse scarring the lateral moraine at Climbing Camp is the third one south of the Peary Glacier.

Members of the support party computed the distance between Base Camp and High Camp as sixteen miles.

Mt. Peary (10,220 ft.) First Ascent.

This snowy peak occupies a conspicuous position when seen from the north, closely resembling Mt. Serenity. In fine contrast to the white mantle of the north face are the multicoloured rock cliffs of the southwest walls. These are formed of uptilted sedimentary strata of various colours, rendering its rainbow-like cliffs striking in the sunshine.

De Laittre, Fuhrer, and the writer left camp at ten o'clock, July 27th, crossed the ridge behind camp and descended to the Younghusband Glacier (1/2 hour). After spending considerable time gathering scientific data, we crossed to the lateral moraines west of Mt. Peary and ascended gradual shale slopes to the tributary glacier south of the peak (3 hours). Continuing up the western side of this small cirque, we gained the western arête of Mt. Peary (9,000 ft., 3/4 hour), where we turned easterly up the arête, traversing to the north when 'necessary. Snow and shale ledges offered no difficulties and we soon reached the summit (1 hour, in a slight snow-storm). We descended via the first couloir west of the summit, where we had a few tense moments on the wet, slippery shale. Arriving on the glacier below, we continued to camp by our route of ascent (2 1/2 hours).

Mt. Younghusband (10,490 ft.) First Ascent.

From Climbing Camp, July 28th, Fuhrer and the writer crossed to the Younghusband Glacier, and sped toward the rocks under Mt. Apex (2 hours). Here we roped and ascended short chimneys and a slight icefall, thence continuing upward via steepening snow slopes to the Apex-Younghusband col (c. 9,900 ft., 1 1/4 hours). A small bergschrund was crossed without difficulty. Leaving our rucksacks below a gully on the western arête, we ascended the couloir to the summit ridge (10,300 ft., 1/2 hour). Then we commenced a long traverse along the pointed crest of the upturned strata which was complicated by the more resistant sediments projecting above their weaker neighbors. We rounded on the northern side of some and crossed others, finding the ridge delightful climbing, but a trifle long. The summit was finally reached (1 1/4 hours), and the descent commenced a few minutes later, by the same route. The climb was excellent and proved a pleasant break in our prolonged activity upon "side-hill shale." At the rucksacks we enjoyed a hearty meal (2 hours).¹⁹

Mt. Walcott (10,330 ft.) First Ascent.

Continuing at 3 p.m., after lunch, we ascended the Apex Glacier to a large snow couloir which gave access to the col south of Mt. Walcott (1 hour). Here we rested a few minutes, leaving our rucksacks, before we continued up the southern arête (Continental Divide). The rock and snow of the arête provided steep and exciting work. The summit was reached in three-quarters of an hour and the col regained in another half hour.²⁰

¹⁹ The peak can probably be ascended along the Divide from Mt. Amundsen, but this route is not comparable to the ascent from the Apex-Younghusband col.

²⁰ This appears to be the best route of ascent. The northern ridge of the peak is unfavourable and its eastern face appears to be unclimbable. Reached with comparative ease from the Apex or Wales Glacier.

Mt. Lawrence (10,150 ft.) First Ascent.

Mt. Lawrence is only conspicuous as a distinct knoll in the divide ridge between Mt. Gray and Mt. Walcott. It was ascended by Fuhrer and the writer via its north arête on our way from Mt. Walcott to Mt. Gray. The summit was reached (1/2 hour) from the Walcott-Lawrence col and the mountain was then traversed, our descent following the southern arête to the Lawrence-Gray col (1/2 hour).

Mt. Gray (10,420 ft.) First Ascent.

Continuing from the Lawrence-Gray col (9,700 ft.) we ascended, avoiding crevasses and a hidden, troublesome schrund, over snow and ice slopes, which led us to the shaly summit arête of the peak at 7:30 p.m. (1 hour). We were miles from camp, seven in an airline, and a storm thundered in the north, drawing rapidly upon us. As it approached us, the heavy, black clouds split apart and passed us on either side. But discretion is the better part. We decided, at 8 o'clock, to race toward camp by the Clemenceau Glacier. At 9:30 we crossed the Apex-Younghusband col, whence we slid and picked our way by lantern-light over the icefall and fifty-foot rock cliff to the lower Younghusband Glacier (10:15 p.m.). At 11 o'clock we reached the lateral moraines on the opposite side of the ridge from camp. Loose rock and scrub on a black night held few charms. Hans preferred his blankets, however, and returned to camp in an uncomfortable hour: the writer slept soundly for four hours in a rock crevice; then reached camp by dawn-light in twelve minutes.

Mt. Gray struck us as being of exquisite beauty: once again we call attention to the quality of the eastern ice and snow face. The western side of the peak, however, can be

What remained of July 29th we spent tidying equipment and keeping busy in camp. The Clemenceau Glacier was the subject of some geology on July 30th, and that evening in the rain, Hoover, Maclaurin and de Laittre arrived with mail, trousers, shoes and food. How welcome they were! Hoover returned alone to High Camp.

Mt. Irvine (10,060 ft.) First Ascent.

De Laittre, Maclaurin, Fuhrer and the writer left camp July 31st at 4 a.m. When an hour and a half from camp, we commenced the ascent of the icefall of the Duplicate Glacier. This proved not only dangerous, but the ascent to the Duplicate névé constituted one of the most difficult ice climbs encountered during the summer. We emerged unscathed, *Dei gratia* (1/2 hours) and continued our way toward the Shackleton-Irvine col. Observing a possible route up the loose, shaly cliffs of Mt. Irvine, we turned northerly to them, and after a tiresome, rapid ascent, gained the summit of the peak (3 hours). Then we studied our surroundings.

Tusk Peak (10,960 ft.) First Ascent.

Continuing from the summit of Mt. Irvine, we gained a secondary southwestern ridge of the Tusk (3/4 hour), after a short snow ascent and a pleasant forty-foot chimney. We worked rapidly upward, having left our packs on the ridge, and ascended rock or snow as necessary. The summit was reached without difficulty (1/4 hours), and we discovered with joy that the view was excellent. After enjoying a prolonged rest, we descended to the rucksacks (1/2 hour), and continued to the Tusk-Irvine col, from which we continued via steep, loose couloirs to the glacier below, rounded the Tusk, and sped into camp before dark (6 hours). We thus completely circled Tusk Peak during

the day's climbing. While descending the western couloirs a tremendous boulder crashed upon us, passing between two of the party. Luck was continually with us, it seemed, throughout the summer!

On August 1st Maclaurin returned to High Camp in order to prepare equipment for the Tsar trip. De Laittre, Fuhrer, and the writer left Climbing Camp at noon with fifty pounds apiece and placed a bivouac in scrub timber on the north side of the Bruce Glacier at 7 p.m.

Mt. Farrar (10,680 ft.) First Ascent.

Mt. Farrar is a tremendous block, its east, west and south faces dropping abruptly to the base of the mountain. These three sides we regard as practically unclimbable, except for one possibility: the southeast arête, if gained, can probably be forced.

As it was, Fuhrer and the writer decided to strike for the Farrar-Mallory col. We ascended, August 2nd, to the shale ridge just north of our Bruce Glacier bivouac (c.6,800 ft.). From this ridge we crossed a small glacier west of Mt. Farrar, finding the bare, steep ice extremely slippery in the early morning: steps were required at intervals. A fifteen foot schrund (c. 9,700 ft., 21/4 hours) gave us some trouble, but shortly afterward we gained the col (J4 hour).

Leaving our rucksacks, we ascended the north arête of Mt. Farrar for a few minutes, when we were forced upon the eastern face. Here occurred a ticklish traverse of one hundred and fifty feet between the Bras Croche Glacier's topmost ice-edges and the eastern wall of Mt. Farrar. Continuing along the ridge we enjoyed excellent rock climbing including a slight overhang and two chimneys, about twenty to sixty feet long. We reached the summit swiftly (2 hours) and, after a short rest, descended by the same route to a point about one hundred and fifty feet above the col, where we dropped down the west face in shale gullies to avoid the rock and ice traverse (1 hour). It was noon when we regained the col via the lower snow slopes. An hour later we headed for the summit of Mt. Mallory.

Mt. Mallory (10,710 ft.) First Ascent.

Continuing from the little saddle an hour later, we crossed snow slopes to the southwest arête (1/4 hour). This we ascended with comparative ease in exceedingly rapid time 1/4 hour). We descended, after an hour and a half in the warm sunlight, via the west arête of the peak on our way to Mt. Bruce. Mt. Mallory is an ideal view mountain, and we enjoyed a long, drowsy sojourn snoozing on its rocky crest. It is a distinct peak, jutting from the northern tip of the Farrar massif.

Mt. Bruce (10,190 ft.) First Ascent.

Descending from the summit of Mt. Mallory, we gained the glacier on the east face of the Bruce (2 hours). This we ascended to about 10,000 feet, where we turned south, crossed a small bergschrund, and gained the eastern arête (1 hour), which led us to the summit with easy walking (1/2 hour).

After an hour's rest, we descended the south arête, searching as we went for a possible route to the Bruce Glacier. At last (c. 9,300 ft., 1/2 hour) we dropped in desperation over an extremely dangerous snow wall, the bergschrund of which was open. After a careful, monotonous descent, we gained the glacier below in safety (3/4 hour). An hour and a quarter's fast traveling put us in our bivouac by the Bruce Glacier at 9:30 p.m., after a most successful day.²¹

²¹ The cirque north of the Bruce-Mallory col may present a route to both peaks, but neither it nor the Cummins (west) side has inviting approaches.

At 8:30 next morning the three of us started for Mt. Bras Croche. Keeping well up in scrub timber, our path was blocked by cliffs (1/2 hour) and we were forced to return to our bivouac. We then repacked for an overnight attack on the mountain. Again we started (1:30 p.m.), this time descending the Bruce Glacier. Where timber extends to the glacier edge near the mouth of the Bruce canyon, we climbed through heavy scrub growth and windfall to the alps adjacent to the Bras Croche Glacier (5 hours).

Mt. Bras Croche (10,871 ft.) First Ascent.

At 4 a.m., August 4th, we left bivouac and gained the Bras Croche Glacier, which we crossed without difficulty (1 hour). Thence we ascended shale and snow slopes, as desired, to several easy broken chimneys (10,400 ft., 5 hours). After gaining the highest rocks (10,650 ft., 3/4 hour), we ascended carefully over slopes of the final ice cap of the peak. The summit is at the extreme east end (20 minutes); the view on a clear day is astounding.

The descent, via the same route, was made rapid by snow and fragmentary-shale glissades and we were at the bivouac for tea in three hours. It should be noted that the rope was not used until rock climbing became moderately difficult (c. 10,400 ft.) and that it was discarded when the same point was reached on the descent. The Bruce Glacier, although necessitating some jumps and step cutting, did not require the use of the rope, so that the return from bivouac to bivouac lasted two and one half hours.

On August 4th, Maclaurin and Weber made the second ascent of Ghost Mt., by a new route. They left High Camp at 6:40 a.m., ascending shale slopes to the ridge southeast of camp. This they crossed to its east side and from there the two scrambled up the sharp southwest arête over loose rocks, traversing a prominent gendarme on the left hand (eastern) side, finding a cairn containing the Hall-Durand record. Here they roped. Continuing up the knife arête with considerable difficulty, after a long, hard climb they reached the summit at 1:20 p.m. They left at 2, descending via a chimney in the east face, thence crossing by a difficult traverse to the col between Mt. Ghost and its southern gendarme. They report that the cairn of Messrs. Durand and Hall, on the southwest arête, is at an altitude of about 10,000 feet.

On August 6th Maclaurin and Allen made a second ascent of Mt. Peary. Leaving High Camp at 9:45 a.m., they crossed timber, rock slides and glacier on a level with the camp, then ascended to the western rock arête, whence they gained the summit rocks (1:50 p.m.). Leaving the summit at 2:45, they descended by the same route, reaching camp at 5 p.m.

On August 8th de Laitre and Maclaurin made a first ascent of Mt. Amundsen (10,210 ft.). Leaving High Camp at 7:40 a.m., they gained the Peary Glacier via the loose rock couloir used by the climbing party on July 23rd. They then crossed the crevassed Peary Glacier to the saddle east of Mt. Peary, gaining from here the summit of the corniced Divide Peak east of Peary at 12:30, where they halted for three hours. For this peak they suggest the name Amundsen, which seems appropriate. They crossed along the rocks of the Continental Divide to the inconspicuous knoll on the ridge between Mts. Amundsen and Brouillard, from which they descended to camp by snow, glacier and the loose-rock couloir. They reached camp at 7:40 p.m.

August 5th, in five hours' travelling over the glaciers from Bruce Glacier bivouac, the heavy artillery returned to Climbing Camp. The weather was bad. Hoover, Allen and Weber arrived that evening with supplies and two thousand feet of motion picture film. The first two, with de Laitre, immediately returned to High Camp.

Feeling beautifully, and with necessary supplies on hand, we were now ready to attack the Tsar.



Alberta-British Columbia Survey

From Mt. Bras Croche. Left to Right - Mts. Farrar, Mallory and Bruce



Alberta-British Columbia Survey

Mt. Columbia from the North, the Second Highest of the Range.

Mt. Norton (10,190 ft.) First Ascent.

Fuhrer, Weber and the writer left Climbing Camp with fifty pounds apiece at 6:30 a.m., August 6th, for the valley of Tsar Creek. An hour and a quarter put us on the icefield beyond the morainal trench above Climbing Camp, and in four hours more we had passed close to the southwest corner, of Mt. Apex, crossed the large bergschrund and cached our sacks near the Apex-Norton col. Thence we ascended in a southerly direction along the north ridge of Mt. Norton to its beautifully corniced summit (1 hour). On the descent we glissaded gradually off the peak and regained our sacks in the col without difficulty (3/4 hour).²²

Mt. Eden (10,525 ft.) First Ascent.

We dropped soon afterward to the Apex Glacier and walked to the western base of Mt. Eden (2 hours from the Apex-Norton col). There we cached our sacks and hurried by a broad snow couloir to the col north of Mt. Eden (3/4 hour). Continuing along the northern arête of the peak, which was composed of fragmentary shale, pitched at a steep angle, we reached the summit at 6:30 p.m. (1 1/2 hours). The descent to packsacks occupied one hour and a quarter, and, after a flying two and one-half hours' icefield journey, we gained the ridge dividing Tsar and Wales Creeks. It was then 10:30 p.m. During the day we had covered twenty miles, over glaciers and mountains, with heavy packs.

At 9:30 next day, August 7th, we were again awake, in broiling sunlight. Moving slowly over the timbered ridge, we placed a bivouac in scrub timber by the Tsar Glacier five hours later. We gazed up at our peak, for the Tsar offered the chief mountaineering objective of the present expedition. Its inaccessibility, natural difficulties, and the organization necessary to reach and ascend it, had presented quite a problem. We thought this over as we surveyed the massif above us.

After supper, as we lay on our blankets, Han's glance fastened on the tip of a morainal ridge sixty yards west of camp. A head appeared; then the huge shoulders of a grizzly. Slowly a yearling cub followed its mother on the moraine. She stopped and debated charging us. But daylight waned and the wind was bad for her, so, circling us, she disappeared in the meadows above.

Luck was always with us, it seemed. Had that grizzly decided upon a different course of action, the course a grizzly rarely fails to take when trapped, our summer might have ended suddenly. All we had for protection were three axes: there was no tree in sight!

Mt. Tsar²³ (11,232 ft.) First Ascent.

We started at 5 a.m., August 8th, equipped with two days' food, gasoline, stove and one thousand feet of moving picture film, beside other necessities. From our little bivouac we ascended the Tsar Glacier, generally following its medial moraine, to the glacial pass between Mt. Somervell and the Tsar (2 1/4 hours). We then turned southwesterly, aiming for the western rock ridge, which we gained rapidly (8,300 feet, 1 hour). After a stay of an hour, we followed this ridge, which, we were surprised to learn, was separated from the main peak by a small glacier-filled valley.

²² The peak may also be climbed via its western or southern slopes, but the eastern wall is sheer.

²³ With regard to the name, Mr. A. O. Wheeler writes: ". . . When I saw it, so strikingly dominating its surroundings in isolated majesty, I named it the 'Czar: but, later, when recording it, the spelling with 'Ts' seemed more appropriate." See "Conquering the Tsar," by the writer, in "The Sportsman," October, 1927

Continuing for a half hour, we cached our equipment at about 8,500 feet²⁴. Thence we descended a loose shale couloir to the secondary glacier (1/4 hour), where we roped and began ascending the main ice face of the Tsar. Winding carefully up the lower, then the upper ice cliffs, Hans was forced to cut about five hundred steps before we gained a broad snow saddle (c. 10,200 ft., 2 hours). An avalanche crashed below us as we moved rapidly upward. Continuing westerly, we ascended to the steep northwest arête which we followed, via rock and ice to the summit of the mountain (1 3/4 hours).

We were greatly impressed by the absolute isolation of the Tsar and by the airy drops east, south and west of us. But a storm gathered in the western skies, so we hurried from the peak. After a brief halt for lunch on the arête, we descended as rapidly as we could, unroping below the shale couloir as crashes of thunder loosened another avalanche from the ice walls (2 1/2 hours). We regained our cache (1/2 hour) and, after a short rest, descended the rock ridge until a four hundred-foot snow wall suggested a short cut to the ice pass below. One by one we went over the top, flying to the ice saddle below. Thence to camp (c.6,600 ft., 1 3/4 hours).²⁵

Next day we back-packed to Climbing Camp via Tsar, Apex and Clemenceau Glaciers in eight hours. Then rested, for good weather had ended, and we thought over our last few weeks' work. We had ascended eighteen major peaks in seventeen days, and thoroughly covered our scientific work. Our journeys to and fro in the Clemenceau area had taken us over 225 miles: nearly every day had been a long one.

Hoover was now with us at Climbing Camp. The others rapidly evacuated the Clemenceau Area: on August 12th the main camp of the expedition was one-quarter mile from the tongue of the East Chaba Glacier, where the heavy artillery was scheduled to be August 15th.

On August 15th, de Laittre, Maclaurin and Weber made the first ascent of Wales Peak. From camp near the tongue of the East Chaba Glacier, they ascended the glacier and ice-fall, crossing west of Chaba Peak to a nice-looking mountain one and a quarter miles southwest of Chaba Peak and about 10,200 feet high. They record the finding of massive boulders containing small fossil shells, none of which were portable. The descent was made, after a short wait for the expected arrival of the climbing party, who were packing across from the Clemenceau via the main icefall. This fall is extremely dangerous and it was by great luck that only one accident, in three trips over it, occurred to members of the expedition.

We three were held in Climbing Camp August 10th, 11th, 12th and 13th, but on the last of these days we spent eight hours working on or near the tongue of the Clemenceau Glacier.

Mt. Livingstone (10,310 ft.) First Ascent.

Mt. Livingstone appears as the southwesterly of the two summits of the Stanley massif. Its eastern face is sheer, even overhanging in places, but routes to its summit arêtes (north, west, and south) can be worked out from the Stanley Glacier side or from the Rhodes-Livingstone col. It was ascended by Hoover, Fuhrer and the writer, August 14th, from Climbing Camp, via Tusk, Cummins and Stanley Glaciers. After gaining a point below the icefall descending between Pic Tordu and Mt. Stanley (5 1/2 hours), we headed toward the broad col at the head of the Stanley Glacier. Before reaching it we roped and turned eastward, ascending steep rock bands by means of watercourses to a shale bench (c. 8,850 ft., 1 hour). Thence we turned up the west arête—steep and

24 The curious Shackleton Glacier lay far below us.

25 The only other route observed to the summit of the Tsar is by the northern arête, but this will be considerably longer than by our way, and will not furnish as interesting a climb.



A.J. Ostheimer

Mt. Shackleton from the Flank of Tusk Peak



Inter-provincial Boundary Survey

Icefall of East Chaba Glacier

Left to right - Dais Mt., Sundial Peak and Chaba Peak. Mt. Eden behind to the right.

broken—which gave us the most distasteful, tortuous work of the summer. Finally we gained the summit of Mt. Livingstone (4 hours) and, traversing the mountain, descended along the northern arête toward Mt. Stanley.

The ridge was jagged and brittle, with precipitous drops on either side. After careful consideration, we decided that two days would probably be required to get across to our objectives, Pic Tordu and Mt. Shackleton, and we felt no desire to go cold and hungry for that length of time. So we returned across the face of the peak toward the west arête, which was regained after difficult and dangerous climbing (4 1/2 hours). Several times during the traverse a serious accident confronted us. Descending by our route of the morning, we crossed the Stanley Glacier below the icefall from the Stanley-Livingstone col and bivouacked in a scrub timber patch (c. 7,500 ft., 3 hours). Next morning we returned to Climbing Camp in four hours. The ascent of Mt. Livingstone was our most unpleasant and unprofitable mountaineering journey; it gave, however, gratifying scientific results.

For the remainder of August 15th, we were in camp, packing, sorting and cleaning, making ready to leave next morning for the Chaba Valley.

Mt. Noel (10,350 ft.) First Ascent.

The three of us left Climbing Camp—for the last time, at 6 a.m., August 16th, with heavy packs, for the icefield journey to the Chaba. We ascended to the Apex-Younghusband col (5 1/2 hours), crossed the Apex Glacier to the southerly col between Mts. Eden and Gray (10,050 ft., 2 1/2 hours), and cached our belongings under the southern slope of Mt. Noel (1/4 hour). Thence we very rapidly ascended a wide snow couloir to the western arête (1/4 hour), continuing to the summit without difficulty (1/4 hour). The return to our packs lasted a thrilling eight minutes. Hoover thought we were crazy!²⁶

At the close of this hard day's work, we descended the East Chaba icefall "blind." True, this three thousand-foot ice cascade had probably been skirted by Jean Habel's party, and it had been climbed by the support party on their way to and from Wales Peak. But, though recognizing the difficulty and extreme danger of any crossing of this icefall, it was an entirely foolhardy proposition to descend such a broken mass with absolutely no knowledge of it. Nevertheless this was done in a thrilling five hours' work, chiefly due to an underestimation of the character of the icefall. The icemanship, courage and steadiness of Fuhrer, and the plucky, determined nerve of little Hoover, were beyond praise.

At eleven o'clock that evening we were again in camp, after travelling about twenty-five miles. This was the first time we had all been together since July 16.

We spent several days compiling the season's data and resting, and were back in Jasper August 23rd—the same horses that worked all summer for the expedition; the same eight men that started. Not a beast, or a man, was much the worse for the summer's work. Of the nine weeks that we had been on the trail, thirty-one days had been clear while thirty-two were distinctly bad.

The work of the support party gives evidence to the unending labour and devotion to duty of these men. It was a joy to see how the task of bringing our supplies and the necessary equipment into the Clemenceau Icefield was accomplished. And it was only because of these men that the expedition was able to perform its labours.

During the sixty-three days of the expedition, for which time Fuhrer and the writer

26 Thorington adds: "Maybe he was right."

SPECIAL NOTE FOR THE CAJ DIGITAL EDITION

An oversized fold-out map of the Clemenceau Glacier and the Columbia, Chaba and Whirlpool areas was included in the hardcopy version of the 1926-27 Canadian Alpine Journal.

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

continually were together, and making no allowances for weather or work in camp, we amassed a total mileage of 645 miles; 550 hours we were away from camps; we ascended, during this time, thirty peaks, of which twenty-five had never before been climbed. This means an average per day of ten and one-quarter miles, eight and three-quarter hours from camp back to camp, and a mountain climbed every two days. Also, for the whole period, we back-packed a total of sixteen hundred pounds.

There were eight happy and contented men at dinner in Jasper the evening of our return. The expedition, and our work for the time being, had come to an end. But we eight must part—some going west, some east, some south, and some north—perhaps never to meet again. Every man had done his share; we had worked well together throughout the season. Those nine weeks are now a fond memory.

Note :—

1. *The best discussions of the Clemenceau area are: "The Clemenceau Group," Allen Carpe, Canadian Alpine Journal, Volume XIII, pages 79-91; "The First Ascent of Mt. Clemenceau," Henry S. Hall, Jr., Appalachia, Volume XV, No. 4, Pages 413-426; "Mount Clemenceau," Henry B. de V-Schwab, Canadian Alpine Journal, Volume XIV., Pages 18-33. Also "Canadian Rockies, New and Old Trails," by A. P. Coleman; Report of the Inter-Provincial Boundary Survey, Part II.*

2. *Attention is called to the temporary names on our map: they are shown in Italics. Other articles which have appeared upon this trip are: "Dais Mt.," Bulletin of the Philadelphia Geographical Society, July, 1928; "Two New Cambrian Trilobites," by Prof. Percy E. Raymond, in the American Journal of Science, April, 1928, and, "From Jasper to the Tsar" in Harvard Mountaineering, 1928.*

Ascents In The Canadian Rockies, 1926

By J.W.A. Hickson

Since the subject matter of the following notes has been already ably dealt with by Mr. Howard Palmer in *Appalachia*, Volume 20, 4, December, 1926, and covered much more briefly by the writer in the *Alpine Journal*, Volume 38, November, 1926, they have been composed simply to serve as a record for the *Journal of the Alpine Club of Canada*.

Mt. Fryatt (11,026 ft.), the second highest peak in the Jasper National Park, lying between the Athabaska River and its main tributary, the Whirlpool, and about 23 miles south from Jasper in direct line, had attracted the attention of Mr. Palmer as far back as 1920; and claimed the joint attention of him and the writer in 1924 on their way up the Athabaska to the Columbia Glacier. It looked very interesting from the east, and is in such proximity to the river above the Falls that we had thought of trying it from this side. Instead, however, on our return to Jasper we made a hurried trip in September up the Whirlpool, but were unable to achieve anything except catch a fleeting glimpse of the peak on a wet and stormy day from the shoulder of a mountain overlooking the entrance to Divergence Creek Valley. The view of the lower part of the route was not encouraging, for the valley was thickly covered with jack pine, and it was fairly certain that a trail would have to be cut most of the way to the lower of the two lakes below Mt. Fryatt, which would be the work of some days. Other peaks in the neighbourhood, notably those afterwards recognized as Lapensee and Belanger, of which passing views were obtained, suggested, however, that the labour involved would be worth while.

In the following season, Mt. Fryatt being still on our minds, we sent out a party of men to explore the approaches from the Athabaska side. Their report was so unfavourable as to the

possibility of taking in horses and supplies that we abandoned all idea of this route, reverted to the one via Divergence Creek, and sent out a second party, which after several days of hard work, cut and blazed a trail as far as the first lake (5,900 ft.). Unfortunately for us the weather was miserable and all hope of profiting from the labours of this prospecting party had to be deferred until the following year.

In 1926 Palmer and the writer met in Jasper on July 4th and set out the same afternoon with the Swiss guide, Hans Fuhrer, up the Whirlpool, Palmer having reached the rendezvous several days earlier and completed the arrangements for the packtrain supplied by Otto Brothers. On proceeding up the Whirlpool, one loses sight of Mt. Fryatt, shut out as it is by a long rampart of mountains, until one is well up Divergence Creek, the north branch of which flows from the lakes below the Mountain.

The weather was very pleasant; warm and clear; but brought with it one disadvantage, for it caused a tremendous rise of all mountain streams and rendered the Whirlpool, at what had been regarded as our fording place, impassable on horseback. Practically a day was lost in constructing a large raft and ferrying across men, saddles, packs and all supplies, the horses swimming as best they could and all happily reaching the eastern side without injury. This was perhaps the most critical part of the whole undertaking, for the ascent of Mt. Fryatt can hardly be designated as either dangerous or difficult (except for some 200 feet of the summit cliffs).

About 7:30 p.m. on the fourth day, after an arduous march for our men and the pack train, we reached a camping ground on heathery slopes near the second and higher lake at some 6,600 feet. The ground over which we had travelled was very rough, the ascent had been considerable and much skill and experience were required to bring the horses safely around the steep and stony banks of the lower lake and up the unmade trail to the higher one. On the way one horse rolled with its pack over a cliff, and had it not been held by a tree would have been lost. There were no indications of previous human visitors. We remained at this spot from which a good view of the western ridge of Mt. Fryatt was obtainable, for a week, and during this time, notwithstanding occasional heavy showers, the weather might be termed fair. At night it was very cool. During the day mosquitoes and bulldog flies were terribly active, even interfering with the enjoyment of one's meals.

No time was lost in accustoming ourselves to climbing in rarer atmospheres and in obtaining views of the upper formation of our peak. The preliminary surveys were not very extensive. Fear of a change of weather, of which we had had too many disagreeable experiences in these parts of the Canadian Rockies, made us impatient of delay; and so without being in at all good condition, we launched our attack on Mt. Fryatt on July 10th, starting from camp at daylight, shortly before 4 o'clock. As it turned out we chose an unnecessarily circuitous route of approach to our objective which we had decided to attempt from its south arête. Following the valley beyond the upper lake we ascended some easy snow to the col of this ridge on which at a little after 7 o'clock we stopped to have a look at the scenery. This point was about 8,800 feet.. Continuing up the arête we reached some crags not much under 10,000 feet, cut off as we then discovered from the main part of the mountain by a deep notch. At first it was uncertain whether it could be crossed; but after a steep descent, and some careful manoeuvring, we surmounted the difficulty and gained the main massif. A short climb brought us up to a shale-covered shoulder, which afforded excellent views of the rocky southwest side of the peak over which we planned to force our way up. Here at 9,700 feet we rested, refreshed ourselves and left all superfluous articles of food and clothing in one of the rucksacks. The weather was still fine and warm.

We resumed the work of ascent at 11:30 a.m. and found it easy. In an hour and a half we had traversed upwards about 1,000 feet over rock bands covered in places with fresh snow. A chimney about 25 feet in height above which was a large snow patch was then encountered. Melting snow in the chimney was dislodging small stones for which a sharp lookout had to be kept. Fuhrer cut a few steps in the ice while the rest of the party tried to dodge the stones and the waterfall. Arrived at the top of this chimney about 1:30 p.m. we walked briskly along the brow of the cliffs towards the western arête, until we reached a point at which the summit cliffs were not more than 250 feet in vertical height. Further east they are from 600 to 700 feet high and tremendously precipitous.

We had now reached the part of the peak which we thought might give trouble as we had not yet seen a way up through the steep rock cap. But luckily there was disclosed a series of vertical cracks, which constituted the chief difficulty of the climb and at the same time afforded means of access to the summit ridge. They were dripping with water and in two places were guarded by overhanging rocks, most pronouncedly at the top of the final pitch where a bulging stone roofed the chimney and forced the climbers to perform a fly movement over the edge. Here the support of the rope was not to be despised. The hand holds were generally good and sufficient; and after one and a half hours of exercise in these cracks the party came out above the main westerly arête, whence it was simple going to the summit, reached at 3:50 p.m., twelve hours from camp.

During the last half hour the sky had become darkened and a storm was now coming down the Valley of the Whirlpool. In ten minutes after reaching the top we got the fringe of it in the form of a slight shower and strong electrical discharges. Everything sizzled; rocks, ice axes and our arms if we extended them. We hesitated to descend from our exposed situation lest in doing so we might serve as lightning conductors. The ice axes were laid in a patch of snow and the climbers lay face downwards on the rocks. In some fifteen minutes the storm passed, a stone man was built and a record placed therein noting this first ascent by the Presidents of the American and Canadian Alpine Clubs. A few observations were made and the summit was left at the late hour of 4:40 p.m. From the top we had seen at least six lakes, several of them of fair size, which are not marked on any map.

The cracks required about an hour and thereafter the route was varied so as to avoid the snow-filled chimney. By descending more directly we traversed well under it. The change of route entailed more time so that it was not until after 9 p.m. that we regained the place, on the south ridge where some of our stuff had been left. Food had now to be partaken of. Darkness came on earlier than expected owing to heavy clouds, and we were prevented seeing our way back by a shorter route than that of the ascent, for we had decided not to retrace the long ridge to the col. Flashes of lightning occasionally lit up the scenery. Rain appeared imminent, but it seemed safer to remain where we were. Various apparently protected nooks were tried as sleeping places, all of which proved unsatisfactory owing to nasty wind, for the temperature was not low. We had no thick clothing; luckily it did not rain. The five and a half hours of almost sleepless inactivity did not seem very long. At 4 o'clock we were off down the shaly precipice. "The litter of shale on Mt. Fryatt is," as Mr. Palmer observes, "simply appalling. It crunches under foot like frozen grass." Making good speed to a small glacier we crossed it, and came down over a belt of rock to the main glacier from which we retraced to camp our route of the previous day. We got in shortly before 8 o'clock, having been absent almost exactly twenty-eight hours. Had we taken from the outset the line of our return, and had the amateurs been in better condition, camp would probably have been reached the evening before.

Two days later men and outfit came down to the lower lake, and made their way thence up



Topographical Survey, Department of the Interior, Ottawa
Mt. Fryatt in Centre, Mts. Lapensie and Belanger on the right from the west.



H. Palmer

Final Peaks Of Mt. Fryatt As Seen From The Craggs In The Approach, Showing Route And Upper Chimney (X)

the valley of the other branch of Divergence Creek to the southwest and established a camp in a lovely Alpine meadow at 7,000 feet, where however we were more exposed to wind. The pinnacled rock peak Lapensée (10,190 ft.) named for an early victim of the waters of the Athabaska, was close at hand to the east. Its ascent was accomplished on July 14th. A special feature of this peak is on its south side what looks, at a distance, like a huge tower or enormous gendarme; but what is really a cluster of four towers, two of which are specially prominent and connected with a rock ridge between which a very steep glacier descends on the west side.

Camp was left at 6 o'clock, an hour later than had been planned. Fuhrer led us to the foot of a great couloir which began at some 1,700 feet above camp on the southeast side and up this we climbed somewhat blindly so far as our knowledge of what lay ahead was involved. It was both arduous and dangerous work for there was much disintegrated rock; and higher up in it, on both sides, were many stones which seemed ready to fall with a puff of wind. Sometimes the walls of the couloir had to be clung to; sometimes steps had to be cut in steep ice, but it brought us out just where we wished on the col at some 9,400 feet, between the towers and the main peak. We rested here for half an hour and had some food. Owing to smoke hardly any features of the landscape were definite.

The rucksacks were deposited under a ledge and at 11:30 we turned to the right and climbed over a steep, though short, wall at the top of which we found ourselves at the bottom of another huge couloir which, as we soon perceived, split the mountain up to the summit ridge. It runs up between the two summits. It constituted the very route which we had picked out with our glasses from the camp. Its ascent provided more exacting work than the lower one, and the hardest climbing of the day. Near the top we were forced to leave the couloir and climb up on the right through steep and narrow chimneys covered with much rotten rock, and then make a couple of trying traverses. The ascent of this seven hundred feet (in vertical height) consumed fully two hours. The west summit was reached at 1:45 p.m. and the party immediately crossed the narrow ridge to the east one because it was not certain which was the higher. From here Fryatt, some 900 feet loftier, looked very imposing. Leaving the summit at 2:50 p.m. we retraced our route with a slight variation near the top of the upper couloir; reached our luncheon place on the col at 5:15 and after half an hour's stop went carefully down the lower couloir and unroped at 8:15 p.m. after a more trying climb than that of Fryatt. Camp was reached just in time to get shelter from the rain which was the forerunner of a bad break in the weather.

Heavy rain and strong wind kept up during the night, and next day it snowed down to 7,500 feet. We remained under cover most of the day. Temperature at 8 p.m. 35°F. The 16th of July was given up to minor excursions. Palmer visited the Glacier to the west leading over the pass to Alnus Creek, while Fuhrer and the writer went up to the snowy pass southeast of the camp. The first had already been explored by our chief trail man McDougall with a view to reaching Mt. Scott, and had been pronounced to be impracticable for horses. The following day was to be devoted to climbing, but, some of the party being lazy, nothing was accomplished until the 18th, when three climbers set out at 7 a.m. for the pass to the south-east, the top of which was reached at 8:40 o'clock. It was fine and moderately warm but again smoky to the west.

After a long walk over boulders, scree and shale, we reached the south ridge of a virgin peak, at the head of Lick Creek Valley, and designated by the Interprovincial Boundary Commission as Peak A²⁷, which we had selected for a relaxation climb. It afforded some pleasant rock work. The

27 The writer was not aware of this designation until recently.

rope was not used either on the way up or down. The summit (about 9,800 ft.) was reached at 1:40 p.m. and turned out to be an excellent viewpoint owing to the isolation of this peak. A delightful hour was spent on it, and after the same amount of time in going down by the ridge, the latter was left for the main couloir on the south-west side which led to a charming lakelet at 5:10 p.m. Here a stop of 45 minutes was made both to enjoy the scenery and further refreshment, with which we had all day been plentifully supplied. Camp was reached again at 7:30. A heavy storm broke over us during the night and next day six inches of snow surrounded the tents.

The same afternoon we were glad to greet McDougall and another of our men on their return from Jasper with fresh supplies of food. They had been able to cross the Whirlpool on a light raft on the way in, and on the way back, to ford it without difficulty. Next morning, as Fuhrer was soon required at the Canadian Alpine Club Camp in Tonquin Valley, we packed up and started on our return to Jasper which was reached after an uneventful trip around noon on July 22nd.

Almost immediately we made arrangements with Otto Brothers to start on the 25th with McDougall, the same cook, and Jean Weber in place of Fuhrer, and proceed to Tonquin Valley by way of the Astoria River, a westerly affluent of the Athabaska. One of our objectives en route was to ascend the virgin Throne Mountain (10,144 feet) directly southwest of Mt. Edith Cavell, which itself is situated in the south angle between the Astoria and Whirlpool Rivers. After motoring 18 miles along the Cavell Road the climbers joined the diminished pack train and descended some 800 feet by a steep trail to the river bed. Four hours going up the river, the trail in many places being very bad, brought us to a camping ground at 5,600 feet under Mt. Oldhorn and opposite Throne, although rather far from the base of that peak and on the opposite side of the river.

Uncertain weather delayed our start next morning so that camp was not left until 5:45 o'clock. The stream was crossed on horses and then a swamp had to be traversed to the wood which partly encircles the base of the peak. The going through timber with heavy windfalls was rough and warm work until we emerged on a scree slope leading to a meadow on the west side of the mountain about 1,200 feet above camp.

On this side the mountain is so seamed by couloirs that it is not easy to pick out the or a route. We chanced a broad one up which it was easy to proceed until we reached smooth rocks banding it across. Above these the couloir narrows, the rocks become more difficult and we put on the rope. Palmer and the writer left their ice axes, and a little higher up Weber put on his rope-shoes and left his axe. The couloir becoming still narrower and steeper forced us to the rocks on the right, and soon we were on a series of exposed faces, some 300 feet in height up which only one of the party could move at a time. One of them greatly regretted his thoughtlessness in leaving rubber shoes at the camp. On the way down the full hundred feet of rope was played out several times for each of the amateurs, while the guide descended by the doubled rope. Above this there were some sharp noses and fine corners to get over and around and a narrow hole to squeeze through, and then all was easy going over broken ledges and loosely piled rocks. The summit, reached at 2:45 p.m., where it was too cool to be pleasant, and whence the views were blurred by the prevailing smoke.

The descent for the first part was necessarily slow. Water was not reached until nearly 8 p.m. a little below the beginning of the big couloir. A snack of food was hastily taken and a rapid descent made over talus slopes to the valley bottom on the Blackhorn side, whence the party swung round rightwards to resume the morning route. Night came on us in the trees, and when with difficulty we reached the river about 11 p.m. we were too far off to attract the men's attention, and the swamp was too uncertain to take further chances with in the dark. So another night in the open was spent,

this time with a feeble fire. Another objective of the trip, a virgin peak, had to be abandoned both on account of weather, and desire to reach the A. C. C. Camp without further delay.

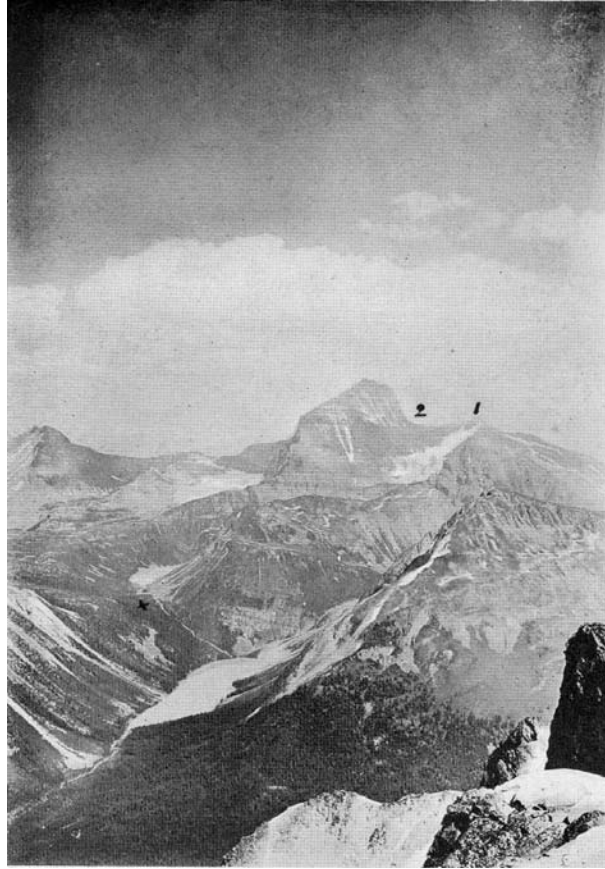
The most difficult bit of rock climbing which the writer experienced during this season, 1926, or for many seasons in the Canadian Rockies was afforded four weeks later by the ascent of the unclimbed east face of the south-east tower of Castle Mountain (approximately 9,750 feet), situated almost half way between Banff and Lake Louise. Edward Feuz and the writer had had this in mind for several years, but unfavourable weather conditions again and again blocked any attempt. Eventually we left Lake Louise Hotel by motor at 7:30 on a fine August morning and proceeded 19 miles along the road towards Banff. Walking began at an altitude of 4,700 feet and brisk pace was kept up through the lower woods and during a long traverse around the base of the walls of the peak to the east. In about three hours we reached steep rock ledges scalable by small cracks and exposed traverses and landed at 11:45 a.m. on a gravelly shoulder approximately 8,550 feet, immediately below the east face of the tower which from here looks very forbidding. Indeed it seemed uncertain whether it was feasible. A careful scrutiny of it with our glasses led us to the correct supposition that the lower part would present the main difficulties of the climb.

A rock ridge several hundred feet in height and jutting towards us offered the route of attack. On reaching it we discarded our nailed boots for rope and rubber-soled shoes, left our ice axes, one of the rucksacks and put on the rope. Immediately we faced a steep chimney blocked at the top by an overhanging rock, a formation characteristic of this tower. The handholds were good and we worked up here with legs stretched against the walls of the chimney. After several steep ledges we emerged on a level platform, whence we saw that this ridge was separated from the main wall of the tower by a deep vertical split, just too wide to jump. We had to descend some 40 feet and work around on the ridge to the main wall. There was no way of avoiding this detour on our return. This brought us to a very stiff though a short piece of the ascent, a large pocket out of which we had to climb up a perpendicular rock face and at the same time perform a very exposed traverse to the left; a slanting ascent requiring the assistance of the rope. This was an unusually disagreeable place to descend; we managed it by the doubled rope.

Traversing further to the left along a narrow horizontal ridge we reached another ticklish place, less dangerous on the ascent than on the return; a rock wall about 40 feet in height well nigh perpendicular with just a sufficiency of small hand and foot holds. On the descent we used a rappel here, fortunately finding a little above the top of the wall, what we found at other similar places on this peak, an excellent belaying place for the rope. Moving from here upwards to the right another steep chimney was encountered with overhang and at this place also a rappel was used on the way down.

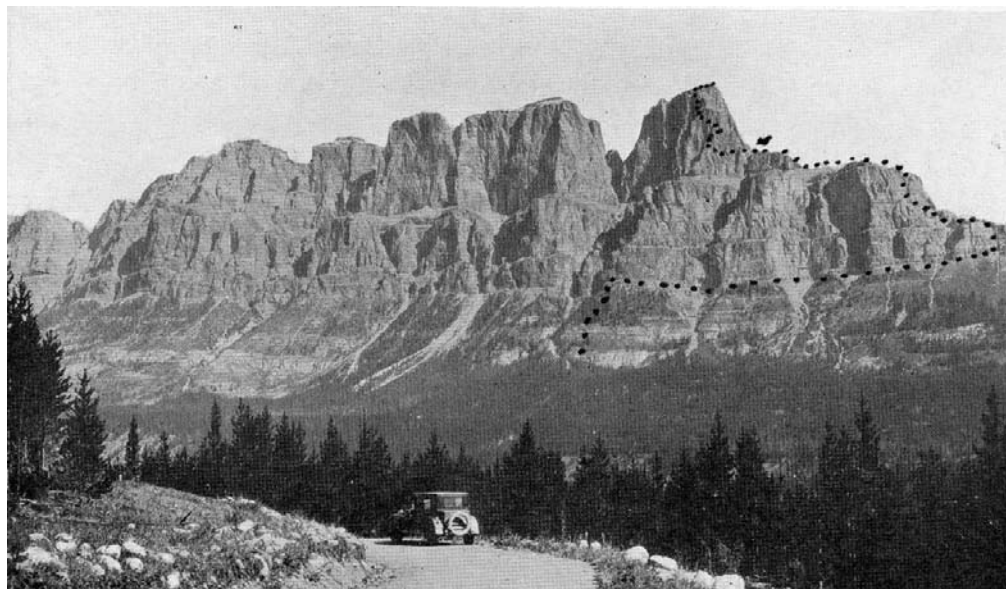
These were, I consider, the hardest bits of the climb on the 900 foot face none of which is easy, and on which the traverses, although short, are not without risk. At 2 p.m. a well-marked groove in the face was reached more than half way up, where a rest of ten minutes was taken. Hereafter the climbing was again very steep; and almost immediately below the summit, which was attained at 3 p.m., another short chimney with overhang presented itself. Our barometer which had been set at Lake Louise showed feet which is probably too high. The views from the flat shaly top were very clear; Mt. Assiniboine was plainly visible.

A drink of coffee and something more stimulating was indulged in; and in half an hour the descent was begun. There was no time for loafing. What required two and a half hours to ascend consumed three hours in going down. At 6:30 we reached the boots, ice axes and rucksacks, and moved across the gravelly shoulder and hastily enjoyed some solid refreshment. The rope was



Interprovincial Boundary Survey

Mt. Fryatt from the southwest, showing the two lakes and base camp (x) and south arete (1-2). Point 1 approximately 10,000 feet.



Castle Mountain from the main road. Route of ascent of S.E. tower indicated and notch marked by x

retained until we had descended the lower rock wall just above the grass at 7:35 p.m. There were still 3000 feet to descend, mostly through wood; and it was already twilight. The air was very close and lack of water made itself felt very unpleasantly. The tooting of the motor horn was heard long before we reached the road, for in the dark we went a bit astray. Feuz at last lit his lantern for my benefit and we picked up the machine at 9:10 o'clock.

Although the rock work on this peak is shorter and therefore less fatiguing than that on Mt. Louis, and the traverses are not so dangerous; yet the difficult parts are quite equal to those of the latter or to any other crags in the Canadian Rockies known to the writer; and its descent is technically more difficult. The long narrow crack near the summit of Mt. Louis is, in the knowledge of the writer, unique in the Rockies, and it is arduous to ascend; but it is doubtful that it can be termed dangerous, and provided that damage to one's clothing is not a matter of concern it is less of a problem to descend. Rope or rubber-soled shoes lessen immensely both the risks and difficulty of such climbs as those of Mt. Louis and the tower of Castle Mountain, neither of which can be placed in the class of the more difficult Chamonix Aiguilles.

Turret Mountain

By A.W. Drinnan

On the afternoon of August 4th, 1926, after the Annual Meeting, Mr. Wheeler sounded a call to arms reminiscent of the Great Call to Arms twelve years earlier, by saying that he would like to have Turret or Redoubt captured at that Camp and asked if Grassi and I had given the matter consideration. We both felt the honour keenly and had been turning the matter over in our minds but had not determined which to tackle.

The thought of trying Redoubt did not entirely appeal to us as our reconnaissance of that mountain had given us the impression that we could make it by crossing the Drawbridge Pass and traversing high up on the shoulders of Drawbridge and Redoubt to a well marked couloir on the west face where we had traced an apparently safe route to the Summit. Patches of snow indicated fairly wide ledges and as far as we could see there were no serious difficulties. The distance from Camp and the rock slides to be crossed were not attractive as we had had some experience of these on our visit to Geikie Meadows by way of the Drawbridge Pass.

Turret on the other hand was apparently a more difficult problem. Having successfully carried out Val Fynn's suggested route on the South Southeast face of Geikie and being intrigued by his verdict that Turret was the "King-Pin" of the group, we were naturally anxious to try conclusions with it. All our observations had not resulted in our locating a feasible route but we thought that the most likely line was by way of the couloir on the south west face which descends from the notch between the Summit Mass and the Great Tower to the west of it. There were some obvious difficulties as the couloir appeared overhung in places but we thought it might be possible to turn these by reaching a point high up on the west side above the highest overhang and then traversing into the couloir. The prospect looked attractive and as this route lay within striking distance of Geikie Meadows Camp we determined to start the following afternoon by way of the Barbican Pass.

It was a fine afternoon and we thoroughly enjoyed the walk down Tonquin Creek. Near the Crossing we looked back and were delighted with the magnificent appearance of Mounts Geikie,



W.S. Park

Turret Mountain From the Southwest Showing Approximate Route

Turret and Bastion. We looked on Geikie and Bastion with a friendly eye, having had the happiness, of resting on their summits some days before and we hoped that Turret too would prove kind.

Ascending the easy slope we soon reached the Summit of the Pass and were enthralled by the glorious panorama of the Fraser Group, Mount Simon majestically breaking through its great glaciers and snowfields with Icefall Lake at its base.

The gentle descent to Geikie Meadows was soon made and we were glad to join the main party at the evening meal. Dr. Sharpe and Hans Fuhrer had a redoubtable party with them intent on reaching the summit of Geikie on the morrow by way of the route which we took great pleasure in attributing to the genius of Val Fynn and which we had had no small pleasure in proving some days before. We spent a happy evening round the camp fire discussing our hopes for the next day, but in view of the early start all retired "de bonne heure."

Just before daylight on Friday, August 6th, Grassi and I started out over the now familiar Geikie Rock Slide, and were soon passing the Inkwells to commence our climb on the slide which comes down from Turret. In the semi darkness we were thrilled by the spectral appearance of the mountains across the Geikie Valley and the stupendous wall of Geikie to our left. At about five a.m., as we ascended the rock slide, the mists were lifting and we were hopeful that a fine day would result, much different from our cold foggy day on Geikie. Elevation was rapidly made on the large rocks and soon we were at the top of the slide, making an ascending westerly traverse on the lower of the two wide ledges so noticeable from the Inkwell, until we were just west of the Great Buttress which forms the secondary Summit Mass. We then turned and attacked some steep rock and a narrow chimney where the climbing was good but the holds very fine until we were directly behind a prominent tower which has a sphinx-like appearance. Here a notch behind the highest point of the Tower enabled us to descend a few feet and traverse on a very narrow ledge to a broad debris strewn one which led round a buttress into our much desired couloir and well above the overhang. We now felt very hopeful of reaching the summit and thought that a second breakfast would make it certain. After a good substantial repast including some tinned tomatoes, dear to the hearts of mountaineers, and leaving one of the rucksacks, we ascended almost to the top of the couloir then took a line to the right. We were now nearing the summit and were on the west face of the final tower. The rocks were large and apparently piled loosely together but covered with verglas and held together somewhat by ice and snow. The pitch was quite steep and very great care had to be taken as many of the rocks moved when weight was put on them. After some very anxious moments this obstacle was passed and at 9:30 a.m., we stepped out on to the summit. (10,100 feet.)

A yodel in the direction of Camp brought a ready response and we were glad our friends could witness our success. A cairn was erected on the highest point and a smaller one on the Camp side but we learned later that both could be observed from Camp. The smoke of the fire from the Camp kitchen reminded us that we had carried some food to the summit and so a third breakfast or early lunch was enjoyed while we basked in the sunshine. It was a bright, warm morning much in contrast to our cold day on Geikie and we stayed on the summit for an hour.

The scene to the South and Southwest was particularly wonderful, many beautiful peaks being in view, none of which I could, however, identify, much to my regret. We looked too for Robson but it was not in sight.

At 10:30 the return was made by the same route. We had very considerable difficulty in descending the steep, loose rock face, and on future occasions a safer route must be found—possibly nearer to the West arête. No difficulty below this was encountered and at one p.m. we

were at the Inkwell.

Turret makes a nice rock climb and the only difficulty we found was with the loose rocks near the summit which may be circumvented on a future occasion. The narrow ledge behind the sphinx-like rock has to be negotiated carefully. It will be well to lower the rucksacks and ice axes from a point just higher up to the leader who will have made the traverse unburdened.

Black Horn

By Beverley Jefferson

Those who have pitched camps beside Moat Lake in the Tonquin Valley, where the 1926 encampment of the Alpine Club of Canada was held, will remember four majestic peaks, Clitheroe, Oldhorn, Throne, and Blackhorn, that stretch at equal distances from North to South across the Eastern sky, each one rising solitary and separate in sharp contrast to the contiguous line of the Rampart peaks, before whose scarred and serrated wall they stand like watchful sentinels. The southern-most peak of the four, Blackhorn, is a great, black tooth with vertically chiselled walls. It had been an interesting subject of contemplation and discussion for us, first from the summit of Portal Peak, later from the crumbling cliffs of Oldhorn and the mosquito infested depths of the Astoria River Valley, and finally from far across the Tonquin Valley at the Moat Lake Camp of the Alpine Club. It was there that it was decided to attempt an ascent.

En route to the camp our party, consisting of Robert Cleveland, Bradley Gilman and myself, had come up the Portal Creek trail from Jasper, crossed over a pass just east of Maccarib into a valley below the northeast face of Oldhorn, thence around Oldhorn by the Astoria River to the Tonquin Valley and Moat Lake where we joined the Alpine Club encampment. En route an ascent was made of the hitherto unclimbed Portal peak, a mountain which because of comparatively low altitude and relative distance from groups of higher peaks had hitherto been neglected by climbers. The route chosen for the ascent afforded a few hours of pleasant but far from spectacular rock work. A day or so later Oldhorn was attempted by the southeast ridge with no success. This peak is covered with loose and rotten shale. At the Alpine camp it was our good fortune to climb Bastion on the rope of Mr. Grassi, that adroit and masterful rock-climber who made the first ascent of Turret.

On the day of departure for Blackhorn the weather was bright and clear, and as Don Phillips had sent the packs ahead to the outlying Alpine Club Camp at Surprise Point, we took our time and loitered along in that direction, following the right side of the Amethyst Lakes, beneath the cliffs of Redoubt and Dungeon Peaks. Once an avalanche was heard, but proximity to Turret for a week past had removed any concern or even interest in the mere sound of an avalanche. A party of climbers were discovered through binoculars high up on the summit ridge of Clitheroe. The bathing possibilities of the Amethyst lakes were tested and found to be considerably lacking. Finally, late in the afternoon the lower end of Amethyst lakes was reached, and the night was spent at the Alpine Club camp at Surprise Point.

After a day had been spent in blazing a crude trail from the Astoria river below Surprise Point up over a low shoulder of Thunderbolt Peak into Campus Valley, we set out with fifty-pound packs, and upon reaching Campus Valley below the Southwest face of Black Horn, camp was pitched beside a mountain brook.

Because the perspective of Blackhorn was poor from the valley directly beneath, and no feasible approach was apparent, the next day the unnamed peak to the South of Thunderbolt, on the same ridge and about 500 feet higher, was climbed in order to reach a position of advantage for a binocular study of Blackhorn. The ascent was uninteresting, excepting possibly two pitches, and though there was considerable snow just below the summit, it was not necessary to cut more than a dozen or two steps to gain the top, on which no cairn was found. This peak has since been referred to as "Campus" Peak, because of its commanding position at the head of the valley of that name. From its summit a careful study of the Southwest face of Black-horn was quite possible, and a route of ascent for the next day was planned. The ridges as possible routes were discarded, due to what appeared to be vertical stretches upon them. On the Southwest face a chimney was discovered leading up to a prominent buttress above the Campus pass saddle at the upper end of the valley. From the right edge of the buttress a dark shadow-like streak, which was correctly attributed to the existence of a chimney of singular depth and narrowness as we found out the next day, seemed to run far up the peak. From the top of this supposed chimney, assuming it could be reached, it seemed possible to reach a ledge which ran up to a point on the Northwest ridge, to which the summit was accessible. This route was followed exactly in gaining the summit the next day.

We left camp at four the next morning with perfect weather. After a short scree climb the base rock of the mountain was reached and found to be of an excellent granite, and the party roped up. The first chimney yielded the most enjoyable rock-work of the summer. Two pitches were particularly outstanding, the first from a ledge up a broad steep forty-foot wall on the outside of the peak before the chimney deepened, and the second a knee and back problem in a narrow crack about twelve feet in height up to a small platform above which hung an interesting chokestone. We got up to the top of the chimney and climbed on to the buttress. From this point the face of the mountain went up hundreds of feet above us sheer and smooth, except where the shadow-like chimney seen through the glasses from "Campus" peak made a deep and narrow, vertical cut. This second chimney, as interesting as the first, rose sharply and was flanked by towering and unbroken walls, but there were good holds in the firm rock of the trough. The ledge leading to the west ridge was won by a simple traverse, and after following it a short way, we found a broad couloir, by which the summit ridge was made.

Through a crack in the ridge the Astoria River could be seen far below, and behind it Old Horn, raising its crumbling head; while to the Northwest appeared the Amethyst lakes, the Ramparts, and, through glasses, even the Alpine Club camp at Moat Lake. Throne was too far around to the East, but Portal Peak, an old friend, was in full view.

Since the ridge was found to be impracticable, the Southwest face of the mountain was attacked again, and the summit rewarded our efforts in a short time. The cold, clear weather afforded magnificent views in all directions, so that we lingered for some time on top; and when the lakes, peaks, valleys, and glaciers on all sides had been scanned, photographs taken, and a cairn built, a good two hours had passed, so a descent to the base camp at Campus valley was made. The next afternoon we arrived at the Moat Lake camp of the Alpine Club of Canada.

We left Jasper National Park soon after at the end of the Alpine Club's encampment. Though we turned our steps away from the Tonquin Valley with the prospect of a trip to the Robson country, ascents of Rainier and Shasta, and visits to the Yosemite and the Grand Canyon before us, still it was with a feeling of sadness and deep regret that we looked back from the trail around

Tonquin Hill and beheld for the last time the massive ice-carven wall of the Rampart peaks and the four lone majestic sentinels—Clitheroe, Oldhorn, Throne and Blackhorn.

Attempt On Mt. Redoubt—1926

By T.B. Moffat

From the very first day in camp Mt. Redoubt appealed strongly to me. It is one of those outstanding peaks which challenge the climber because of its rugged majesty. The more I saw of it the stronger the appeal became, so that, when I was approached to become one of a party to make an attempt upon it I was glad to answer in the affirmative.

Our party consisted of Messrs. Henry S. Hall, Jr., J. E. Johnson, myself, and Hans Fuhrer as guide. As we realized that it would be a long and strenuous climb, we made an early start, leaving camp between 3:00 and 4:00 a.m. We crossed to the South side of Moat Lake and kept along the base of Drawbridge Ridge. We lost some time here as we had to cross a considerable rock slide which could have been avoided by keeping low down in the valley. However, we reached the base of the great ice-couloir (which comes down between Drawbridge Ridge and Redoubt) at an early hour.

After a short rest we started the ascent upon the ice. The ice in this great couloir extends from the very top of the saddle almost to the base of Redoubt, and looked to us to be a feasible way to make a speedy ascent to the saddle. But after we had crossed a large crevasse, about 400 feet up, we found the slope increasing to a dangerous pitch, which necessitated the utmost care, as a mis-step might have precipitated the whole party down the slope. As we got higher up, the slope of the ice became even more acute. It was rather unpleasant to see a stone start down this ice slope, and to notice its increasing momentum until it disappeared in a crevasse or over a rise in the ice.

After a strenuous climb of about 1000 feet, some times on the ice and again upon the rock, Hans decided that our progress was too slow, so we tried the rock work on the North face. Traversing around a great buttress of rock, we reached a part which looked well broken with numerous shelves of rock, and therefore promising far more rapid ascent, but after ascending for a couple of hundred feet we found the rock too much broken for safe climbing. In some places it looked as though built up by human hands and ready to fall with a gentle push.

Hans felt that this was more dangerous than the ice, so back we went to the couloir again. After a bite to eat we again took to the ice, keeping as close to the rock face on the Redoubt side as we could. Sometimes we were forced right out on to the ice on account of a kind of bergschrund between the ice and the rock wall. Then other times we were forced to climb over projecting buttresses of rock, while again we would find favorable rock for climbing for a hundred feet or so. Gradually we worked our way up but it was very slow and tiresome going as we were always at a tension being continuously in danger.

Most of the way we could only climb one at a time. As we reached the saddle it became very cold, a strong wind came howling over it carrying particles of snow.

Near the top we saw a most interesting rock mass. It resembled a Mahommedan at prayer; and looked as if some cubist artist had built up a huge model on the ridge of Drawbridge. There he was turban and all, kneeling at his devotions, his head touching the rock before him.

At last the saddle was reached at 4:00 p.m.; when we got a decidedly cold reception, as the



Mt. Redoubt

wind was sweeping through from the Geikie Valley side in regular winter blasts. We went down the slope a short distance to avoid the cold winds and to reconnoitre.

We found that the rock immediately above the saddle was too steep to negotiate, and the only feasible route that presented itself to us was on the southern slopes a considerable distance away from where we were.

After scanning the mountain carefully with glasses, we decided that it would be impossible to complete the climb that day, so we reluctantly turned our steps campward.

We followed along the Southern slopes of Drawbridge Ridge, keeping high up so as not to lose our elevation. The going was hard in the extreme. Never in my experience have I crossed such execrable rock slides. There was scarcely any fine scree, but all rocks varying in size from a foot ball to a small house. When finally we reached the Drawbridge Pass we had maintained our elevation so well that we found ourselves several hundred feet above it, which necessitated some nice "climbing" in our descent.

When about 50 feet above the pass we found ourselves on a perpendicular cliff with no means of descent. Rather than retrace our steps and find a way down further back, Hans decided to belay us down, and for the first time in my experience I had the pleasure (?) of being let down like a bag of flour. Hans came down beautifully after we had all reached safety.

From the pass down to Camp the route is well known to all. Camp was reached about 8:00 p.m. after we had been out practically 17 hours. We were decidedly tired and hungry, but felt that under the circumstances we had done as well as any party could have done.

Sizing up Redoubt from the South we decided that it could be made from that side, if a party were to bivouac well up on the Southern slopes, and thus get an early start. There is a couloir on this side which leads up to the base of the final cliff. This route looks quite feasible and no doubt one could find climbable chimneys in the final cliffs as they looked broken from where we viewed them.

Whoever makes the climb will find it most interesting, but we would advise any party making an attempt to avoid the ice couloir we went up, as it is too dangerous and consumes too much time.

Mt. Bennington

By N. W. Spadavecchia

The afternoon of Sunday, August 1st, Messrs. Henry Hall, of Boston, J. E. Johnson, of Scarsdale, N.Y., and the writer started from the main camp at Moat Lake to the camp at Surprise Point with the intention of starting from there early Monday morning for an attempt at the Easterly "Fraser" Peak, or Mt. Bennington. However, we failed to awaken in the morning (due to late attendance at the camp-fire the previous evening), and had to give up the attempt for that day, which, of course, turned out to be perfect, and was spent in scrambling up Surprise Point! That evening, Messrs. Geddes, Thomson, Hoag, and Bibby expressed a desire to have a try at it, so we agreed to start out Tuesday with two ropes. Tuesday morning we left Surprise Point camp at 5:40, skirted the base of Surprise Point, descended to Penstock Creek, and followed that to the tongue of the Fraser Glacier. At this time it started to snow, and we all agreed that there would be no chance of making the ascent that day, as it was impossible to see anything more than about



Mt. Bennington From Surprise Point

twenty-five feet distant. Hall, Johnson, and the writer decided to go on slowly, in the hope that there might be enough improvement in the weather for us to catch glimpses of the mountain and thus formulate some plan for the future. We proceeded along the left side of the glacier, mounting gradually, then struck a rather steeper part, after about a mile, which led to another stretch which had about the same slope as the part preceding the more abrupt rise. Above the rise we roped up, and shortly struck several concealed crevasses. We continued more slowly, Hall leading mostly by map and compass, and arrived at the rounded crest of rock that occurs on the South arête of the Westerly Peak, or McDonell, where we waited for the weather to clear up. It was our intention to climb McDonell, then descend to the connecting ridge between it and Bennington, and then ascend Bennington, as Mr. Geddes had said he thought that the most feasible route.

At this time a rather curious phenomenon occurred. At different times we all had caught glimpses of what looked like a ridge with several peaks projecting from a glacier at a distance of about one-quarter to one-half mile. Suddenly the wind drove away the fog and snow and we all literally gasped, for the apparently distant ridge was nothing but the south arête of McDonell, at a distance of only about 50 or 60 feet! Arrived at the top, we examined the east side of Mt. McDonell and the connecting ridge for a route to Mt. Bennington, but there seemed to be none that appeared feasible. The drop down to the ridge was rather precipitous and devoid of holds, the ridge was heavily snow-corniced, apparently very sharp, and at one point there was a huge block of snow, precariously fastened, which barred further progress in that direction. We could not see very clearly as there was considerable fog and some snow, so we decided to wait for the weather to clear. After waiting two hours, during which time the fog got worse, we left after putting our names in the Williams Shaving Stick container which we found in the cairn on top of Mt. McDonell. In the container we found the names of Messrs. Palmer, Carpé, and Chapman, who had made the first ascent of that peak, and some other names which escape me at present. There was also a short piece of standard size film for a motion picture machine. The emulsion and gelatin had spoiled and had a rather "high" odor. When we reached the glacier, we stopped and I looked over the South face of Mt. Bennington and the ridge connecting it with Mt. McDonell, with my glasses. I pointed out a prospective route and asked the opinion of Hall and Johnson. They both agreed that it might work out, though the general feeling of all was that we would not get a chance to try it again, since the next day, Wednesday, was the last opportunity we would have as we intended to leave camp Thursday. We then returned to camp, arriving about seven p.m., and found the others eager to know if we had made our peak.

After dinner Hoag and Bibby said that they had received permission from the Climbing Committee to try one of the unclimbed peaks of the Ramparts, provided either Hall, Johnson or I would accompany them in order to make three on the rope. Hall declined as he had to be present at the meeting the next day, and Johnson did not care to make two long trips in succession without a rest between. I decided to go, but on looking over the proposed route with a glass discerned several apparent obstacles and I suggested that we try Mt. Bennington instead, which I knew more about, and which I felt could be climbed by the south side, along the route I had looked at that day. After some discussion it was decided to try it.

Wednesday morning, August 4th, Messrs Rupert B. H. Bibby, of Garston, Liverpool, England; John H. Hoag, of Haverford, Pa., and I left Surprise Point camp at 4:40, proceeded by the same route as I had taken with Hall and Johnson the preceding day, until we reached the place, just after the sharp rise in the glacier, where we had roped up the day before, and again roped up, with myself leading, Hoag next and Bibby last. Since it was clear, we could see that the sharp rise

became an icefall towards the right, and that the route to the left, while not leading directly toward Mt. Bennington, was the better route. From this point we headed more or less directly for the Eastern edge of the ice slope on Mt. McDonell, as we wanted to avoid the ice and still start as far to the left as possible since the ledges run diagonally upward from West to East, and our objective was the col between McDonell and Bennington. We had not gone very far before we found that there were a great many hidden crevasses, and that they ran very nearly in the direction we were travelling. We arrived at the base of the rocks at about 10:45, having had to cut a few steps and to cross the small bergschrund, just before the rocks.

We had intended going up a trench in the rock ledges, but the snow indicated that it acted as a chute for stones, which was confirmed by some coming down just then and flying over our heads as we crouched in the lee of some large blocks. We then worked around to the right and made for a ledge (about over the top of the "D" in "McDonell" on sheet No. 28 of the A-BC Boundary Survey) along which we proceeded. After a while we found that we were getting too far to the East, and went straight up and across several ledges until we reached another that was suitable and followed that for a considerable distance until we found that we were again getting too far to the East. This process was repeated, so that we followed rather a zig-zag course, alternately following, and climbing straight up and back to the left, along ledges, until we reached a point about two-thirds of the way up to the col, where the most feasible route lay up two snow patches, the first about thirty and the second about forty feet across, inclined at about fifty-five to sixty degrees with the horizontal. While I was cutting a step at the top of the upper of the two patches, Hoag, in changing his footing while waiting, slipped and slid, but I managed to hold with my axe, as also did Bibby who had taken a hitch around his axe.

A short time later we rested a few minutes, and, on starting, reversed the rope, Bibby leading, and reached the col at the low point. At this time it began to hail and the weather did not look very good. We went East along the ridge, up a moderately steep broken rock slope, then up a moderately difficult, more or less vertical section of about twenty-five or thirty feet, broken up into large blocks by a number of cracks, and then up a final broken rock slope to the summit, which we reached at 2:15 p.m. The clouds closed down, and since we heard what we thought to be thunder, I suggested that we build a cairn, leave a record, and then get off the summit before having our lunch. We built the cairn, inserted one of my tin Kodak film containers with a record of the climb, and then, as it had cleared up somewhat, we had lunch, took some pictures, and started down about 3:15, Bibby leading, Hoag next and I last. We varied the route slightly to avoid the snow patches, since the sun had been on them at intervals, and reached the glacier again at 6:10. On the way down Hoag slipped in traversing a ledge due to the finely broken stone with which the ledge was covered, but was held by the rope.

In general, the south side of the ridge between McDonell and Bennington is made up of a series of ledges and more or less vertical rises. The ledges run diagonally upward, from West to East at an angle of about fifteen to twenty degrees with the horizontal. The rock is very loose and broken, and the ledges afford poor hand and foot-hold as the slope of the strata is downward from north to south, and there is always a tendency to slip off the flat surfaces, which do not afford a very good hold for nails as the surface is rather smooth and covered with finely broken stone for a good part. The rises between ledges afford easy to moderately difficult climbing.

About two-thirds of the way back along the upper stretch of the Fraser Glacier we discovered a very fine echo, exercised our lungs a bit, and then went on, reaching Surprise Point camp about 9:00 p.m., feeling quite satisfied with the day's sport.

Climbing Fujiyama, The Sacred Mountain

By Cora Johnstone Best

It was not the season to climb Fuji! Of course one could not climb Fuji out of season,—it simply wasn't done! "No can do," seemed to be the answer.

We collected all the information we could—it wasn't much,—two new wool blankets, a good supply of food, and with a young fellow from the hotel as interpreter we left Tokio on our pilgrimage to the sacred mountain.

On the way to Gotemba a cute little train ran up a cute little track, tooting a cute little whistle. There were streams and waterfalls, bridges and tunnels, upland meadows and mountains—almost like one sees from Calgary to Lake Louise only on a small scale. All in miniature, but lovely beyond words.

Where ever there was space enough to make an embankment, to hold water, one saw the rice paddies. At Gotemba an auto was waiting for us and we were carried away through one continuous village,—through miles of rice paddies and children, past strange water-wheels that were turning in tiny streams and moving the fans that cleaned the rice that was being threshed in the wayside sheds.

We reached Okemaya Inn at Subashiri. The Japanese inn people received us in the customary polite manner of such places: the servants knelt in a row on the floor and their foreheads were on the floor. The master and mistress received us with bows that were lower than the hip line. Then we were served cocoa and Japanese sweets.

We were to take horses up to the third station. There are ten "stations" on Mt. Fuji. These stations are really rest houses that house up to two hundred people—if they are packed in close enough. They are always full in season which is July 10th to Sept. 10th.

The gorikis (which means guide but they were really just coolies) came to pack our food and blankets for us. They were very small men and I couldn't make out how we were to manage with just two. But they assured us that they could carry much more than we had so we let it go at that. But I later learned to realize the almost super-human strength of these men.

The horsemen came, three of them, each with his horse. We three, Mrs. Shippam, Sato, our interpreter, and I were to ride and the men were to lead the horses. (Wouldn't a Canadian wrangler hold his sides at the sight of two Trail Riders of the Canadian Rockies sitting on top of a fat little farm horse, same being led by an equally fat little brown man!)

We followed a country road for some miles. Then through patches of small trees where even the songs of the birds were strange, and wild azaleas bloomed in great patches of scarlet, purple and white. And the ferns! Never have I seen their like anywhere except in the Selkirks.

We finally made the horsemen understand that we could manage the horses by ourselves. We rode silently! Oh no! It wasn't impossible for me. I will admit it was a hardship, but it was quite necessary for our progress. No matter how I longed to call the attention of my pal to a lovely patch of violets or a particularly beautiful bank of azaleas I must not speak, for whenever I did everyone stopped dead still and waited to see if something was going to happen.

The undergrowth got smaller and smaller and finally we wended our way past a shrine and Station One, out on to the great cinder heap devoid of any vegetation. The gorikis had fallen far behind with their heavy packs.

About the second station I asked Sato, "How far is it to the top of Fuji?" He consulted the



A.F. Shippam

“... The cold was intensified by a whipping wind”



A.F. Shippam

“I later learned to know the strength of these little men.”

horsemen. "1000 meters," he answered, promptly, for a Japanese, which is usually about half an hour after you ask the question.

For a while I contented myself figuring out the distance in feet. Finally I exclaimed triumphantly, "It is only three thousand, three hundred and thirty and one-third feet to the top of Fuji." Promptly the line stopped

We reached the third station and I asked Sato the altitude. After consulting his book, my book and the horsemen three he said it was seven thousand feet!

I did some rapid calculations: "We are not holding our own," I remarked to Mrs. Shippam. "How high is Fuji, anyway," we asked Sato. Without winking an eyelash he answered instantly, "One million feet high."

The horsemen pocketed their pay, took their fat little horses and departed. After some time the grinning faces of the two little gorikis appeared from behind a cinder heap, and we made our way to the fifth station.

In the middle of the "station" the ground was bare, while all around it was a platform about nine inches high. A fire was built on the ground. This is one of the usual ways of keeping warm and of cooking in the simpler homes in Japan. Many of the inns use this method. The smoke, some of it, escaped through the door and cracks in the building. We swallowed the rest! The gorikis melted some snow and after I was sure it had boiled I made some tomato soup for Mrs. Shippam and myself. We managed a fair supper. Out of doors was a fairy world—a truly up-side-down world—it looked just that way. The clouds were gloriously beautiful.

Back into the hut again. We rolled up in our one blanket each—others had been promised us but they failed to materialize when the packs were opened—laid our slickers on the boards and tried to rest. (You will all know the answer.) At our heads I espied two small doors that closed like gates. Opening them I discovered a small shrine with a grinning Buddha sitting there in serene silence. At his feet were two small wine vases that were supposed to be filled with saki as an offering to the mountain God. I had no saki so I filled the vases with cherry brandy. (I was playing safe you see.) We dozed a bit as we tried to ease our aching bones. After a while the fire died down and I got so cold I got up. (There was snow in the hut a few feet from us.)

There should be a moon—there was a moon! And the stars hung down so low I could almost pick them. For a half hour I stood there alone almost breathless with the wonder of it all. It was almost as light as day in that strange silver light one gets from the moon. Fuji towered above me, not looking its million feet high, and far below in the valley I could see the sparkling wee lights of a village. Yet further off was a misty sheet of silver—a lake. Behind Fuji the sky was deep, deep blue—the bluest kind of blue.

I have often pondered over and marvelled at Japanese art but I never realized where they got it until that morning. Below us and to the right was a sea of tossing, billowy clouds that reflected long shafts of light which came and went, flashing to the zenith and then dying down, something like our own northern lights. We expected to see a bright sun appear on the rim of the world. The banners of crimson and gold came and went and then, almost before we knew what was happening—"Cherie, look, look!"

A rim of red crept slowly up. Further and further it came until a huge red ball, the reddest I have even seen, held us spellbound. The sea of clouds below us was now an undulating, billowing, frothy sea of silver-white silk on which played vari-coloured lights that changed every instant. To the extreme right there appeared through a silver haze, coal black peaks etched on flat pale blue, this all floating in a sea of changing light.

We turned and looked at Fuji. A gold crown rested on the snow-white head and for a moment I almost forgot that I was a “westerner,” and found myself about to drop to my knees and touch my head to the ground. But I remembered that I wasn’t one of those so-called heathen we send our pennies to, and kept my feet.

It was worth the trip half around the world; it was worth the hard planks for a night; it was even worth going all day with nothing hot to eat or drink.

All the way up from the first station I had seen literally thousands of discarded wariji (straw sandals) worn out and left by the faithful who had climbed Fuji, and I pondered over the foot-sore and weary, dusty and thirsty little brown people, young and old, who had toiled up the trail in a temperature of about one hundred and seventy-degrees, “Japanese height,”—you see I am getting the habit—to the shrines on top.

Everyone had assured me that we could get tea at the stations neglecting to add, “in season.” So we had no tea.

The gorikis and Sato ate their unpalatable looking rice cakes and toasted dry fish with great gusto, gulping down great cups of hot water. My pal and I ate cold, hard-boiled eggs and stoically munched hard rolls. At six-thirty we left the fifth station and all our extras, taking the cameras, some cheese, crackers and oranges.

The snow was very, very deep, not even the roofs of the huts showing. It was also getting quite steep so we put on crampons—the kind they use here. The snow was in fine condition for us but the gorikis, unused to it, took to the little out-croppings of rock whenever they could find any. With their grass sandals, even with crampons, it was hard. Soon their cloth shoes, with rubber bottoms, worn under the grass sandals, were soaked.

A strong wind was coming around the ridge to the right and it was getting colder all the time. We reached the eighth station and sat on a corner of the roof of one of the higher buildings, all numb with cold. Mrs. Shippam’s hands were so cold she could hardly use them and my feet felt like lumps of ice. The gorikis said they could go no further, that their feet were freezing. But they pointed to the top, at least a good hour away.

I pointed up the very steep slope and told Sato I was going straight up. “No, no; no can do!” he cried in evident alarm. I said, “You bet I can do, ask goriki.” After much conversation Sato gave me the goriki’s answer. “Goriki say maybe can do.” It was said in rather dubious tones.

Up a steeper snowfield I have seldom gone. My head began to ache in short arm jabs that raised my hair. Going from sea level to almost thirteen thousand feet in so short a time was beginning to have its effect on all of us. I went ahead kicking steps, Mrs. Shippam rope-ended—without the rope—and we kept Sato between us for he was having a much harder time than we were, and we didn’t want to have him slip off down the slope unintentionally. Our rests were very frequent at the last.

The rim of the crater was finally reached. We followed around the top, looked down into the hole that was so deep that even the heavy snows of the winters could not fill it. We saw steam, or gas, coming out from a fissure.

The view from the top was magnificent beyond description. Great ocean liners looking like tiny toy ships rose and fell on the silver swells, and with our strong binoculars we could make out the cunning matchbox houses in the villages below us. From every point around the rim of the crater we got an ever changing panoramic view of sublime distances and the cloud effects over land and sea. We took pictures, looked to our hearts’ content, then dropped over the rim at the place where we had come up, using our old steps for a bit; then, as we hit the less steep slope

we glissaded clear to the eighth station. Sato was on his back most of the time, grinning and half scared. The gorikis had found a place where they could pry off a bit of board and had made a wee fire. The poor fellows had suffered from the cold, without doubt, and it dawned on me that they hadn't cared, whether I went "straight up" or sidewise so long as I left them to hole in.

Down the snowfields to the fifth station we scooted in a hurry. One of the gorikis slipped and went for quite a distance on his back. At station five they made a fire and tried to dry a bit. We all had wet feet and Sato and one of the gorikis were wet in several places.

All at once there was a commotion: the goriki, in his anxiety to dry out, had gotten too near, and the seat of his outfit—I can't say trousers—was afire. Of course he tried to run away from it. Around and around the hut he ran pursued by Sato and the other goriki.

Finally they got him down and put out the fire. But poor goriki! We packed our things and started for the inn in the village. At the third station I made a find: someone had lost his sacred wooden fish. I pounced on it—here was a trophy indeed! But I very humbly asked goriki if I might keep it and I smiled the most smiling smile I could. "Hi, Hi!" (Yes, yes.) So I took it—hi, hi!

Going down the gradual slopes was not hard, the cinders having been pounded down by thousands of feet that had gone before. At the inn they took off our shoes, lined us up at the front, placed our feet in very hot water and proceeded to fix us up. A strong man servant rubbed and patted our feet, all the while uttering little squeaky sounds of sympathy over a tiny blister that had come on one of my toes.

We sat there and sipped "coffee" (I was sold right there on Japan "tea" although I had never tasted it), and, tried to look at ease, while the villagers, several deep, stood around and plainly showed their appreciation of our efforts to see Fuji to the top even if it was "winter" and they couldn't understand it anyway.

Let me say, "We had ascended Fuji." There was a train to Tokio that we could easily catch. But why hurry? We wanted the experience of a night in a Japanese Inn, and although we have spent many nights in Japanese Inns since, that first night will stand out long in memory.

It is the custom in Japanese Inns to furnish two kimonos, one thin one and one fine silk one, also a pair of slippers. The shoes are left in an ante room, the slippers are put on at the door, the main or front door of the inn. No shoes of any kind get by the portals, all dirt is left outside.

The sun still shining brightly, as it was about six p.m., and soon our own clothes, damp and smelling of smoke were flapping in the sunshine, while we learned the way to put on a kimono and not be a "dead one." The kimono on a live person is put on and folded over in a certain way, while on a corpse it is put on just opposite. I was a corpse for a short time until a pretty flower of a girl rescued me and solemnly changed things around.

There is no such thing as a "public dining room" in a Japanese Inn. While you are in the inn your room, or rooms, are your castle. There you rest: there you eat and there you finally lie down to sleep. Our rooms were open on two sides. We could get an unobstructed view of Fuji in all the glory of the setting sun. We were feeling fine and ready for food. The rooms have big sliding doors on all sides, and between these sliding doors and outer sliding windows there is a narrow balcony around the rooms. We had three rooms, one for Mrs. Shippam and me, a sitting room came next and then Sato's room at the end, all thrown together into one big room during the day.

A cunning little table about a foot high was in the exact centre of the room. It had a rich and elaborate silk cover. We sat on large but very thin cushions. Sato, "our servant," had a tiny square table in the corner of our room, and although he sat at it while we were eating he did not eat until we had finished.

We all had on kimonos and were barefooted. Even the slippers are left in the hallway outside of the room. The serving maids left their slippers at the door and came in barefooted, as they knelt to serve us they balanced the lacquered trays with grace and ease that almost made us forget our appetites in our admiration.

A delicious Japanese dinner was served, topped off with fruits that were strange to us and candies that were stranger.

The daughter of the house, a flower-faced girl of about twenty, took me by the sleeve and urged me to come with her. "Sheesdesy, sheesdesy," she kept saying. I went along with her. There in the garden below us in a patch of moonlight that came through the trees was a bed of wonderful Shasta daisies. The fragrant air was filled with a mellow radiance and the gnarled old trees that must have stood for centuries, cast weird shadows on the flagged walk. A well with old-fashioned sweep; flowers in profusion; a pool with a tiny fountain; gold fish jumping and swimming about in the water, the moon glinting on their polished sides.

Our mats were piled high on the floor; our beds were ready. As we closed the sliding doors to our room we took a last look at Fuji, the wonderful. On one side she stood out whitely in the moonlight, silhouetted against a fathomless sky of liquid indigo.

Birds twittered and the Japanese nightingale just outside our window sang to us in plaintive tones.

Jotunheim

By G.A. Games

The district of Norway that has today the greatest attraction for the rambler and climber in summer and for the skier in winter is called Jotunheim, meaning the realm of the Jotuns or mist giants, enemies of the gods, found in Norse mythology. The giants are gone but the mist remains which is but natural because there is no area of equal size in Norway that can boast of higher peaks and a larger number of rock towers. It is a wilderness about 1500 square miles in extent, consisting mainly of a table-land above the forest zone. Timberline is about 3000 feet and the snow line is about 5500 feet above sea level.

In the northwestern section of Jotunheim this plateau is covered in places by ice mantles of vast extent, unbroken by moraines or crevasses, except where branches reach for the valleys or where peaks rise above the glaciers. Whenever deep glens furrow these uplands, groups of abrupt mountains arise.

In the north of Jotunheim two peaks of equal height compete every winter for the altitude prize in Norway. They are Galdhopiggen with its snow cone and Glittertind with its corniced snow dome, ten miles apart, separated by a deep valley. The one which wears the highest snow hood is the champion. The last records known give to Glittertind 8,140 feet above sea level while Galdhopiggen remains 40 feet behind.

The southeastern part of Jotunheim may be called the mountain lake region. Most of the lakes have clear green waters. The names of the largest are Gjende, Bygdin and Tyin, measuring in length between ten and fifteen miles. Over their cliffs tumble high waterfalls taking birth at the numerous glaciers wedged between the surrounding peaks. Lake Gjende, in particular, offers mountain recesses that form the delight of mountaineers.

To the west of Jotunheim two brooks spring from the same watershed, one hurries west



Norwegian Government Railways Travel Bureau, New York

Glittertind

the other south, both of them to flow into two narrow and long arms of the Sogne-fjord. From this valley circle rises a little alpine world of its own with abrupt ridges and a dozen rock-towers that hold watch over as many glaciers. These ice fields stretch out in all directions and send their torrents in swift and short courses to the valley bottoms 5000 feet below. Horungtinder is the name of this range; its proudest rock castle is Store Skagastolstind, 7,887 feet and its northern gateway is the saeter or chalet of Turtegro, 3,255 feet.

A hundred years ago Jotunheim, in the heart of Norway, was unknown even to the Norsemen of fjord and town and meant nothing else to them but a forsaken region of mist and frost. The few fishermen, hunters and herdsmen who inhabited it were self sufficing and were hardly in touch with the outside world. The high mountains were supposed by the peasants to be bewitched or haunted by the trolls. The first mountain ascent in Jotunheim was made in 1820 by two Norse students. It was Falkeneb (falcon's beak) 6778 feet, near Lake Tyin that had aroused their curiosity. The next great event on record was the maiden ascent of Galdhopiggen in 1854. After another long period of slumber the last mysteries of Jotunheim were revealed in 1876 when the Englishman, Wm. Cecil Slingsby, conquered singlehanded the Store Skagastolstind. This ascent aroused many Norsemen and before the end of the century all the high peaks in Jotunheim had yielded before the onslaught of well-trained mountaineers. The guide system has not developed as in the Alps; rock climbing is more indulged in than snowcraft; and it may be said that few Norse guides or amateurs are cultivating the difficult art of glacier work for which their mountains are so well fitted.

The Norske Turist-Forening or Norse Tourist Association issued its first year book in 1868. The club grew fast and has, to-day, a large active membership. The Norsk Tindeklub or Norse Alpine Club, a small group of expert climbers, was organized in 1908. Slingsby's classic work "Norway: The Northern Playground, 1904," drew mountaineers from all over Europe to the northern Alps.

To-day the approaches to Jotunheim in summer are facilitated by automobiles; the three large lakes have frequent motor service; the region is covered by many foot and bridle paths. Skis left by natives are found at the termini of popular glacier routes for the accommodation of travellers. Many rambles, mostly women, with their bulky packs follow these trails and the inns or chalets, about fifteen miles apart, are crowded to the limit by a transient trade.

Wm. C. Slingsby had been for over twenty years a constant visitor of the Norse mountains and had become, through his many first ascent, the leading spirit among Norse mountaineers. Recognizing this fact the Norsk Tindeklub decided, under the leadership of Mr. H. Tonsberg, to celebrate on the 1st of July, 1926, the 50th anniversary of Slings-by's first ascent of Store Skagastolstind. To this end a number of English climbers had been invited; however, due to prolonged stormy weather conditions only three ladies and two gentlemen from England arrived in time at the meeting place, Turtegro. Among them was Slingsby's daughter. Mr. H. Tonsberg, his son and another Norseman represented the Norsk Tindeklub. It was my good fortune to join the party as a member of the Alpine Club of Canada. For six days I had been waiting in Turtegro for the rainstorms to clear up and I was getting restless.

On the set day at 9:00 a.m., the nine of us started in a drizzle from the chalet, across pastures, over a bridge, up a roaring brook, through alpine meadows, over boulder fields to a blue pool fed by a larger tarn higher up. On this green sheet of water were floating little icebergs that had broken away from the surrounding glacier. Many patches of red snow adorned its surface. At the edges of the snow we met *Ranunculus glacialis* with its soft pink blossom, a plant that outclimbs all others in the Alps where it is found as high up as 14,000 feet. In the Norse language it is called reindeer

blossom. The glacier slopes up gently to the pass between two ridges. The one to the left is the Skagastols range. This pass is relatively broad, a common feature among high passes in Norway for which the Norsemen use the word "band." At the left extremity of this broad extent, sheltered under the foot of the S. W. of "Store" stands the primitive Skagastolshut of the N. T. F. at a height of 5,887 feet. We reached it in the midst of a shower at 11:40 a.m.

A bite was taken, the rucksacks were relieved of excess baggage and we left the hut at noon, leaving most of our ice-axes behind. At once the scramble over sound primary rock began. Without the use of the rope we struggled on for an hour and a half in a drizzle and mist until we came to a forbidding place, the foot of the needle, about 600 feet plumb under the top of "Store." Here was the parting of the ways; most of the climbers changed into sneakers leaving their boots under the rocks. Three ropes of three members each were formed, each party taking a different route.

We did not follow the route of Slingsby's first ascent. He had come with Emanuel Mohn and another Norseman from Vormelid, Utladal, the valley to the east of the Horungtinder; they had made their way for the Midi Maradal-glacier and followed its right arm stretching north along the eastern flank of "Store" to the corniced col between two of the Skagastolstinder, the "Store" or Tall, to the left and the "Vesle" or Little to the right. Mohn and his Norse companion did not like the walls of "Store's" northeast ridge but Slingsby moved on alone determined to build a cairn on the top towering 518 feet above the col. This he did without mishap; then he rejoined his friends to return to the valley the way they had come. Henceforth the col or "skar" had been called Mohns Skar and the glacier or "brae" the Slingsbybrae. Coming from Turtegro on the west, as we did, the route of the first ascent is a detour; besides, recent weather conditions had rendered the upper parts of the glacier rather impracticable.

One party took the most exposed route called the southwest ridge, the other rope chose the easiest of the three and I was taken in tow by an English couple, both rock and rope gymnasts who had climbed this needle in past years by all possible routes. The one they now selected is named Andrew Vei. It is the shortest course, absolutely vertical, just a cork screw chimney about 600 feet high. In the ensuing climb fingernails and edgenails came mostly into play; the drizzle was interrupted by short and heavy showers; the twisted chimney became a water carrier and tiny waterfalls trickled down my neck every time I tried to stop for a breathing spell. It was a harassing performance since the water ran down my spine without finding an outlet at the boots. However, due to the sagacity of my leaders we emerged from that chimney at a notch 50 feet under the top where we were greeted by the other two parties reaching the notch from different directions. Within fifteen minutes, at 2:30 p.m., the nine of us were on the top of "Store" wrapped in a heavy mist which for moments would be split by a gust of wind. The only level space appears to be taken by the cairn. Straddling one of the big rock blocks is the safest way of keeping one's balance.

For one hour we remained here, talking over Slingsby's exploits and longing for a clearing shower. Showers came but little clearing. At 3:30 p.m. we left the top, crawling down the easiest way which is not without difficulties. The descent to the foot of the needle took as much time as the ascent. After the boots were donned Mr. Tonsberg took us to the east flank of the mountain and down to the Slingsby glacier. Here we enjoyed good glissading until we were on a level with the "band" and after a short traverse to the right the hut was reached at 5:00 p.m. Now evening showers threatened; our belongings were quickly picked up; our morning tracks were followed downward under steady rain and at 7:30 p.m. we were welcomed back at Turtegro.

The large inn at Turtegro is capable of accommodating one hundred people. The saeter nearby provides plenty of food by keeping cattle, goats, hogs and poultry. It is the domain of Ola

Berge, one of the old pioneers of Jotunheim and formerly one of the best guides of the region often sought by Slingsby in his day. In spite of his advanced age Ola still takes a lively interest in the ventures of his guests; he plans their outings for them and is ever ready with counsel. From his porch he can easily survey most of the Horungtinder and there the old guide will be found watching with his binoculars the progress and the return of the climbing parties. He is the first one to detect them on their homebound trail, and his welcome is supported by a ready table. Such actions are an expression of true Norse hospitality.

But this evening a special treat awaited us; our climbing party was led to a private dining room; the sight of the table made us forget that we were in the wilderness. Food and drink loosened our tongues and soon we sang the praises of the Horungtinder, of Slingsby, of Ola Berge, of the Norsk Tindeklub, of English mountaineering clubs and of the Alpine Club of Canada.

After this banquet another feast awaited us in the large, sitting room where all the guests were assembled. Mr. Tonsberg read an article on the first ascent of Store Skagastolstind. It covered with its five illustrations two pages in a recent issue of the *Aftenposten*, a leading paper of Oslo. Eulogies, talks and narrations followed and a happy crowd remained together far into the night. Thus ended a celebration held in memory of the father of mountaineering in Norway.

NOTE:—Tind, Tinder is the Norse word for peak, peaks. The word Norse stands for Norwegian and Norseman meaning native of Norway.

A Mountaineering Journey Through Jasper Park

By J. Monroe Thorington

“There was no ambiguity about these being mountains, nor about where they commenced. The line was defined, and the scarp as clear, as if they had been hewn and chiselled for a fortification. The summits on one side of the Athabasca were serrated, looking sharp as the teeth of a saw Everything was imposing. And these too were ours, an inheritance as precious, if not as plentiful in corn and milk, as the vast rich plains they guarded. For mountains elevate the mind, and give an inspiration of courage and dignity to the hardy races who own them, and who breathe their atmosphere”

—George M. Grant.

Mountaineering in the Canadian Alps can truly be said to have had its incidence through events which took place in the territory now known as Jasper Park.

Geography books of not so long ago taught that the highest mountains of North America, Mt. Hooker and Mt. Brown—lifted their towering heights on either side of Athabaska Pass. This legend is still preserved in many a modern atlas, and has become a tradition among map-makers.

Aside from the legendary heights, Athabaska Pass acquired considerable historic interest because of its importance as a trans-Canadian route in the days of the fur trade. It was crossed in 1811, when the party of David Thompson, of the Northwest Company, used it as a route to the Pacific slope after hostile Piegan Indians had forbidden them the use of Howse Pass. For three-quarters of a century the pass served as the gateway to the Columbia River and was the first overland route to the coast over which came any large number of white people. Its story is a romantic one, furnishing us with a unique record of naive impressions of mountain travel in the Nineteenth Century, upon people who, save for their one crossing of the Great Divide, never before nor after came in contact with alpine regions. Few indeed are the individuals who were



J. Monroe Thorington

Mt. Hooker 10,782 Feet from the Southwest, showing route of ascent. Nights spent at x

1. Mt. Evans
2. West Col
3. West Tower
4. Highest Rocks
5. Summit
6. Mt. Serenity

able or took the trouble to write down their experiences; yet those who did so form a strangely interesting company—a priest, a soldier, an artist, a physician, a surveyor.²⁸ Remarkable it is that the diverse pursuits of these men should eventually lead them through a common ground; fortunate that their dissimilar viewpoints were for a little while united in the interpretation of the wonders of Nature. Often vague and faulty to be sure, their description, yet spell-bound by the natural marvels confronting them, they strove in the desire to understand more fully.

The topography of the Athabaska Pass region, and the Continental Divide as far northward as Yellowhead Pass, is accurately shown on the maps of the Interprovincial Boundary Survey, (Sheets 25-29). Space does not permit a recapitulation of the historical material which has been presented elsewhere. (Consult A. J. XXXVL, 229, Nov., 1924, XXXVII., 230, May, 1925; 231, Nov., 1925). The present paper records the mountaineering results of an expedition in 1924, through the Continental Divide groups forming the western boundary of Jasper Park, from Athabaska Pass to Mt. Robson. New and old ascents are described, and much remains; all of it in a region of spectacular beauty, primitive and unspoiled.

The eastern boundary of Jasper Park leaves the Canadian National railroad at the northeast corner of Brulé Lake, and in a general way extends southwards across the headwaters of the McLeod and Rocky Rivers, then continuing into the Southesk-Brazeau angle. From the head of the Brazeau River, the boundary follows the Athabaska-Saskatchewan Divide to the Columbia Icefields, joining the Continental Divide at the Snow Dome. The Southern and western boundaries of the park are formed by the Continental Divide, crossing through Fortress Lake, Athabaska, Tonquin and Yellowhead Passes, regaining the rail-line at Yellowhead. North of the railroad, the western boundary continues on the Continental Divide, through Moose and Robson Passes, until the level of the Wolverine-Smoky junction is reached, whence the Northern boundary of the park is a poorly defined line extending across the heads of Snake Indian River to Brule Lake.

Interest attaches to this recent conception of the Southern borders of the park, since the park now includes all of the Athabaska drainage of the Columbia Icefield and, consequently, many of the best peaks of that area. It will be seen that North Twin²⁹ (12,085 feet) is the culminating height entirely within the park, while Mts. Columbia (12,294 feet) and Robson (12,972 feet) are boundary peaks. Mt. Alberta (11,874 feet) is well within the park limits.

1. ASCENTS IN THE WHIRLPOOL GROUP

The climbing party of 1924 was composed of Dr. M. M. Strumia, Mr. A. J. Ostheimer, III., and the writer. With fourteen horses, furnished by Donald Phillips, we left Jasper on June 26th, bound for Athabaska Pass. In charge of the pack-train came David Moberly, and, as cook, Jack MacMillan. To direct its way upon the heights, the climbing party trusted to the guidance of Conrad Kain, an old friend of other years.

Crossing the Miette bridge, with the snowy face of Mt. Edith Cavell ahead, we took the road up the Athabaska Valley to the mouth of Whirlpool River, the stream which we were to follow to its sources. It was at this point that the voyageurs crossed the old ford, la Grande traverse du Trou, to Prairie de la Vache, or Buffalo Prairie, as they journeyed to Jasper House. Beyond the

²⁸ A complete bibliography with extracts from the journals of early travellers through Athabaska Pass will be found in A. J. XXXVL, Nov., 1924, p. 299. "The Mountains of the Whirlpool." Recent aspects of the Hooker-Brown problem are fully discussed in that article.

²⁹ First ascent, 1923, W. S. Ladd, J. M. Thorington, C. Kain. Consult C. A. J. XIV., 1924, p. 34 "A Mountaineering Journey to the Columbia Ice-field."

crags of Mt. Kerkeslin, powdered with new snow, through a broad valley we caught glimpses of distant peaks on the Sunwapta and Chaba headwaters. Nearer at hand, filling the Athabaska-Whirlpool angle, the towers and precipices of "Whirlpool Mt." hide the mass of the Mt. Fryatt, the loftiest peak of the Whirlpool Mountains. We passed through a lumber-camp, where railroad ties are cut and floated down the river to Jasper, and camped on a grassy hummock beside the Whirlpool. Sunset came and went in a mass of gold and crimson; we fell asleep as dusk gathered, lulled by wind-music in the pine tops and the soft whispering rush of the river.

On the following morning we crossed the Whirlpool by a lumber-camp bridge, and attempted to take our horses up the creek west of the "Whirlpool Mountain" to a low pass leading over to the head of Divergence Creek, where we desired to make a high camp. This would have given us an opportunity for closer examination of Mt. Fryatt³⁰ (11,026 feet), a then unclimbed peak whose summit is just visible from Jasper, rising beyond the crest of Mt. Edith Cavell.

At an elevation of less than 6,000 feet, cut-banks and timber make the creek bed impossible for horses; one of our animals fell and carried down two others, luckily without damage. The delay assisted our decision not to proceed further, so we recrossed the Whirlpool and camped by an old cabin not far from the mouth of Simon Creek. Ancient blazes indicate the great age of those camping places; dates back in the early '70s being still legible.

Next day we forded Simon Creek without wetting packs, and crossed many parallel timbered ridges, with intervening muskeg and shallow reedy ponds, before emerging on the river flats. Then into the timber again, where the Middle Whirlpool flows down many pebbly channels, winding through arcades of old, gnarled trees, with warm moisture rising, so that we seemed to be riding through a splendid irrigated garden where the interlacing foliage by its very luxuriance half obscured the sunlight.

We neared a timbered point, the Encampment de fusil of the early travellers, where still remains a roofless cabin of spacious dimensions, with hand-forged nails in its walls. Axe-cut planks, with marks of the Hudson's Bay Company, can be found in an adjacent clearing where huge stumps have rotted until a touch will topple them over. From nearby ledges four goats looked down in astonishment as we arrived, and, at evening, deer passed near our tent on their way to the river, moving from one pool to another on the gravel bars.

Spectacular in the extreme are the tremendous icefalls of Scott Glacier. It will be a much visited spot in days to come, and one will journey far in the Rockies to find ice-scenery which can compare with the wild splendour of the cascades plunging from the northern névé of Mt. Hooker and spreading in a flat fan, far below timberline. The Western margin of the ice is flanked by the rocky precipices of Mt. Evans, contrasting with the sheer snowy wall of Mt. Kane just beyond. From the intervening col, a slender icefall defies the laws of gravity; seemingly suspended in mid-air so steep it is and its stream ending in an iridescent waterfall spraying to a rock-bowl near the trail.

The pack-train rounds the shoulder of Mt. Kane, the valley narrowing and trail leading through evergreen timber, thickets of budding willow, and patches of snow. We enter the Athabaska Pass, in the shadow of McGillivray's Rock, with the snows of Mt. Brown ahead. Pack-horses are floundering in the snow; in nearby open spaces clusters of avalanche-lilies and anemones crowd up through the marshy soil; a cariboo stalks up and over a neighboring hillock; we arrive at the summit lakes.

³⁰ The mountain designated by Mumm and Howard as "Patricia." Consult C. A. J. VI., 1914-15, "The Whirlpool." The first ascent of Mt. Fryatt was made by J. W. A. Hickson, H. Palmer and H. Fuhrer, in 1926. See Appal. XXL, 1926, p. 421.

The central tarn on the pass is the Committee Punch Bowl, named in commemoration of certain ceremonies which were held in the old days when a nabob of the fur companies crossed the height of land. Here had come the voyageurs— Thompson, Franchere, Cox, Douglas and all the rest. How strange it seemed to be following the very track of these men of that far-off day.

Mt. Kane (10,000 ft.). First Ascent.

On June 30th we left camp on Pacific Creek (5:20) hoping to reach Mt. Hooker. Following the northern margin of the glacier tongue coming from the shoulder of McGillivray's Rock, in two hours we had reached the upper snows of Kane Icefield. On crossing a higher ridge of the Divide, at 9,300 feet, we found ourselves cut off from Mt. Hooker's southern wall by an impassable snow precipice, overhung with cornices and dropping to the broken Wood River glaciers of the Hooker Icefield. So we followed the ridge Northward and tramped the long stretches of snow to the Kane-Evans col, which we reached over a small schrund and up some slabby chimneys. We made our way thence over snow and ledges to the highest point (2:08).

Beyond the twisted strata of Mt. Hooker's Northern face the view extends to Athabaska sources, with Mt. Alberta, The Twins and Mt. Columbia, stupendous even through the distance. The Wood River Group is massed in the South, with Mt. Clemenceau looming above the fine array of glacial cirques on the Northwestern side of the massif. Westward the topography is baffling: a chaos of unnamed peaks extending Northward from the Columbia Loop, along the Fraser-Canoe Divide; the panorama embracing the Gold Range, the Cariboos, and far peaks of the main Fraser Valley. Beyond the Rampart Group and Southern Fraser sources, Mt. Robson holds the attention through its very isolation. A steep pyramid, slightly blunted in the summit ice-cap, no great group masking its precipices, one could not doubt the supremacy of its elevation. Mt. Kane is a thrilling viewpoint, the first peak any of us had been on from which all of the four 12,000-foot peaks of the Rockies are visible.

After leaving a record on the summit we traversed Westward. The snow ridges are quite narrow enough to satisfy, and the Northern slopes seem actually to overhang the Whirlpool Valley. The arête possesses an interesting central tower, with opportunity for hand and friction work on the southern slabs. A last curling ladder of snow leads to scree and broken rock descending to the glacier, and we walked home across the ice as the lengthening shadow of McGillivray's Rock came out to meet us (Camp 8:20).

Mt. Brown (9,156 ft.)

On July 1st we ascended Mt. Brown, wandering up the step-like formation of snowy benches with ice-glazed lakelets above the Committee Punch Bowl. Following the eastern margin of the Brown Icefields, we took what little climbing could be found and were soon walking up the long shale ridge to the top (9:45 - 2:45). The rope was not called into use.

The day was blistering hot and one of us, more than a year after, still bears scars from the sunburn of that afternoon. Two delightful hours passed rapidly; we smoked, snoozed, took pictures, and snoozed again. The view was certainly not "too awful to afford pleasure;" we should have been glad of an argument with David Douglas on the subject. The Wood River and Columbia Groups are practically in line, Alberta and The Twins visible, but Columbia hidden by Bras Croche.

In two hours (4:45 - 6:50) we glissaded back to the camp-fire.

On July 2nd, feeling that we had made a satisfactory reconnaissance of the pass and its surroundings, we returned with the packtrain down the Whirlpool, camping as near as possible to

the Scott Glacier, beside a shallow lake in the timbered moraines.

Mt. Oates (10,220 ft.) First Ascent.

Thunderstorms during the night; flashes of sheet-lightning revealing ghostly forms flitting about, securing tent-ropes and pack-covers; the clanking of metal as ice-axes were thrown out on the gravel flat.

We made a late start (9:30), after a threatening dawn, hoping to prospect the Scott icefall for a route to the upper basin. Our camp level was about 4,500 feet, and we soon passed the huge isolated boulders of the terminal moraine and were on the flat tongue of the glacier. Level ice can be crossed for about a mile, and the eastern moraine, below Mt. Scott, rises to 7,000 feet before one must rope and take to the ice again. One ascends another thousand feet before reaching the Hooker Icefield in the vast basin between Evans, Hooker, Ermatinger, Oates and Scott. The glacier plunges from the Hooker neve, at 8,000 feet, through the portal between Mts. Evans and Scott, in a width of nearly a mile, much broken and with gigantic séracs on the verge of tumbling. The upper basin is more than three miles across, with other icefalls entering from the crest of the Divide until the field presents a wild scene of unsupported pinnacles over an extended area. There was ice-work and plenty of it.

Rounding the cliffs of Mt. Scott, our way lay across a flat of snow toward a showering waterfall, an adjacent shaly gully bringing us quickly to an upper snow plateau between Mts. Scott, Oates and Ermatinger (2:15). Ermatinger is a beautiful peak, suggestive of a sea-wave about to break; its jagged crest of uplifted rock strata merging with a sheer, fluted wall of shining green ice. It was as if one could see the sunlight through its crest. We approached Mt. Oates, which had appeared to be the highest peak in our direction—the summit of Scott is hidden by foreshortening—climbed to a little col overlooking the south Alnus Glacier, and followed the ever steepening shale to the summit (5:45). Rope was discarded on the last thousand feet.

Below us there was a profound drop to Alnus Valley, down which we caught a glimpse of the deep blue sweep of Fortress Lake, with Alberta, The Twins and Columbia limiting the Southeastern horizon. The Hooker Icefield was glowing in the evening sunlight, the massive Northern cliffs of Mt. Serenity were in shadow, and we knew that to return to camp would be a race with darkness. In an hour (6:15 -7:15) we returned to the top of the séracs, but two more (9:15) were required for the intricate labyrinth. We were quickly off the upper ice, and the long Northland twilight enabled us to straggle into camp (10:30) just as a lantern would have become useful.

July 4th was a day of rest in camp, with spasmodic efforts at bathing and laundry—procedures which were becoming imperative after more than a week on the trail.

Mt. Hooker (10,782 ft.) First Ascent.

On this day, July 5th, we commenced a climb which eventually occupied more time than we had expected to allot to it. But it was fitting that such a famous peak as Hooker, even though not so lofty as once thought, should put up a brave fight before succumbing to our ambition.

We left camp (4:45), took forty-five minutes to the ice and an equal time to the foot of the West wall of the glacier. In selecting this wall, below Mt. Evans, it seemed to us that a quicker approach to the upper snows could be made than by the ice route we had used in ascending Mt. Gates. But, as often the case in mountaineering, the most direct route proved not to be the shortest. Two twenty-foot chimneys were followed by ascending ledges and slabs— an hour had passed. Southward and upward we traversed, across a slanting watercourse with a very wet cascade in

the middle of the wall. We were barely through and had started up the margin of the gully when a shower of small stones warned us away, barely in time to escape a bombardment of larger boulders which followed. The traverse was continued, the ground becoming more difficult. In a narrow chimney, about thirty-five feet high, it was necessary to rope the axes and sacks separately and for one man to ascend at a time with nearly the full length of rope paid out. There was a bit of exposed, bulging cliff above, and on this section another hour was spent. Easier ledges brought us to the glacier (11:00) where we halted twenty minutes for a second breakfast.

Mt. Hooker was before us, across an extent of threatening séracs, with Northern cliffs surmounted by a twisted, corniced arête that makes direct ascent virtually impossible. An ice-bulge at the mountain's Eastern end swoops down and seems to overhang. And so we chose the Western col which we had examined from the Kane Icefield.

It was a long way across the icefield and we crossed with much winding to a poorly bridged schrund, whence forty-five minutes of step-cutting brought us to the col at 9,300 feet (2:30). The sharp buttress and tower rising to the West arête of the mountain were avoided by traversing and ascending ledges on the South face, above the glaciers draining to Wood River. Close to the margin of a conspicuous snow gully, up steepening pitches we came to the mountain's crest below the rocky tower near the junction of the middle and Western thirds of the summit arête. The top of the tower is shaly and was entirely avoided by crossing a broad snow shoulder extending Southward. Here was a really bad schrund which required great care. The bridges were thin and flat; there was a curious overhanging cornice-lip on the far side, and we crossed cautiously on all-fours.

We gained height on the main arête, for the first time able to gaze over the northern wall, pushed on rapidly and scrambled through some small chimneys to the highest rocks (7:30). Making a tiny cairn for our record, we continued to the steep, wave-like crests of snow beyond which form the actual summit (8:00). We seemed to overtop all other mountains in view and, with careful anchorage, each of us had a look over the cornice and down the northern wall to the icefield. We gazed back along the line of dripping, curling cornices, red in the light of an evening sun glowing dully through forest fire smoke that hung in the valley of Canoe River.

There was insufficient time for us to return by the route of ascent, and we were not anxious to climb down the rock-wall at any time. So we started down the long snow-shoulder, descending southward from the peak and just west of the snow-flats which form an irregular pass between Mts. Hooker and Serenity. The base; of the Wood River massif was already half-hidden in violet mist, the sky a faint green with a tracery of smoke-wisps, and the pyramid of Clemenceau a floating thing of pearl-pink lifted into the heavens.

Six hundred feet intervened between us and the glacier; we had to come down to 9,600 feet; it was too late to reach camp. But the weather was fine and the average of the party still youthful enough to contemplate a night on the rocks with equanimity. The Gods dispose! We occupied a spacious cave close at hand and consumed most of our remaining provisions; then crawled near to each other and went to sleep.

About midnight there was a rumbling of thunder and flashes of lightning; rain fell, turning to snow, and a gusty wind came up. In spite of the Gothic architecture of our front door, we were fairly well protected and kept dry. Peering out at the first sign of daylight we faced a dense fog which obscured all objects save those nearby. There was a drizzling sleet; a light covering of snow on the ground. We roped, started downward, expecting to reach the glacier, round eastward between Hooker and Serenity and find a way down the Scott icefall. Although the fog disturbed our judgment of height and pitch, we descended to the glacier margin without much difficulty;

but there we halted, thinking it unwise to wander through broken ice and perhaps miss the pass entirely. The fog did not break, snow increased and so, finding a protected corner at about 9,300 feet, walled in by boulders on three sides and roofed over by a gigantic slab, we decided to wait out the storm rather than waste energy (10:30 a.m.)³¹ The wet snow had soaked us; food was gone except for bits of chocolate and cheese; we had but little extra clothing and no means of making a fire.

We arranged things as well as possible, flooring the cavern with slabs, blocking the open side with boulders and filling the chinks with snow. There was no way of keeping out the fine blown snow, and there was a good deal of shivering done that night. All suffered more or less with intermittent cramps of thigh and abdominal muscles, and with gastric burning. There was little other evidence of hunger or fatigue.

At dawn the snow ceased; the fog ebbed and billowed, rising so that as we looked out we could see the ground below and the way to the pass. Conrad was soon out, pushing over the snow-cruled boulders of the door-way in his hurry. He went ahead to break trail; the route was easy enough when once in view and the rest of us followed the rope. Fog closed down again, but not before we saw the lower slopes of Bras Croche, across Wood River, and Chisel Peak on Fortress Lake. Conrad returned to rope with us, having been nearly to the pass. It began to snow and blow harder than ever; our faces and clothing became coated with ice, and hands were cramped by holding the frozen rope. But we knew our way now and after a time the slope began to be downward, and we came to territory that was familiar. Out of the storm we came, past the eastern ice-bulge of Hooker, to the main icefall below the cliffs of Ermatinger. The séracs were covered with snow, but Conrad brought us down in good order, through the route, used for Mt. Gates, to the unroping place. Camp was reached just after eleven o'clock; we had been out a little more than fifty-four hours.

Although this is so far the longest period of time spent by a climbing party on a Canadian peak, without casualty, we were quite undamaged. On July 9th, with only one day of rest, when we sat for about nine consecutive hours within reach of the grub, the entire outfit made the twenty miles to the Whirlpool tie-camp, and on the following afternoon raced the horses along the river trail into Jasper.

And so we came back from the Athabaska Pass, sensitive to the glory of that mountain vastness which first led men in search of great Canadian heights. Mts. Hooker and Brown had become more than old geographic names; we had made contact with the pioneers—with David Douglas and all the rest — and had shared a little in the adventure of that overland trail of long-ago.

II. ASCENTS IN THE RAMPART GROUP

Because of the amount of spring snow we were unable to take our horses through the valley of Simon Creek and over to Tonquin Valley. So on July 11th we rode from Jasper, by the

31 To recapitulate: our reason for the first bivouac was to avoid working through the Scott icefall at a late hour, with the possibility of being halted for the night in an exposed position. We did not retrace our route over the long west arête of Hooker because we wished to complete the traverse and get off the mountain by a way easier than that of the ascent.

The second bivouac was purely a question of finding shelter in bad weather. We did more on the second day than a descent of three hundred feet would indicate, trying several lateral routes towards the Hooker-Serenity pass. In fact we finally ascended a little in reaching the bivouac.

Miette and Meadow Creek trails, to Tonquin Hill.

We had heard of this valley of Tonquin ; of the spectacular beauty of its lake, precipice and ice scenery. From the high peaks along the Whirlpool we had glimpsed its mountain towers and glaciers ; we had looked into misty, forested valleys at Fraser headwaters. We knew that Simon Peak, highest elevation of Mt. Fraser, and loftiest summit of the Divide between Fortress Lake and Yellowhead, had yet to be climbed.

The Yellowhead trail, in the old days, was the gateway to the settlements of New Caledonia, assuming importance as a fur-trade route a few years after the lower reaches of its great, western river had been explored (1808) by Stuart, Quesnel and Fraser. When we headed the pack-train into Miette Valley, it was on a day when furs would have been useless. The sun beat down unmercifully; we were sagging low in our saddles, dust of the trail rising in a golden cloud and obscuring all but the heads and packs of horses behind us. The white wall of Mt. Edith Cavell — la montagne de la grande traverse — became hidden by nearer hill-crests as we crossed an old trestle above the sparkling river, and the horses plodded on beyond.

Eventually we came near to Geikie, where begins the trail up Meadow Creek cut out by the park rangers in 1922. In steep zig-zags and curves it rises for a thousand feet above the Miette and swings across an upper forested level into the side-hill beyond a canyon in the creek bottom. A brilliant group of snow peaks centres about Mt. Majestic, splendidly in view for a few moments as the horses splash through a stream at the base of Roche Noir. The trail climbs higher, leaving the darkness of mossy nooks and giant trees to emerge to thinning timber and willow meadows near Tonquin Hill. From camp we looked through the jackpines to northern outposts of the Rampart Group — Bastion, Turret and Geikie — fantastic wedges and pinnacles, tinged with the metallic glow of light through the western passes.

On a day bright with sunshine we rode towards Amethyst Lakes. The broad sheets of translucent blue water spread before us, beyond flowering meadows, and reflecting the buttresses and crescentic hanging glaciers of Redoubt and Dungeon Peaks. In a little while camp was pitched in the trees near the southern margin of the lakes.

Surprise Point (7,873 ft.)

An amusing little pinnacle, easy-looking, but such a scramble if one tries it in moccasins, and with each hand encumbered by a camera. In something less than two hours we were on top,³² although we made frequent stops to photograph some queer little rickety towers of the ridge. We found a ledge where snow was melting and a place where we could snooze on the warm rocks. For more than three hours during the afternoon we sat in rapt absorption of the lovely overlook on peak, meadow and winding stream; only when the westward sun threw a dark serrated shadow of the range down upon Amethyst Lakes did we race down to the camp-fire.

Simon Peak (10,899 ft.) Traverse. McDonell Peak (10,776 ft.) Traverse.

Next morning, July 13th, we left camp (5:30) with the idea of finding and climbing Simon Peak, which, although the culminating height in the group, is most retiring and invisible from Surprise Point. Following a game trail through forest to the stream and moraine below the Fraser Glacier, we entered a shadowed glen where limpid pools reflect the symmetrical outlines of Bennington Peak. Rising slopes brought us, past the terminal boulders and marginal lakelets to the

32 Strumia and Thorington. The best route holds close to the northern crest.



F.H. Slark

Simon Peak from Head of Geikie Creek

ice. The Fraser tongue is almost unbroken and we rapidly gained height on long slopes of snow and moraine.

We had heard that Simon Peak possessed a formidable ice-crest and for that reason we wished to have a good look at the mountain before determining our exact route. Crossing the Erebus-Fraser snow plateau, we looked over to the radiating glaciers at the head of Simon Creek, thence crossing two small snow basins to the head of Simon Glacier. The peak of our mountain remained hidden, but we saw that it would be feasible to ascend steep slopes towards the col between our objective and McDonell Peak. We were soon a considerable distance up the snow, carefully avoiding the small icefall which enters the snowfield at the edge of our route. A deep schrund was crossed below a rocky wall, over a bridge that was narrow and steep, and we then mounted steadily over down-tilting strata where water cascaded into our sleeves as we reached for hand-holds. In a gully on the icefall margin it was necessary to watch for flakes of shale which frequently scaled down and sailed out to the lower snows.

Crossing above the fall we took to the rocks and made good time to the ridge above. For the first time we saw Simon Peak a little to the north, icy and with superb frozen cornices overhanging the gorge of the Bennington Glacier. The rope became a necessity. Conrad cut steps along the southern slope where the ice fragments swished down and vanished. Patches of hard ice slowed progress, and more than a hundred steps were made to the first snow point of the final crest. A higher cornice beyond, and then a short level of rocks and shale formed the summit (1:30).

Smoke hid the distant peaks that we had hoped to see, but below us was the deep gloomy gorge of Bennington Glacier, formed in the northern cirque of Mt. Fraser's three peaks and winding sinuously below the barren west wall of the Ramparts, disappearing around the corner of Casemate with the lowest portion of visible ice more than four thousand feet below our viewpoint. It was now plain that nothing of difficulty intervened between Simon and McDonell Peak; so rather than retrace our roundabout route, we walked back in the ice steps and traversed McDonell. We were just one hour between summits, Strumia leading up the ridge on steep crags where every hold was firm and belays for the rope were found wherever required. Long slopes of scree lead down to Fraser Glacier; we discarded the rope and were soon far below. Peals of thunder were heard in the north and a shower of rain swept by us as we left the ice 5:00. But as we reached the campfire the clouds were breaking above the Ramparts and a broad shaft of golden light formed a bright pattern on the Eremite Glacier.

Early in the morning we broke camp and returned to Moat Lake, a ride of some three hours, and camped by the ponds on the summit of Tonquin Pass. During the afternoon Conrad and Strumia went over to the northern wall of Geikie, but were able to see little of its upper portion because of low clouds that swirled about without lifting. Below the Turret pinnacle is a narrow gully with broad funnel-shaped top which collects the stones that come rattling and banging down day and night. Sunset glow cast crimson and purple lights on the buttresses of Geikie and Barbican, with sulphur gleams suffusing the transparent mists through which the higher ridges were occasionally revealed.

Although the next day came with a grey dawn, Conrad and Strumia went out for a climb on Bastion. We watched them cutting over a steep slope of snow high up and disappear into the hollow beyond. They were back for supper, having reached a lofty notch through which they looked down upon Bennington Glacier. The final wedge, like a huge stone spade, had been out of the question under such weather conditions and with the limited time at their disposal.

It was our last night in camp with the outfit; next day we were to ride down-trail to Geikie

and Strumia was to return home. As usual, the weather showed signs of immediate clearing. We sat by the fire, listening to tales of startling adventure — what days those were, friend Con! — when we noticed that from behind Maccarib and Oldhorn, beyond the little lakes, a full moon had come up to light the shadowy walls of the Ramparts. Pinnacle after pinnacle caught up a silvery moonbeam, until all were aglow. The pine-tops swayed in the breeze from Tonquin Pass; our horses wandered across the meadows; wind-music and a tinkling of bells.

III. ASCENTS IN THE ROBSON GROUP.

Leaving Jasper on the morning train, July 17th, we rode through Yellowhead and a little later unloaded baggage at Robson station.

How changed it all was after a few years. Cabins had sprung up like mushrooms; a broad trail, almost a road, led to a well-engineered bridge over the Fraser; permanent camps on the summit of Robson Pass made it unnecessary to use horses or even carry provisions. Altogether too civilised! We put our packs on our backs, arriving in due course at Kinney Lake. There we met the Oberland Guides employed by the Canadian National, Hans Kohler and Alfred Streich. Jolly company they were, and we had a pleasant walk together next morning, when we all went up to the cabins on Robson Pass. Fog hung in the valley, blowing in from the Fraser; then, in a change of wind, coming back from the Smoky. We had not yet seen the top of Mt. Robson, weather seemed to be getting worse instead of better, and we were quite ready to 'believe the Indian statement that it was, after all, rarely beheld by human eyes.

Mt. Resplendent (11,173 ft.) Traverse by N. W. Arête.

Enforced inactivity was making us jumpy; so, on July 20th, although it was cloudy and a high wind blowing, we all decided that something must be done. We started for Mt. Resplendent (6:30) making our way to the glacier, and wandering through the séracs to kill time in hopes that the wind would lessen. It was interesting to try the rocks of the north arête, the crest of which as far as we knew had never been followed throughout. We roped a little below the schrund, as well guided a party as has ever tackled a Canadian mountain. Ostheimer, with Kohler and Streich, made one rope; while Conrad and the writer followed behind, showing wisdom thereby, since the advance party served as an admirable wind-break and did the step-cutting. It was terribly cold and the slopes below the rocks were steep and hard. However, in an hour we were in the lee of a rocky pinnacle and enjoying a second breakfast of bread and sardines.

The shorter rope now went ahead and found some delightful climbing in a short stretch of chimneys and slanting slabs, where handholds were few and body friction alone kept one from swinging sideways. A little later we were on the upper snow-level (1:00) below the peak. Everything was enveloped in swirls of mist, but the wind had died down and we could occasionally see for a short distance ahead. Although there was no view to be had, Conrad led us through the fog to the steep cornice summit in another ninety minutes. Each of us had a look over the edge and then we beat a retreat to the western snow col at the head of Robson Glacier. Under the edge of the fog we looked far out across the sunlit Fraser to the flanks of the Cariboos and peaks beyond. There was one momentary glimpse of Robson's peak, rising like a sword-point, vanishing again in the veil of billowing cloud. We were back in camp just twelve hours after our start.

Unnamed (ca, 10,000 ft.)

On July 21st, in weather far from ideal, a little climb was made by Streich and Ostheimer

up the unnamed point between Resplendent and Lynx. The summit was reached without difficulty from the Robson Glacier and on a fair day would be a magnificent viewpoint. It would be quite feasible to traverse thence to Lynx Mountain; possibly to Resplendent.

Lynx Mt. (10,471 ft.)

Clouds continued to hang low. On July 22nd, from the Alpine Club Camp, Streich and Kohler each took a rope up Lynx Mountain, while Ostheimer, Miss Gold and the writer made a third. The mountain occupies a commanding position in the Robson cirque, with a widespread view of glaciers and valleys. One ascends snow slopes, with a few steps to be cut, nearly to the southwestern saddle, whence a broad highway of shale leads to the summit. It took but six hours to reach the highest point, and but half that time for returning. Resplendent and Robson appeared several times; never quite clear, but moist and shadowy in the mist.

Attempt on Mt. Robson (12,972 ft.)

On July 23rd Ostheimer and the writer accompanied Messrs. Geddes, Moffat, Pollard and Conrad Kain to Kinney Lake. The weather was still unpromising when, next day, we spent five toilsome hours in reaching the higher climbing camp at about 6,500 feet.

Above the cliffs, a little to the north of our tents, we could see rolling clouds that hid the crest of Mt. Robson, but which lifted enough to reveal the green séracs of a lower icefall, from which two crashing avalanches came down just before we started supper. As evening came on, the lake, three thousand feet below, was in shadow, but the sun breaking through the upper levels flooded Whitehorn with a luminous, red-gold light. To the southwest we could see across the bordering hills of Fraser River, and beyond to the Cariboos, whose winding central glaciers were steeped in lavender and heliotrope—last pale colors before dusk.

We started (4:00) on the finest of clear mornings, climbing in two hours through a small cirque to the lower icefalls. These, two in number and separated by a narrow partition of cliff, owe their formation to consolidation in the avalanche ice that breaks off from the summit cap. Walled in on one side by the great southeastern shoulder it is forced, for the most part, into the couloirs bounding the head of Kinney Lake Valley. Early in the morning it is quite safe to cross below these falls, and we continued up the crest of a long rocky ridge to the edge of the snow where we stopped for breakfast.

Above the icefalls, under which we had recently crossed, is a level of hardened snow swept by the tracks of immense avalanches from the summit ice-cap. The cap itself, from the western crest of the mountain to the top of the southeastern shoulder, is guarded by a veritable barrier of ice. We were soon on the snow, striking thence up a sharp snow-crest that connects the rocks from the southwest with the base of the ice-cap. In the ice-cliff there was a choice between a frozen chimney nearby, blue and steep, which Conrad pronounced hazardous for the leading man, and a lateral traverse on the horizontal, snow-covered ledges, below the séracs to a break that seemed to afford access to higher slopes. The latter seemed the only course, but meant an exposed crossing through the head of the great southwest couloir, so conspicuous from the Grand Fork Valley. It was past the noon-hour, the ice was in the full light of a hot sun for the first time in a fortnight, and the summit was plainly far enough away to require a night out. Not much more than two weeks before we had spent shivering hours in the caves of Mt. Hooker, and two of us, certainly, were not keen for an immediate repetition of that mode of existence.

Just then Conrad shouted: "It's coming down!" and we all ducked under the nearest ledge.

Fortunately the ominous cracking resulted in only a few small cakes of ice, and these not near us. Still the business might not yet be done with. It being a question of personal decision, it was agreed that Ostheimer and the writer should return to the high camp while Conrad should rope with the others and continue. Their story is not for us to tell, but they endured considerable hardship and made what is probably the third ascent of this highest peak of the Rockies of Canada.³³

In descending it seemed worth while to ascend the little rock-point which forms the very apex of a buttress just south of the main couloir. From Kinney Lake it seems to rise as a sharp spire; but from below one does not see the snow that extends behind and toward the ice-cap. We were near the level of Whitehorn, and built a little cairn from whence there is a widespread view across the Fraser.

When we reached the lower ice-falls we stopped to finish off some sardines and coffee, seating ourselves on a broad ledge that seemed almost to overhang Kinney Lake. Something made us turn our gaze to the lower ice. There was not a sound, but as we looked the entire front of pinnacles began to move. Slowly the green wall tottered and sank, splintering laterally and sweeping the path through which we had come in the early morning. Then came the crashes. We sat as if petrified until the last echoes died away. It was necessary to continue by a circuitous route, but before dark we were in blankets at the camp-fire.

We did not reach the summit, but there is happiness in having tried with such good comrades. They took a risk we were unwilling to accept; they came through and the glory is theirs³⁴. But there is always a potential menace in those westerly-exposed séracs; we have not yet forgotten what Conrad wrote after the ascent in 1913: "I do not know whether my Herren contemplated with a keen alpine eye the dangers to which we were exposed" ³⁵

One not athirst for excitement would have done well to avoid our climbing party in 1924. We started from home out on the day when the news of the Everest catastrophe filled the papers. Within two weeks we were storm-bound on Hooker. There had been avalanches on Robson, too close for comfort. Our letter for reservations had gone up in smoke at Chateau Lake Louise. While at the lake, after our climbing was done, a man died of cardiac failure on the snows below Abbot Pass. To cap the climax, the Trans-Canada express on which we travelled was derailed before we reached Montreal, and it was only by a miracle that no one was hurt. But, as they said, when Sandford Fleming's brandy flask, carefully preserved against the next plum-pudding, was crushed to smithereens on a rock in Yellow-head, "It was hard, but on an expedition like this the most serious losses are taken calmly and soon forgotten."

SUMMARY OF 1924 EXPEDITION—

- June 26—Jasper to Whirlpool tie-camp.
 “ 27—Attempt to reach base of Mt. Fryatt via Divergence Creek.

33 Having been up North Twin and Columbia in 1923, and to the base of the Robson ice-cap in 1924, I would seem to be the only amateur to have set foot on the three highest peaks of the Rockies of Canada. Will any one ever have all four 12,000 feet summits on his list? (J.M.T.).

34 It is difficult to record exactly the early ascents of Mt. Robson. The mountain was ascended in 1913 by Foster, MacCarthy and Kain. MacCarthy and Kain have always given credit for the first ascent to Kinney and Phillips, who were on the mountain in 1909. The reported ascent by Putnam and Hargreaves, in 1922, has not been universally accepted. The writer considers that the ascent by Geddes, Moffat, Pollard and Kain, in 1924, was the third ascent.

35 After three years, the writer sees no reason to modify his opinion that the 1924 route through the summit icefall of Mt. Robson was a risky one. This has the backing of Mr. Fynn and Dr. Hickson. Dr. Hickson and others who have examined the summit ice-cap since that year report that the route has become impracticable.

- “ 28—Simon Creek (“North Whirlpool”) to Scott Glacier.
- “ 29—Athabaska Pass. Ascent to 8000 feet on Mt. Brown.
- “ 30—Traverse of Continental Divide ridge southwest of Mt. Hooker. Traverse of Mt. Kane.

- July 1—Ascent of Mt. Brown.
- “ 2—Athabaska Pass to Scott Glacier.
- “ 3—Ascent of Mt. Gates.
- “ 4—In camp.
- “ 5—Ascent of Mt. Hooker.
- “ 6—Bivouac on Mt. Hooker.
- “ 7—Return from Mt. Hooker to camp.
- “ 8—In camp.
- “ 9—Whirlpool tie-camp.
- “ 10—Jasper.
- “ 11—Miette and Meadow Creek valleys to Tonquin Hill camp.
- July 12—Camp at south end of Amethyst Lakes. Ascent of Surprise Point.
- “ 13—Traverse of Simon and McDonell Peaks.
- “ 14—Moat Lake.
- “ 15—Attempt on Bastion Peak.
- “ 16—Jasper.
- “ 17—Kinney Lake.
- “ 18—Robson Pass.
- “ 19—In camp.
- “ 20—Traverse Mt. Resplendent.
- “ 21—Ascent of unnamed point between Mts. Resplendent and Lynx.
- “ 22—Ascent of Lynx Mountain.
- “ 23—Kinney Lake.
- “ 24—Climbing camp, Mt. Robson.
- “ 25—Ascent to Robson ice-cap.
- “ 26—Robson Pass.
- “ 27—Jasper.

The Ramparts In 1927

By C.G. Wates and E.R. Gibson

As the summers come and go it becomes more and more apparent that I am developing into that rara avis, the one-district mountaineer. Be that as it may, the last day of July, 1927, found me in Jasper completing arrangements for my sixth trip into the Tonquin and Geikie Valleys. Our plans included the establishment of a base camp at Icefall Lake, from which we hoped to attempt the first ascents of Mts. Postern, Casemate, Portcullis, Gateway and “Warden” and the first ascent of Mt. Simon by the northwest face. Unforeseen events greatly curtailed this somewhat ambitious programme and the expedition which began with joyful anticipations left sorrowful memories in

its wake.

While in Jasper I met Fred Slark who, with his climbing companion, Fred Rutis, was planning an attack on Mt. Redoubt, the highest unclimbed peak in the Ramparts. They were going into the Tonquin by the Meadow Creek trail and would camp at Amethyst Lake. Slark wished to send his packer straight back to Jasper and asked me to bring his tents back when I came, to which I willingly agreed.

We left Jasper early on Monday, August 1st, motoring out on the Cavell Road to the bridge over Portal Creek. Here we bade farewell to our cars, last symbol of the civilization which we were leaving behind for three weeks, and started up the long trail into the Tonquin. Our party numbered seven. Three were members of the Alpine Club of Canada, Miss H. E. Clyde, Miss H. A. Burns and the writer. There were two recent arrivals from England, Miss G. B. Pickford, who was entering the mountains for the first time and Capt. E. R. Gibson who has a number of seasons in the Swiss Alps to his credit and was "rarin' for a chance at the Canadian Rockies. Then there was my brother-in-law, Arthur Bloomer, who, by his masterly execution on the woodpile, earned himself the affectionate title of Uncle Bucksaw and lastly Ernest Niederer, an amateur climber born and bred in the Swiss Alps but without previous experience in the Canadian Ranges.

It seemed strange to be starting on a long climbing trip without the visual accompaniment of packers and horses, but our outfit which had been supplied by my good friend Fred Brewster, had been dispatched to Geikie Station the previous night and was already on its way into the Tonquin via Meadow Creek. Much has been said pro and con the advantages of the two routes but after having been over both trails many times, I cast my vote unreservedly for the Portal Creek Route. The grades are as easy as one has any right to expect on a mountain trail, there is a notable absence of swampy spots and the scenery is incomparably finer than that adjacent to Meadow Creek.

We surmounted the big hill in the cool of the morning and dropped down to the first bridge over Portal Creek for lunch. Early afternoon found us climbing the flower strewn alps below Maccarib Pass and by five o'clock we reached Warden Goodair's Cabin where we ate our supper and rested, walking on to the Camp ground at Amethyst Lake in the evening.

What mountaineer does not experience a feeling of envy as he watches the reaction of newcomers to their first sight of the great peaks? As we rounded the shoulder of Mt. Clitheroe, the glow of sunset on the mighty battlements was reflected in a glow of admiration in the eyes of those who saw them for the first time, intensified in the case of the two experienced climbers by the glint of battle. Four more neophytes had been added to the great company of the worshippers of our beloved mountains!

Slark met us half a mile from camp and escorted us in. We found our packers and outfit awaiting us, together with Fred Rutis and Slark's packer. One of our packers was returning to Jasper with part of the horses, so early the next morning we were all busy sorting out necessary supplies and making a cache of the remainder in Slark's tent. Then we moved westward a short journey to the summit of Tonquin Pass where we camped on the site of the 1926 A.C.C. Camp and ate lunch on the sacred surface of Mr. Mitchell's office table. Travel on foot in these valleys is summed up in an anagram for which Miss Clyde is responsible.

"Tonquin Over Nasty Quagmires Uncomfortably. Is Navigated."

In the meantime Slark and Rutis had established their bivouac at treeline above the east end of Moat Lake and the former walked down and joined us at lunch, taking Frank Moberly, our packer, back with him for supper, a circumstance for which we were later to be thankful, as it saved us a long search for the site of the bivouac.



Mt. Casemate (left) and Mt. Postern (right) Looking Across the Geikie Valley from Drawbridge

During the afternoon, Gibson, Niederer, Bloomer and Miss Pickford went for a practice scramble on the most westerly of the three aiguilles which break the slopes of Mt. Bastion and to which Dr. Bulyea and I had given the name of Sheep Rock on account of the weird similitude of a mountain sheep which adorns the summit.

Very early on the morning of August 3rd I rose to wish good luck to Gibson and Niederer who were starting for Mt. Bastion. The rest of the party broke camp and proceeded to Geikie Meadows, the pack train, accompanied by Miss Clyde taking the trail over Barbican Pass, while Miss Burns, Miss Pickford, Bloomer and I crossed Drawbridge Pass and thence by the southern slopes of the Ramparts to our destination—a route which has nothing to recommend it save the dramatic view of the tremendous north cliffs of Postern and Casemate from the summit of the pass.

Narrative by E. R. Gibson

When, on August 2nd, Wates announced his intention of proceeding to the Geikie Meadows camping ground over Drawbridge Pass, it occurred to me that there might be some climb en route that could, as it were, be taken “in our stride.” Finding that Niederer was as keen as I to make his first climb in the Rockies, we decided to deliver an assault on Mt. Bastion the next day.

Soon after 5 a.m. on August 3rd we left our camp at Moat Lake and at 8:30 reached the summit of Drawbridge Pass. As we approached the small snow-filled gully giving access to the level platform of the pass itself we came upon the tracks of Slark and Rutis, who had proceeded us up the pass that very morning. They were possibly some two hours ahead of us, as their bivouac camp was just at tree-line and very much nearer Drawbridge Pass than ours. Little did we think at the time that those footprints in the snow would be the last trace we should ever see of these two fellow climbers. As they were bound for Mt. Redoubt, our ways diverged at the summit of the pass and exactly what befell them must ever remain a mystery.

The view of the Simon, Casemate and Postern Range from the pass was magnificent; the sheer precipices of the northern faces of both Mt. Casemate and Mt. Postern being very impressive. After studying our objective, we decided to attack Mt. Bastion by the very pronounced southeast ridge which seemed to offer the most direct route to the summit. Accordingly we traversed around to this ridge over broken shale slopes and gained it without losing height.

Once on the ridge, the route to the summit was fairly obvious and only contained two pitches which offered any semblance of difficulty. Both of these pitches are near the summit. The first is a steep and formidable looking buttress which we circumvented by finding a way up a rather wide fifty-foot chimney, inclined at an angle of 70 degrees. This chimney necessitated “roping off” by the last man on the descent. The second snag was a smooth, vertical slab seemingly the only means of access to the summit. This obstacle was, however, easily overcome by giving the leader a leg-up. We took the precaution of marking this spot by a small cairn to ensure our finding it on the descent. This proved to be a very necessary precaution.

The summit itself, which we attained at 12 noon, can hardly be described as spacious, for though it is some 15 yards long, it is very narrow. There were two small cairns but apparently neither contained any records, so that we were unable to leave our cards.

While on the summit we kept a sharp lookout in the direction of Mt. Redoubt for any signs of Slark and Rutis, but the distance was too great. Niederer’s yodels were heard by other members of our party who were at that moment lunching on the summit of Drawbridge Pass. As our destination was Geikie Meadows, we decided to descend one of the southwest gullies. All went well

until we reached treeline, where the slope suddenly came to an abrupt stop in a vertical cliff some hundred feet high, stretching away on either side in an unbroken wall for a long distance. It was tantalizing to find the tops of trees growing close under this cliff and only a few feet below us but no apparent means of descent. Rather than make a long and wearisome detour, we determined to get down somehow and finding a tree growing close against the wall, we proceeded as follows: First the rucksacks and then the iceaxes were sent down on a doubled rope. Niederer then climbed down and between us we managed to jerk the rope over the topmost branch of the tree and, thus secured, I was able to descend in perfect safety.

From the base of the cliff the route was just a long grind over the monotonous shale slopes descending from Mts. Turret and Geikie. Owing to the fact that Geikie Meadows are in dead ground to anyone approaching from the east of Geikie Slide, we had some difficulty in locating the camp and did not arrive there until 11 p.m. As our route lay along southern slopes, the mountain torrents were dry and the thirst we had acquired by the time we arrived was one to be long remembered!

Narrative by C. G. Wates

Moberly and I, having viewed the proposed route from opposite directions as we approached Geikie Meadows, agreed that even were it possible to ford Geikie Creek with horses, the rock-slides descending from the slopes of Mts. Postern and Portcullis would defeat any attempt to establish a camp at Icefall Lake, so we pitched our permanent camp on the Meadows and settled down to accomplish as much as possible from that base.

Our first climb was Mt. Barbican in which all shared with the exception of Miss Clyde, who was suffering from the fell aftermath of 'flu, and Bloomer, whose love of the mountains does not inspire him with the desire to climb them. We chose a new route directly up the central couloir of the south face. This couloir becomes vertical at the point where it intersects the route of the first ascent in 1924. An interesting little traverse to the east brought us to the foot of the "flight of stairs" which will be familiar to graduates at the 1926 camp and which leads almost to the summit.

The climb was uneventful, except that I received most convincing evidence that the climber's head may acquire a solidity unequalled even by the mountains he ascends. A rock weighing fully a ton, untouched by human agency, toppled forward from a ledge and landed squarely upon my devoted; cranium. It split in two (I refer to the rock) and the halves thundered off down the mountainside, leaving a dazed but almost uninjured climber!

Our next assignment was a reconnoitering trip to Icefall Lake, which we believe to have been hitherto unvisited. A tedious descent of over 2,500 feet brought us to Geikie Creek, here a foaming torrent of considerable depth. Niederer's expertness with the axe soon felled two trees across the stream and we followed the course of Icefall Creek over rock-slides, up the side of a fine cascade, through a swampy forest to the shores of the lake.

Icefall Lake is a gloomy sheet of water hemmed in on both sides by the black cliffs of Mts. Casemate and "Warden," while, directly opposite the outlet, towers the ice-crowned head of Mt. Simon, the highest peak in the district. Through the gaps between the peaks descend the Casemate and Scarp Glaciers, their broken icefalls, from which the lake derives its name, coming down almost to the water.

We decided to attempt some of the peaks surrounding the lake by means of a bivouac, if time permitted, and returned to camp in the late afternoon. It may be of interest to know that our bridge will be found about 200 yards above the junction of the two creeks and that the round trip occupies about 7 hours.



Great Amphitheatre at the Head of Bennington Glacier

Redoubt Dugroon Duplicate Paragon Para Pass Parajet



Bennington Glacier

The Inkwell

During our trip to Icefall Lake, we had all been delighted with the ever-changing views of Mt. Geikie, the monarch of the Ramparts, and some of the climbers were getting restive to try conclusions with the great peak. We therefore pitched a bivouac at the Blue Inkwell and at the first gleam of dawn were breasting the 45-degree slope of the great snow couloir.

Our party numbered five; too great a number to give much promise of success by this route, even had other circumstances been favorable. We climbed on two ropes, Gibson and Niederer going ahead and taking turns at kicking steps, while I followed with Miss Burns and Miss Pickford. The couloir is divided about two-thirds of the way up by a narrow neck and bearing in mind the difficulty encountered at this point in former years and also the necessity of crossing the avalanche trough, I decided to take to the rocks on the right of the couloir somewhat lower down.

The ascent of that wall of rock will live long in the memories of every member of the party, from the "lady novice" to the "old timer." Cliff and ledge and chimney were piled above each other in seemingly endless succession. Neiderer and I took turns at leading and again and again we attempted to regain the snow, only to have our traverses fade out into holdless cliffs. The hours slipped by and the summit receded from our grasp. We trod with infinite care up a mass of loose slabs, cemented with ice and lying at a perilous angle above sheer cliffs and stood, not on the col, but at the summit of the peak which divides the Blue from the Black Inkwell. We had made the first ascent of a true peak, almost, if not quite, 10,000 feet in altitude, but the unexpected conquest was greeted with gloom and silence. It was after three o'clock and it would take us nearly six hours to reach the summit of Mt. Geikie from the col. I had warned the party that we might be benighted and we prepared for that adventure, but a lowering sky and the patter of rain gave emphasis to wiser councils and we beat a retreat.

A short descent brought us to the col. Owing to the extraordinary conditions of last winter, the ice which usually fills the upper reaches of the great couloir was totally buried and we were able to step upon good snow within an hour after leaving the col and directly opposite the ledge upon which Dr. Bulyea and I were benighted in 1922. Good snow, but at what an angle! No one who has not experienced it can picture the infinite tedium of descending at night 2,500 feet of snow so steep that only one, or at the most two, can move at a time. The company of those who have come down the great Geikie couloir now number ten. They will know what we underwent. Others can but feebly imagine it. Suffice it to say that we crept down through a barrage of rain, hail, lightning and, at the last, falling stones, and stumbled into our bivouac camp after midnight.

In the meantime, Moberly had made a return trip to Amethyst Lake to bring in the balance of our supplies. When he reported that he had visited Slark's bivouac and had found it undisturbed, we began to entertain fears for the safety of the climbers. Having in mind, however, that Slark had arranged with us to bring in his tents when we came back, we thought it possible that they had returned to Jasper. A council of war was held and we decided to send Moberly with a letter to Superintendent Knight asking for news of Slark and Rutis, and offering our services if our fears proved to be justified.

Narrative by E. R. Gibson

Few camp sites in the Rockies can command a more varied or more entrancing panorama than the beautiful alp-land so aptly named Geikie Meadows, nestling at the foot of Mt. Barbican and overshadowed by giant Geikie's precipitous western face. As the eye travels around from the blue distances of the Fraser Valley in the west with range upon range of unnamed and unclimbed summits, across to the nearer peaks of Mts. Gateway and Portcullis, up to the glittering, glacier-

clad crown of Mt. Simon, monarch of the whole Mount Fraser and Rampart Group, it is arrested by the tremendous cliffs of the northern and western faces of Mt. Postern (9,720 ft.). It seemed to challenge us by the very audacity of its outline; that and the knowledge that it had not previously been climbed determined us to make the attempt. Owing to the difficulty of transporting a bivouac tent and bedding through the dense bush in the valley below Icefall Lake, Niederer and I, who were to make the attempt, decided to make the trip direct from our camp at Geikie Meadows, in spite of the fact that it entailed a long descent of over 2000 feet into the valley of Geikie Creek and consequently a similar climb on the return journey.

We got under way shortly before 5 a.m. on August 10th and reached a point level with Icefall Lake at 7:30. From here an easy slope leads up in a northeast direction to the base of a series of steep ridges and gullies which seemed to connect with the summit arête almost at its lowest point, which is the Postern-Casemate col. These buttresses and gullies seemed to offer a feasible route to the summit ridge, though the point at which one would strike this ridge was over half a mile from the summit itself. The further west one looked, the more precipitous and hazardous did the summit mass appear. We decided therefore to strike for the arête at a point directly above us and take the chance of being able to pursue it along almost its entire length to its highest point.

Whereas the northern side of Mt. Postern is remarkable for the smooth and unbroken nature of its cliffs, the southern face is seamed by a large number of gullies of varying degrees of steepness, but offering at the southeast end of the mountain several alternative routes to the summit ridge. By this means we gained the ridge without encountering any serious difficulty, although some pitches were steep enough to oblige us to rope off on the descent.

Once on the arête, we were greeted with very remarkable views of the southern slopes of Mts. Bastion, Turret and Geikie, which, owing to the narrowness and great depth of the intervening valley, appeared impossibly steep. The summit ridge was, for the most part flat and very easy going, but provided two pitches of interesting climbing, the first being an abrupt rise of about 100 feet half way to the summit. The second was a U-shaped notch about 20 feet deep which provided quite an interesting problem, as this gap occurred at the narrowest part of the ridge³⁶

The summit itself is spacious and consists of a huge heap of disintegrated boulders piled up on the solid strata below. The climb had taken us five and one half hours from the level of Icefall Lake and had been interesting throughout. The rock is good and belays are numerous. After erecting a cairn and leaving the usual records we descended by the same route for most part and reached our rucksacks in four hours from the summit. Our descent would have been made more quickly had we not wasted a lot of time roping off a steep pitch, it being necessary to reascend twice and refix the rope before we were able to pull it down after us. We were back in camp at 10 p.m., the total trip having taken 17 hours.

While on the summit of Mt. Postern I made an interesting discovery, namely, that Gateway Glacier as shown on the Interprovincial Boundary Sheet No. 28, is not a glacier at all, but a lake! This lake, which is of a beautiful jade colour appeared to be quite a bit larger than Icefall Lake and will, I hope, eventually take its place on the map as "Jade Lake." It should be mentioned that Jade Lake lies in a deep cirque between Mts. Portcullis and "Warden" and is invisible from any of the survey stations.

36 (Exactly similar notches are found in the west arête of Barbican and the east arête of Geikie—C.G.W.)



Throne Mountain and Astoria River



The Western Ramparts from the East End of Moat Lake

Narrative by C. G. Wates.

The news of the discovery of "Jade Lake" inspired us with the desire to visit it and we packed blankets and food for a two-day exploring trip. Moberly was long overdue and we concluded that no news was good news. We were in the act of leaving when we heard the sound of bells and Moberly rode into camp, accompanied by Warden Charles Mathieson and a string of Government horses. They reported that Slark and Rutis had not returned to Jasper and that Superintendent Knight had accepted our offer to organize a search party.

In 45 minutes we had broken camp, packed the horses and were on our way over Barbican Pass to Moat Lake, which we reached in record time.

At this point it may be appropriate to summarize the rest of our climbing activities. In the course of the search we made an ascent of Drawbridge Peak, an easy climb but dangerous on account of the large amount of loose rock. On our last afternoon at Moat Lake, Miss Burns and I made the first ascent of the Lower Shark's Tooth, a miniature climb of astonishing difficulty ending in a summit measuring not over two feet thick and overhanging at an angle of ten degrees.

After our return to Jasper, the same two climbers made the ascent of Mt. Edith Cavell by the east arête, under the guidance of Heinrich Fuhrer, it being the first ascent of the east arête by a lady. I cannot speak too highly of this route, which is in a class by itself. For sustained interest, I have yet to encounter a peak in the Rockies to compare with it and the solidity of the rock is in pleasant contrast to the rottenness of the neighbouring ranges. Naturally one cannot expect to find the spectacular difficulties of Mt. Louis on all parts of an 11,000-foot peak but I have no hesitation in urging any fairly competent climber to climb Mt. Edith Cavell by this route.

But to return to the expedition, Heinrich Fuhrer, Swiss Guide from Jasper Lodge joined us late that night and we made plans for an early start in the morning. At 5 a.m., Fuhrer, Niederer, Gibson and I left camp in a dense fog, carrying food, bedding, firewood and first aid equipment. The fog lifted as we approached Drawbridge Pass and we caught our only glimpse of Mt. Redoubt. A long descent to avoid the cliffs of Drawbridge Peak and an equally long ascent over gigantic boulders, brought us to the pass between Mt. Redoubt and Drawbridge peak. This point we subsequently named "Lookout Pass."

By this time the fog had closed down thicker than ever. We continued along the ridge (which is, at this point, the Continental Divide) searching for traces of the climbers' passage. Ten days had elapsed since Slark and Rutis started on their ill-fated attempt and all footprints in the snow had vanished but occasionally we found unmistakable tracks in the loose, moss covered rubble on the ridge. When we were within a short distance! of the peak, Gibson and I waited in vain hope that the fog would lift, while the two Swiss went on to the foot of the west arête, by which we believe the attempt to have been made.

Having waited two hours for the fog to rise and after shouting repeatedly, we abandoned hope and retraced our steps to find that the ladies had prepared a welcome supper for us at Slark's bivouac.

Next day we organized our forces and began the search in earnest. Fuhrer and Niederer established a camp on Lookout Pass at about 8,200 feet and searched the summit mass and the slopes above the Bennington Glacier. Gibson, Miss Burns, Miss Pickford and I acted as a supporting party, carried supplies to the Lookout camp and searched the slopes above Amethyst Lakes. Chief Warden Langford and Warden Mathieson looked after transport and supplies, while Miss Clyde attended most efficiently to the commissary department. Bloomer, to our great regret was obliged

to return to Edmonton.

Gibson and I attempted a frontal attack on Lookout Pass in order to cut down the time necessary to reach Mt. Redoubt. Failing in this, we installed a permanent rope from above, which cuts off between two and three hours. For the benefit of future climbers in the southern Ramparts the following directions are appended. From a camp below the Pass, which is the lowest point between Mt. Redoubt and Drawbridge, climb the boulder slopes between the two steep snow-filled gullies. An easy series of ledges runs up diagonally from the right to left for about 200 feet, terminating in a level shelf from which rise two chimneys, the left being very broken and the right very smooth. The latter is the correct route. The first 30 feet can be climbed and the end of the rope, which is heavy and very strongly fixed, will be found.

At the end of a week we had found no trace of the missing men and we felt that we had done all that we could. The two Swiss had followed the route by which we all agreed that the attempt had probably been made. The only serious difficulty on this route involves a traverse on narrow ledges above vertical cliffs, below which is a much crevassed hanging glacier, the whole much exposed to fire from falling stones. If the men were swept from their holds at this point, it is improbable that the bodies will ever be found.

After consultation with Chief Warden Langford, we decided to abandon the search and our party returned to Jasper, where I made an official report to the Coroner.

In conclusion, I should like to impress two points most strongly upon all members of the Alpine Club of Canada engaged in independent climbing. It is easy to be wise after the event, but if there is any lesson to be learned from the unfortunate accident this summer, it behooves us to learn it. The two points to which I refer are as follows:

1. Every climbing party should leave one or more persons in camp who can go for aid if the climbers do not return within a reasonable time.

2. Every climbing party attempting a new peak or route, should mark its route by means of frequent cairns. These may be of the simplest description; three or four stones are ample.

If these simple rules had been followed, two of the three recent fatalities in the Rockies would have had a different outcome.

Exploration In The Coast Range

By W.A. Don Munday

“Mystery Mountain,” in the Coast Range of British Columbia, first challenged attention of mountaineers when referred to by Dr. Victor Dolmage in the Geological Survey Summary Report, Part A, 1924, as being over 13,000 feet in height. The name “Mystery Mountain” has been used here owing to the wide currency it has gained, and also because the Geographic Board of Canada has so far taken no action to transfer the suggested name “Mt. Waddington” from a peak near Yellowhead Pass³⁷.

My wife and I had long cherished a wish to explore the unknown heart of the Coast Range, but the wish first took definite form as the result of a trip to Mt. Arrowsmith, Vancouver Island, early in June, 1925. Persistent rain finally yielded vis a few hours of crystal clarity in the wake of a heavy snowstorm on the heights. To the westward the Pacific Ocean, beyond the Alberni Canal,

³⁷ The name has since become official.

shimmered like pearl. Southward, clouds hid the Olympic Range in the State of Washington. To the northwest the glacial peaks of Strathcona Park were partly revealed. On the easterly side of Vancouver Island, above the violet expanse of Georgia Strait, the snowy Coast Range reared a gleaming rampart above a purple base, extending more than a hundred and fifty miles northwestward before fading in cloudy distance. Cloud-windrows still built mocking mountain forms upon a foundation of authentic peaks further inland.

One massive rock peak almost due north seemed to dominate the distant horizon somewhat eastward of a line drawn to the head of Bute Inlet. As chiefly the summits near the coast were clear, it was concluded, wrongly, however, that this peak was close to tidewater. (Mystery Mountain lies approximately 30 miles further west, and was not seen on this occasion.) We resolved then and there to visit Bute Inlet to look for the mountain we had seen. T. H. Ingram was the other member of the first party. A. E. Augur, formerly of Summerland, B. C., was added to the original Mt. Arrowsmith party.

In September we went to Orford Bay on the S. S. "Chelohsin," and met Jack McPhee, a resident trapper from the head of the inlet, 26 miles away. He consented to take us along in his rowboat which was fitted with an outboard motor.

As our chief desire was a high viewpoint, McPhee advised going up Mt. Rodney, this being the only mountain with the semblance of a trail through the timber. The climb of 5,500 feet to timberline was something of a nightmare; packs were heavy, there was no water, the heat was oppressive, choking clouds of spores rose from dense ferns, and the final 2,000 feet was over large, loose rocks.

McPhee, however, had talked of "The Big Mountain" as being far up the Homalko River³⁸. He had accompanied Mr. R. P. Bishop, formerly of the B. C. Department of Lands, to the top of Mt. Rodney to triangulate this peak among others. (This was an unofficial trip.) The Homathko River flows into the head of Bute Inlet from the northwest and the Southgate³⁹ River from the southeast, Mt. Rodney⁴⁰ being in the angle formed by the latter river and the inlet.

Pathfinding ahead of our party, at about 2,500 feet above Bute Inlet I broke through the brush to the edge of a windy precipice. Before me lay the broad fiord mightily walled, with remains of winter avalanches still in gullies within a few hundred feet of tidewater. Beyond the head of the inlet extended the 8,000-foot trench of the Homathko, nearly straight for about 20 miles. Beyond this great corridor was a vast expanse of glacier out of which rose a range of splendid rock peaks. Above their imposing summits lay a thin roof of level, wintry cloud, and piercing this in lone majesty towered the pinnacled monarch of the Coast Range. It was one of those supreme moments sometimes vouchsafed to mountaineers, and one has little quarrel with fate if he has been granted such a sight.

Although it was only mid-September, even the 8,000-foot peaks, which must be our present objectives, were deep in new snow. We camped higher than the tongue of the small northern glacier on Mt. Rodney. Wind, rain, frost and snow marred our stay. As a climb, the main peak of Rodney, 7,843 feet, was nothing, but as a viewpoint it was superb. "Blade Mountain," 7,880 feet, south

38 This pronunciation well established by usage. Homalco Indian Reserve and Homathko River appear together on B. C. Powell Lake Sheet, 1923. Waddington used Homalko frequently. It appears exclusively in Report of C. P. R. Surveys, 1875, and B. C. Coast Names. Capt. J. T. Walbran. "Homathko" is the ruling by the Geographic Board.

39 Named by Capt. G. H. Richards, R.N., 1862, after Capt. J. J. Southgate, member of B. C. Legislature. B. C. Coast Names, p. 466.

40 Named by Capt. Richards after Admiral Rodney. B. C. Coast Names, p. 427.



Don Munday

Mt. Waddington

From Icefall Point, across forks of Mystery Glacier, looking N.E.
Fury Gap at left.



A.R. Munday

Mrs. Munday Packing 60 Pounds Across Scar Creek

of Rodney, and involving almost a complete traverse of the latter, gave Mrs. Munday, Agur and myself an interesting expedition owing to the snow-masked intricacies of a glacier and much new snow on the shattered rock peak, a virgin summit. The same day Ingram also made a first ascent on the west peak of Rodney, reporting the crumbling summit ridge as difficult.

The splendid panoramas in the hours of good visibility made the trip well worth while, and we were able to pick out much useful detail in the region around Mystery Mountain in spite of the distance.

We were marooned for a day on the rocky shore at the foot of Mt. Rodney as the result of Indians from the Homalco reservation damaging McPhee's boat and motor and handling him severely too.

In the second week of May, 1926, Mrs. Munday and I went from Vancouver to Orford Bay. This is a voyage of 160 miles or more, and there is only a weekly service. We now had our own rowboat and outboard motor.

McPhee not only offered, but insisted, that we make his cabin our headquarters. At this time it smelled vilely of bear fat because of a great hide drying indoors. The cabin has historic associations, being built of huge hewn timbers salvaged from the ruins of cabins of early settlers around Waddington Harbour. In the '60s Alfred Waddington had a charter to build a toll road by way of Homathko valley to Fort Alexandria in the days of the Cariboo gold rush. Work on this trail ended in ghastly fashion when 14 men of the unarmed trail gang perished April 30th, 1864, in a midnight massacre by Chilcotin Indians at Murderers' Bar. The "Chilcotin War" ensued, and several more lives were lost before five of the murderers were tried and hanged. Work on the trail was never resumed. Waddington's judgment was vindicated by surveys indicating that the Yellowhead Pass-Bute Inlet route offered the cheapest route across British Columbia for the Canadian Pacific Railway⁴¹. The inlet, however, could not be regarded as the ultimate terminus, Waddington Harbour being no real harbour.

For many years a big log jam had closed the Homathco River about four miles from the mouth. We now found a turbulent crooked channel which we called Pitchfork Gap out of due respect for its bristling snags. We got some distance upstream above this with the boat.

The river was low for the time of the year, so we decided I ought to return on the next northbound boat with most of the expedition's supplies and get them as far up the river as possible before normal summer flood levels were reached.

Mr. R. C. Johnson of Vancouver had volunteered his services in any capacity, and he and I returned to Orford Bay, May 23rd. The inlet was somewhat choppy and we had two trying trips to McPhee's. Two trips up the river had to be timed to suit the tides, the river-mouth being highly dangerous under certain combinations of wind, tide, and river current.

On May 30th we met at Orford Bay, the other members of the party, Mrs. Munday, T. H. Ingram, A. E. Agur, and the writer's brother, A. R. Munday. In addition there were

Mrs. B. Ellett, her grown daughter, and our infant daughter who was in their charge; they were to stay with McPhee.

Although unable to go on the expedition, Mr. Chris. Spencer, A.C.C., took a keen interest in its success and contributed generously towards outfitting it.

Bute Inlet was named in 1792 by Capt. George Vancouver, after the third Earl of Bute⁴². It is about 40 miles long, with elevations of 3,000 feet walling it at the entrance; from Orford Bay

41 Information from Reports of Surveys, C.P.R., 1875-1877.

42 B. C. Coast Names, p. 73.

to the head of the inlet the mountains rise from tide-line for from 7,000 feet to over 9,000 feet ("Castle Mountain"), while the average is probably 8,000 feet.

McPhee had a jolly houseful that night for supper, and next morning, May 31st, we left in rain at 6 a.m., towing McPhee and three of the party in his boat. The motor gamely drove this double load as far as the log-jam at last. There we cached our boat among the trees eight feet above the water, little thinking that on our return the spot would be nearly submerged. McPhee took his boat back.

I had already cut out about four miles of trail to our cache at the small cabin of C. O. Patchell, a trapper. Neither Johnson nor I were willing to face the responsibility of taking the party by water past the log-jam.

We had towed a canoe up to Patchell's, and in the afternoon Agur and I took an experimental load of grub a mile upstream, but the real start was begun next morning. Perhaps lack of the usual spring freshet had left the channels more obstructed than usual, but the river could by no means be described as "entirely navigable for steamers for 36 miles."⁴³ Obstacles greatly exceeded what McPhee and Schnarr, a trapper friend of his, had led us to expect. Showery weather prevailed on the heights, the water increased daily in volume, and difficulties grew worse with every mile.

The valley is between one and two miles wide. Except for absence of sea water, the fiord type of gorge extends un changed for 30 miles from Bute Inlet, the mountains rising 7,000 to 8,000 above the valley. The river winds back and forth across its flood plain, at high water being a swift stream from 300 to 1,500 feet wide, and rarely confined to a single channel for any distance. Merchantable fir, cedar and hemlock is mostly limited to the valley floor, and most of this is subjected to a slow cycle of destruction and reclamation.

Waddington's trail was on the east side of the river until near the first canyon, but recent provincial maps omit to mark what of late years proved to be misleading information. Doubtless parts of the trail remain, but on that side of the river there are two huge glacial torrents, the Jewakwa and Heakamie Rivers. Marcus Smith, with a Canadian Pacific Railway survey party, wrote a graphic account of these difficulties.⁴⁴ In keeping mostly along the western bank we had in mind the possibility of having to abandon the canoe before leaving the river; it was true there were three glacial tributaries on the west side, but we should not be faced with crossing the river itself where its turbulence would be considerable.

When rain suddenly brought the river up three feet in one night, a fortunate decision saved us from being caught on a low midstream island, but, as it was, our party and supplies were scattered for two days of rain before strenuous efforts reunited us in readiness for the struggle forward in the face of increased difficulties. Driftwood in the river now threatened the canoe frequently. In the log-jams we noted many fragments of boats, and rafts, for many hunters, prospectors and timber cruisers had lost outfits in the Homathko River; one party arrived at the river mouth on foot in their bare feet.

Once a paddle snapping in midstream almost resulted in Agur and Johnson being swept under a jam. After knocking two holes in the canoe, nearly breaking its back, and many times nearly losing most of our supplies, we cached it, and made better progress back-packing in relays of about half a mile at a time. Before this, our days had been mostly a succession of tedious portages. At no time throughout the trip did Mrs. Munday carry the lightest pack.

Beaver Creek, the first glacial creek on the west, we passed by travelling river bars in mid-

43 Victoria Colonist, Aug. 1862. A. Waddington.

44 Rept. of Surveys C. P. R., 1877, pp. 163-170.

stream. Gorge Creek at the big bend of the Homathko gave some trouble, there being no tree long enough to fell all the way across it.

For our own usage we settled uncertainties of nomenclature by calling the next one "Scar Creek" because a landslide of over 3,000 feet in height made a distinctive landmark on the valley slope above it. The big trees we felled broke from their own weight, and small trees washed away in this torrent. Forging was impossible. We contrived to get 60-foot cedar logs across its narrowest point at last. But even with the climbing rope for a handrail it was not a pleasant crossing.

We had each averaged 100 miles of hard going on foot when on June 12th we camped near Coula Creek, about 25 miles in a straight line from tidewater.

Mrs. Munday and I went up Coula Creek on the 13th. From its mouth we saw parts of the great "S"-shaped glacier which we had seen from Mt. Rodney the previous September, and from the lower reaches of the river. The Homathko here is about 400 feet above sea level. Our course was partly along the steep mountainside, but mainly over the big boulders of the creek bed. In about two hours we reached the lower of the two snouts, finding it only 1,000 feet above the river.

For a mile the glacier was hopelessly crevassed, and the crest of the south lateral moraine, 400 feet above the ice, afforded a narrow and crumbling, but inspiring pathway, for a mile to one of the semi-stagnant embayments featuring the south side of the glacier for several miles beyond this point.

The undisturbed south side of this part of the moraine carries a vigorous young forest which peers over its crest. This moraine separates the glacier from a parallel mile-long valley full of young growth. The southern mountain-side indicates a horizontal retreat of the glacier snout of only about 600 yards. Mature forest stands above the oldest moraine, while upon it similar trees, fir and cedar, are about 18 inches in diameter.

The youngest moraine is likewise the biggest, and a mile from the snout bears off sharply to the south where it might be mistaken for a terminal moraine blocking the head of the previously-mentioned deep green valley which the ice has forsaken possibly considerably less than two centuries ago.

Passing a moraine lakelet, we climbed on to the ice and crossed the bay for a mile to the foot of an 800-foot "cape" which created an icefall connecting with the chaotic network of crevasses prevailing the whole length of the dry glacier.

Climbing a steep draw, we reached the crest of the cape, about 3,500 feet elevation. It was a splendid coign. Three miles ahead of us the glacier, debouching southward out of the range, wheeled its richly blue séracs in a succession of transverse waves so huge that we had seen them plainly from Mt. Rodney, 30 miles away.

The culmination of the icefall had a strangely impending appearance, maintaining for a mile a height of 500 feet above the comparatively smooth marginal ice. A long nunatak in the making doubtless explains the mountainous centre of the icefall.

Two goats and their kids, asleep in the sun on the cliffs, woke when we tried to approach, and disappeared.

Wooded shoulders sloping gently to Scar Creek beyond the turn of the glacier, looked promising for a climbing camp. Clouds lurked on all the high ridges, and only the range east of the Homathko occasionally pierced the rainy vapours with challenging crags.

While we were doing this exploring, camp had been established beside Coula Creek and all the grub and equipment checked over. Several important shortages were not surprising after the struggle up the Homathko valley, and there was also loss by spoiling. Next morning my brother,

Agur, Johnson and I took loads of grub up to a point half an hour below that reached the previous day.

On the morning of the 15th we cached a small amount of grub for the return trip down the river. The second half of the party got under way at 9:30 a.m. The hot steamy air promised rain. At the glacier snout the advance party stopped and cooked lunch. Then we all toiled up to the moraine crest.

At the cache we added some food to our packs, and scrambled up to the unprepossessing site of "Cliff Camp" at 6 p.m., with light rain falling. The advance party were already on their way down to the cache for the rest of the grub.

Rain poured all night and we enjoyed the unwonted luxury of sleeping decidedly late. Rain continued, but in the afternoon four of us again relayed grub forward. Descending the cliffs to the glacier, we kept to the ice for half a mile, climbed the next cliff promontory, regained the ice further on, and finally cached the grub under a big boulder on the moraine at the bend of the glacier.

A break in the clouds then lured us up the thinly-wooded slopes for a thousand feet where we found some patches of bare ground on which tents might be pitched. Vague glimpses southwest of the escarpment of Scar Creek excited our interest.

On the 17th we broke camp in rain and all went by the same route to the crest of the ridge. While we lunched, clearing weather decided us to push further westward. In mid-afternoon we found a narrow, dry heather slope at about 5,000 feet in the midst of wide snowfields. Pinkish avalanche lilies abounded in this pleasant spot which faced the dazzling Whitemantle Range across Scar Creek.

These beautiful peaks, although little over 8,000 feet in height, stood a full 6,000 feet above their glacier tongues, and it was hard to realize that they were merely minor peaks of this section of the Coast Range.

It was indeed pleasant to get away from the Homathko valley's curse of sand. It was everywhere, even drifted high above the ground in the rough bark of the trees.

In high spirits to be up among the heights at last, supper was a festive meal, the more so as Mrs. Munday produced a culinary triumph in the shape of a steamed fruit pudding. As sunset flushed the last remnants of the retiring clouds we climbed 900 feet above camp, but the big glacier's southern retaining wall effectually barred all views northward toward the main peaks of the range. We crossed the tracks of a cougar that had been hunting whistlers, and saw its trail again on other occasions. My brother found one place where the animal had got into trouble with a small slide on a bad slope.

Sunrise next morning cloaked most of the peaks with local cloud. Then we climbed to snow-capped "Pivot Dome," about 6,300 feet; around this massive boss the glacier wheels southward out of the extensive basin surrounded by 10,000-foot peaks; "Waddington Glacier" is suggested as a name, as Alfred Waddington was so prominent in the early history of the valley of the Homathko, and on his map of it he illustrated the glacier and range by a sketch, a graphic method he used to identify several mountains prominent from the river. The glacier is 1 1/2 miles long, the névé being over 4 miles wide.

We obtained a comprehensive view of the upper glacier, but nothing was to be gained that day by pushing on along its southern rim. The route to Mystery Mountain presumably lay beyond "Mystery Pass" at the head of the glacier, but what then intervened was merest conjecture. The slender final spire of the big mountain actually, did emerge momentarily, ghost-like in the clouds, but not to be indentified with certainty that day.

Clouds again accumulated at dawn on the 18th, creeping in from the ominous east. But as our range was still clear, we extended our explorations westward across three old glacial cirques to the edge of the deep valley of the small glacier (small in such company) flowing south from among the peaks at the head of Waddington Glacier.

Climbing up among this irregular array of pinnacles and towers which were adorned with fantastic caricatures of man and beast, we groped through cloud into the upper basin of the smaller glacier, traversing two sides of "Mt. Martello" in heavy snow on steep névé slopes. About 4 p.m. we surmounted the pass at 9,000 feet overlooking Waddington Glacier.

Glimpsed through cloud, the two fine 10,000-foot peaks of Mt. Agur, south of Mystery Pass, beckoned us up, although the weather debarred all hope of helpful views toward Mystery Mountain and its approaches. On closer approach we decided that the bergschrund and the snow curtain above it were too formidable to try so late in the day, for everything had to be subordinated that did not lead toward Mystery Mountain. So regretfully we turned aside to a little rock tower west of the pass for the solace of reaching the top of something.

Then we retraced our steps. A blue-black cloud marched menacingly up the Homathko valley, blotting out the tiny silver fragment, of Bute Inlet which was persistently visible from most places. A thin tilted blade of rock furnished an exhilarating traverse once more. We got down to camp at 9:30 in the midst of the storm, but moonlight and scattering clouds lent a wild glory to the mountain world as we went to bed.

Between continuing squalls of heavy rain next day we busied ourselves trying to dry clothes. When we were nearly through, the clouds suddenly relented and rolled off in sunny masses.

We agreed on the wisdom of advancing camp into the green valley below "Bert's Glacier" but the question arose whether Mrs. Munday would be able to get there on account of a severe attack of snow-blindness.

The morning of June 21st was perfect. The rest of the party set out for the valley while I climbed to Pivot Dome for a panorama for mapping purposes. This time I clearly saw the tip of Mystery Mountain through the pass. Coming down, I picked up my pack and followed the others, rejoining them just as they finished lunch in the valley. Mrs. Munday had been practically led there by Ingram, but already felt some relief from the intense glare.

The valley was wet and rough and all the larger trees had been lopped off by an avalanche for half a mile. Avalanche lilies were in utmost profusion everywhere. Agur and Johnson went back for the balance of our stuff, returning at 7:15 p.m. Long before this the peaks had dissolved in grey vapour, and the last tent was pitched in rain.

Convinced this would be a prolonged rain, our early riser overslept himself next morning, which dawned cloudless. Our climbing party this day consisted of Agur, Ingram and myself. The previous Sunday had been the first day of rest for four of our party. My brother now thought the day's exploration might well be foregone to nurse a knee wrenched the day before. Johnson had not come to climb high peaks, and Mrs. Munday was still sorrowfully a hospital case.

We set out around the western end of the range, and had a long upward tramp, crossing two partially separated glaciers to a little rock peak about 9,000 feet high, but our old enemy, cloud, again masked all the summits. Mystery Mountain, somewhere full in front of us, gave no least hint of its existence other than a glimpse through a gap in the intervening ridges of part of the lower reaches of an obviously important glacier.

On the return we crossed between the isolated rock pinnacles set like markers to define the western boundary of "Bert's Glacier," below which we were camped; my brother had discovered

it and took a possessive interest in it. To outflank the ice fall we descended avalanche-swept snow slopes, and to our surprise found the crest of the icefall fully 3,000 feet in height above camp.

When we reached camp, Mrs. Munday delivered something in the nature of an ultimatum—less than four days' supply of grub remained. Next morning her eyes were nearly normal again, and it was a matter for gratification that our united judgment could now be brought to bear on climbing problems in the final effort to come to grips with Mystery Mountain. Weather looked settled, as it had falsely done many times before. Risk of avalanches during the day along "Bert's Glacier" was worthy of some consideration, but the chief point was the probability of night frost speeding us on our way if we started after sunset.

Johnson left at 8 p.m., breaking trail for us through the sodden avalanche snow to the crest of the icefall. Ingram went with him, and the four of us, starting an hour later, joined him soon after we passed Johnson on his lonely way back down the shadowy slope to camp. Up on the névé, in spite of an almost full moon, a light was needed by the leader to watch for hidden crevasses. The frost crusted the snow, but merely enough to be a hindrance, so Agur and my brother took turns with me in breaking trail. We arrived a full hour late at the previously visited pass, about 9,000 feet, leading to Waddington Glacier.

Here we ate a light meal on an insecure rock pile which gave poor shelter from the biting wind. High snowfields shimmered far and near, cut by lengthening shadows. The moonlight had left the southern wall of Waddington Glacier, and a way down among its gashed and massive ice-domes had to be found in the gloom before the dawn.

The descent of about 800 feet brought us in the wintry light of dawn to the gigantic wind-sculpturings of a broad terrace parallel to the deep and wide central trough of the glacier, and it was not yet clear whether or not we might be forced down into the intricacies of the crevasses there. However, we found we could turn one end or the other of all crevasses on the terrace.

Meanwhile, glorified in purple, far peaks from southeast to northeast emerged from the dusky distance, and the vast undulations of ice and snow about us glowed almost as richly as the crimson wisps of cloud overhead. The unknown region east of the Homathko River presented such a uniformity of level in its snowfields as to seem a sea of ice with peaks or short ranges rising out of it island-like. There appeared to be many peaks rising to 10,000 feet or over, but these were not grouped along any apparent axis or axes.

For a few minutes as we descended from the first pass, the peak of Mystery Mountain peered at us through Mystery Pass like some fantastic monster with long neck upreared. When we climbed to the latter pass at 5 :15 a.m., the mountain stood revealed from base to peak at last, a fine upstanding symmetrical form tipped with that slender tower which in turn was crowned with three sharp cornices of ice one above another. All the summit ridge was adorned with icy pinnacles which reminded me of the summit ridge of Mt. Robson as it appeared in 1920 before B. S. Darling's "host of white-cowled monks"⁴⁵ began to decrease in stature and number.

Below us an involved branchwork of glaciers linked the lesser peaks and ridges with the big mountain.

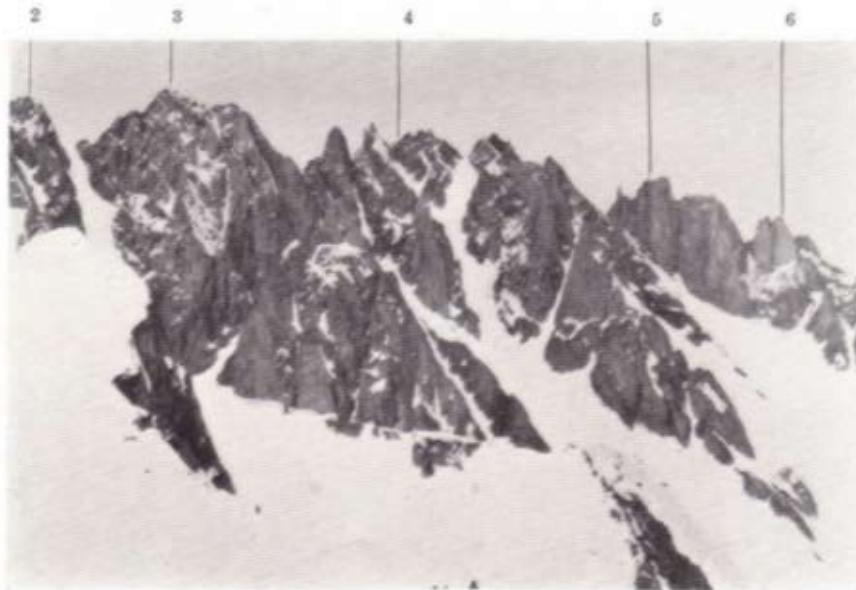
Down into "Ice Valley" we plodded, with the impending masses of the magnificent hanging glacier of the long southern wall on our left; on our right, the smaller glaciers clinging to the dark cliffs of a massive mountain culminating in four snow-capped peaks (now Mt. Munday). A thousand feet down, we breakfasted in the "White Lunch," a circular hollow which was still in

45 Canadian Alpine Journal, Vol. VI., 1914-15, p. 31.



A.R. Munday

Mt. Whitemantle at Left, Cascade Glacier and Barb Mountain and Scar Creek Valley From Pivot Dome



Mrs. Munday

Peaks on North Sid of Tiedemann Glacier

Left to right - Part of (2) Tiedemann Peak, (3) Mts. Asperity, (4) Serra, (5) Stiletto, and (6) Dentiform

shadow but gave a little shelter from the wind.

Then we went down our glacier which was only a tributary of a tributary of another glacier. Passing two northern feeders, we studied the mountain before dropping further into the valley. The western ridge carried a well-defined ice-wall halfway up, but was too far away in any case. Much of the eastern ridge presented no difficulty, but how to reach it was a problem; "Spearmen Peak" gave some hope of a route over its crest. The noisy southern wall of Mystery Mountain was out of the question. The more we saw of the slim final tower the more difficult it seemed.

The rugged third tributary of our glacier led steeply to a col east of Spearmen Peak. The snow was soft, the crevasses far-reaching, snow-bridges rotten, and the bergschrund troublesome. My brother handed the latter well. He and Agur took turns with me breaking trail throughout the whole trip, while Mrs. Munday helped by carrying the heaviest pack in the party.

From the windy col, at 2:30 p.m., Spearmen Peak looked unassailable under existing conditions. A climb of a few hundred feet toward it confirmed our defeat. We had reached apparently 10,000 feet at the base of Spearmen Peak and it was only a minor point on the side of the big mountain.

The view 13 miles down Tiedemann Glacier⁴⁶ was superb. It has a striking uniformity of width and grade, and is nearly straight. Flanked by precipices of from 4,000 to 5,000 feet or more, it is fed mainly by ice-falls and avalanches discharged directly on to its surface. Mystery Mountain was hidden by Spearmen Peak, and the granite precipice of the 12,000-foot peaks directly across Tiedemann Glacier made them the most imposing features of the scene. Tiedemann Glacier is 15 miles long and 2 1/2 miles at its widest. In the northeast we saw brown and almost snowless hills where the Interior Plateau meets the Coast Range.

Southward we picked out Victoria Peak, 7484 feet, the highest mountain on Vancouver Island. Closer at hand spread complicated ridges clad in ice and snow, with a wide reach of "Mystery Glacier" disappearing down a valley below timberline.

The thermometer read 34 degrees in the col, and a tiny lakelet on a cliff-edge was slushy with needles of ice, although a hundred feet down the south slope the heat was almost oppressive. We began the descent at 5:30. Snowslides had swept away our tracks in several places. Frail bridges no longer held. Several masked crevasses were discovered by somebody suddenly breaking through into them. For a time the sky looked threatening.

Supper in the "White Lunch" was as chilly an undertaking as breakfast, the sun being now down. The climb to Mystery Pass was a marvellous experience. The crimson and orange of a wildly lighted sky reflected back and forth among the glacial walls, so that the eye met nothing of a familiar hue, even our clothing having changed in colour. Then the full moon slowly invaded this unreal scene, bringing the witchery to its height.

Once more the snow was tediously crusted. A bold traverse of a shadowy gigantic glacial dome saved much in distance and elevation in ascending to the south pass, and we reached it about 1 a.m. By this time two of the party recorded unreal scenes as intruding upon their vision as they tramped along.

Leading was now a privilege as it kept the fortunate one awake. About 2:45 we unroped at the top of the icfall, and wallowed down the half-frozen avalanche slope. Dawn-flush and moonset, transforming the séracs with delicate lights and liquid shadows, repeated a little of the magic of the previous evening. Faithful Johnson had hot food waiting when we reached camp at 4 a.m., but

⁴⁶ Named after H. O. Tiedemann who accompanied Alfred Waddington as engineer. Waddington's trail passed the glacier snout. Tiedeman designed the first legislative building at Victoria, B. C.

our chief need was sleep. We had been roped together for 24 hours out of 31 since leaving camp.

Within a few hours the sun blazing into the valley made sleep impossible and in the afternoon my wife and I climbed the ridge west of camp for a panorama of photographs.

Next morning a sleety rain overtook us at breakfast, so that we packed wet tents when we broke camp at 7:30 a.m. Agur, Johnson and my brother pushed on ahead and cooked a scanty lunch at the site of Cliff Camp, scantier than breakfast. By mid-afternoon the rain was torrential and drying out at the Coola Creek cache was none too successful that evening. The river was an impressive flood now. Where we had walked dryshod, was rushing grey water. As a consequence we were often forced up on to the cliffs or into trailless undergrowth. We lost half a day felling likely-looking trees to bridge Scar Creek, but finally found a log across it about a mile upstream. This landed us in a mile of rough going to regain the main valley, and the afternoon of the 28th brought us to Gorge Creek.

Here supper and breakfast consisted mainly of raw and stewed huckleberries, helped out by a little rice and bannock. Half a day was spent struggling to get 35-foot poles across to a boulder in midstream and then across a similar gap to the other shore before afternoon high water prevented bridging-Much rough going was encountered on the way to the mouth of Beaver Creek but we located Agur and Johnson with little trouble. They had made the last two miles in the canoe at some risk, and next morning, taking some of our equipment, they made an adventurous run to "Schnarr's cabin." The land party arrived there about noon by a difficult route, the cabin being on an island and cut off now by deep river channels.

Except for a few odds and ends, our food was exhausted; somebody had lost the last of the chocolate, nuts and raisins. A small amount of flour found in the cabin was a godsend. Near here a huge cedar fell within 50 feet of the canoe; close by the same place a "sweeper" nearly caught it. Agur and Johnson again effected a junction with us down the river in the evening.

This was a hungry camp, breakfast finishing our new grub supply entirely. The canoe party readily, though at much hazard, reached Patchell's in half an hour; the cabin was now on an island; our old route of travel was flooded, and the land party did not arrive till about 2:30 p.m., but the meal awaiting us from Patchell's stores was a fitting celebration of the date, Dominion Day.

The highest part of the small island was about two feet above the river which this afternoon was rising over an inch an hour. We had seen where uprooted, full-grown cedars, floating with tips in air, had been thrust by the river into the woods and sometimes snapped off. One such tree had plowed directly across where my wife and I had slept, so this night we picked our bed with such a contingency in mind. A tremendous crashing in the night startled us. A nearby giant had gone down. Then followed the loud snapping of branches and small trees close at hand as the inexorable river dragged its prey into the stream. We hardly dared to go to sleep again.

The boat cache was on an island now, so we had some more balancing to do on barkless logs across swift channels. The island was not a foot above the water level. We were soon afloat on the broad grey flood. The river had risen over eight feet. The engine stalled repeatedly, the oarsman staged an inopportune argument with the steersman, and I got a timely gasp from the motor only just in time to save us from capsizing against a group of snags at the base of Mt. Evans. Pleased with itself now, the engine got into its stride, the deserted Indian reserve and Graveyard Point (officially Potato Point) slid past, and in an hour we landed at McPhee's, the canoe party arriving an hour later through scorning a tow. Having been a week on short rations, we were fully able to do justice to the culinary efforts of Mrs. Ellett and McPhee.

On the evening of July 3rd, while Johnson and I were returning from taking half the

climbing party to Orford Bay, we caught a brief view of Mystery Mountain against the sunset sky towering supremely over the intervening range. On the 4th, the rest of the party and baggage was divided between the two boats and a start made before sunrise for Orford Bay. The "Chelohsin" duly landed us in Vancouver next morning.

The geological specimens I brought back are described by Dr. Victor Dolmage as in every way typical of the Coast Range batholith. The rugged Coast Range borders the Pacific Ocean for a distance of 900 miles with a general N.N.W. trend from the Fraser River to the head of Lynn Canal. Passing behind the St. Elias Range of Alaska, it gradually blends with the Interior Plateau at Lake Kluane. In the southern part the width of the range is about 100 miles, closely coincident with the main portion of the great series of batholiths composed of granites, diorites, gabbros, etc., which were intruded probably during late Jurassic time⁴⁷.

The area adjacent to Toba, Bute, and Knight inlets apparently contains the maximum elevations of the Coast Range, which here assumes almost an east and west trend. The highest peaks are towards the inland border of the batholith, due in part perhaps to the seaward margin being depressed into the partly submerged Pacific Coast downfold or Coastal Trench which separates Vancouver Island from the mainland. Dr. Dolmage has expressed himself as not inclined to regard faulting as playing any important part in the pre-eminence in height of the Mystery Mountain group, which he regards as a deeply dissected dome.

The most outstanding feature of the region is the vertical range of the present zone of glaciation; Waddington Glacier descends at least 9,500 feet; Tiedemann Glacier about 11,000; Heakamie Glacier descends within 500 feet of sea level in the Homathko valley.

It is probable there has been considerable re-adjustment of drainage areas. Waddington Glacier undoubtedly once directed its main flow south into Scar Creek valley instead of eastward down its present outlet, a narrow, short and almost V-shaped valley occupied by Coola Creek. For about a mile the south lateral moraine almost or actually forms the watershed between the glacier and Scar Valley, and small lakes occupy basins in the top of the ridge. Apparently a soft micaceous schist has been eroded so rapidly as to divert the whole glacier eastward in this manner.

Ranks of huge angular rocks in the forest on each side of the mouth of Beaver Creek apparently represent moraines of a glacier from this valley, and a similar formation was observed near the mouth of "Gorge Creek" at the big bend of the Homathko, flowing from what must be a magnificent glacial cirque beside which is Waddington's "Macdonald's Peak," a slim isolated spire about 7,500 feet high. Waddington probably confused the gorge of this creek and the valley of Coola Creek, for he describes the latter as a "dreary gorge"⁴⁸ and shows it with a course fitting the former creek which certainly does possess a most imposing canyon; one wall soars fully 5,000 feet sheer; the other, overhanging for the first 500 feet, is broken by a narrow wooded shelf before continuing upward in a similar great precipice.

While the trip had failed in its chief ambition, there still remained plenty of ground for satisfaction in having proved the existence in the Coast Range of a region of alpine importance

47 Can. Geol. Sur., Memoir 23, 1913, Bancroft. In Can. Geol. Stir. Summary Rept., Part A, 1924, post-Lower Cretaceous age is suggested for part at least of the batholith.

48 "Map A referred to in my letter of Jan. 31, 1863, to the Chief Commissioner of Lands and Works."—Alfred Waddington.

and with physical features distinctively its own; the enjoyment of original exploration can be every whit as keen as that of climbing for its own sake. One important result of the expedition was to establish the true position of the big mountain as about seven miles south of that given by the Geological Survey, and about the same distance north of that determined by Mr. Leroy S. Cokely, B.C.L.S., D.L.S.

A Journey In The Rockies Of Canada In 1926

By A.J. Ostheimer

On the morning of June 30th, 1926, our outfit of twenty-one horses dusted its way up the Bow Valley from Lake Louise, Alberta. Dr. J. Monroe Thorington, expert mountaineer and walking encyclopedia of the Canadian Rockies, Dr. Max M. Strumia, possessor of an enviable climbing record, the writer, and Edward Feuz, Swiss guide, formed the climbing party. The outfit was in charge of Jimmy Simpson, with "Mousie" Saddington and Ernie Stenton, as helpers, and Tommy Frayne—our "bloody" English cook. For four days we packed northward, then turned West along the west branch of the Saskatchewan River, following the Glacier River to its source under the southeast glacier of the Lyell ice-field. Here we placed our base camp on July 4th, and the same afternoon the climbing party, packing about thirty pounds apiece, moved to the attack of the Lyell Peaks.

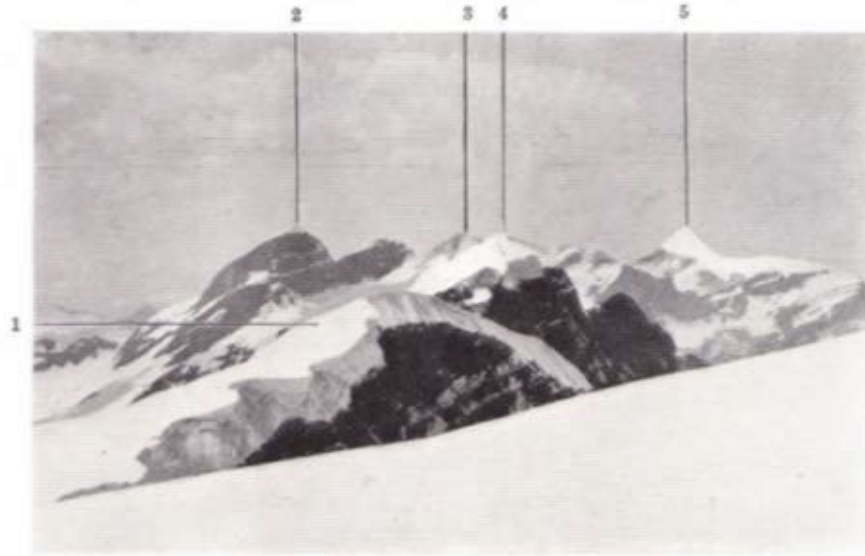
A nasty little climb that was to our high camp! We crossed the terminal moraines of the southeast glacier, now being cut away very rapidly, following along the south edge of the ice until a fallen block formed an interesting passage to the glacier stream. Across the clean ice we moved, to a surface moraine on the north edge and then continued up shale slopes, through thick brush, ascending little gullies, to about 6,800 feet. Four goats on the cliffs above watched us lazily, seeming to guess that we were perfectly harmless, and the marmots whistled warnings of our approach.

A beautiful little meadow, above the glacial creek from Archtomys Peak, attracted us. So, among its flowers, we placed our two tents and made ourselves thoroughly at home. Tired as we were, we sat and gazed. To the South, across the Lyell ice-tongue and far beyond, Mt. Forbes reared its head—a great pyramid of ice and snow and rock, changing from color to color in the setting sun. Surely, Edward had been right! This was a view, and one of the mightiest in all Canada; indeed, among all mountains.

Our beds that night were among the flowers, for our little valley was a mass, a jumble of color. Indian paintbrush and fire-weed flashed in the sunlight; red and white heather, blue and yellow columbine, violets, avalanche lilies and forget-me-nots grew in profusion.

Next day, the 5th, we were on our way at 3:25 a.m. Forty-five minutes brought us to the snow, and in another forty we were on the upper ice-field. The spring snow was in good condition, but we were sorry to find it so plentiful. Hot days would make a slushy, soft snow-field and work. Now, for the first time, we saw the five peaks of Lyell. No longer was our task such a mystery; at least: we knew a little of the peaks we'd come to climb.

Like five fingers these Lyells jut from the ice-field. Peak Two alone had been climbed; it was the snow peak of Lyell. Number One stood out to the East in a great block; Number Three suggested a giant tooth,—isolated and sheer; Number Four seemed a long ridge of rock, and



J. Monroe Thorington

Mt. Alexandra and Peaks of Continental Divide from Lyell

1. Forbes 2. Alexandra 3. Bryce 4. Oppy 5. Columbia



J. Monroe Thorington

Lyell Icefield. Peaks 4 and 5 from Summit of Peak 3.

The Continental Divide is Seen with the Bush Valley Behind Peak 5.



A.J. Ostheimer
Peaks One and Two of Mt. Lyell
(one on the right)

A.J. Ostheimer
**Mt. Lens Rises in Massif to the West of
the Continental Divide**



A.J. Ostheimer
Icefall of the Bow Glacier

A.J. Ostheimer
**Lyell Peaks Two, and Tares from the
Summit of One**



Number Five showed us a snow-face that, at least, opened an avenue of approach. Stopping for a bite of food at 6:20 on the ice, we decided to strike the col between One and Two. It was a long snow pull, but easily passed, and a bergschrund offered no hindrance. At 9:50 we stood on the summit of Number One, 11,370 feet high. Near us, the spring snow constantly slid on the steep east ice-face of the second peak of the group.

In an hour and a half we had struggled through deep snow to the snow col below, and up the slopes of Peak Two. We traversed its summit immediately, and descended into the saddle between Number Two and Three. A great schrund blocked our further upward moves on the ice, and the rock cliffs proved sufficient defence to keep us from the summit of one of the highest unclimbed peaks in Canada. After a short rest we decided to have a look behind the peak, so we started around the great ice cascade to the north, but no way appeared up this great mass. The whole peak, in fact, impressed us as being one gigantic overhang; rock and ice both towered, leaned out forbiddingly, over these midgets, men who came to climb.

All the way round Number Three we went, by the arête running northward to Farbus; over the tremendous icefall into a branch of Bush River, until we were brought up by a rock-wall under the col between Peaks Three and Four. Finally, after some most interesting rock-work, we struck home across the ice-field. A wolverine track led from this col, from British Columbia into Alberta. Had old "Devil Claws" made this crossing, up that ice-fall and wall? Perhaps—.

At last, seven o'clock, we were back at high camp; our first round with the Lyells had been a draw. We had made a first ascent of No. 1, 11,370 feet; a second ascent, first traverse, of No. 2, 11,495 feet, but No. 3 had, for the time being, repulsed us, sent us homeward by an eleven thousand-foot col never before crossed by man.

The 6th was a day of rest for us. Extremely hot weather continued, and thunderstorms broke around us in the evening. Jim and Ernie brought up more food in the afternoon, and the four of us slept, photographed or wrote. At nights a porcupine became a regular visitor, but we safely stored our grub and edible belongings in the tents. No party of ours was going to return because of destroyed climbing shoes. Three of the climbers left at 3:30 a.m. on the 7th—the fourth remained in camp with a painful sinus—but the heavy fog and rain forced them back to camp. And at 2:30 on the morning of the 8th the weather was still too bad to make a start. It cleared later, however. Edward descended to the base camp for food, while two of us went alone (9:10 a.m.) in search of pictures and adventure. We ascended a rocky point west of the high camp, crossing from there to the Continental Divide (1:30 p.m.). Some wonderful views were obtained, but the long, deep snow grind on an empty stomach sent us homeward. Some very good ice work around several bergschrunds lent excitement to the return, and clearing weather made life better for us all.

At last, July 9th, we got away. An early start—1:25 a.m.—enabled us to reach the schrund under Number Three at 5:30 in the morning. We crossed, cut steps to the rock ribs above, ascended them, and cut on up the snow and ice to the summit ridge. The sun was behind the eastern buttress of the peak; the snow remained firm, but not for long. We hurriedly gained the summit (6:30), photographed and retreated. But short as our visit was, each of us remembers vividly that view. Around us, as far as the eye could see, stretched Canada's mountain peaks. Northward, towered the Czar, Clemenceau, King Edward, Spring-Rice, Alexandra, Columbia and the vast ice basin at its feet, the Twins, Saskatchewan, Athabaska, and Brazeau; to the East, jutted Cline, Mathison and the ridges from Willerval to Monchy; Southward were Hector, Pyramid, Outram, Forbes; the Freshfield group and the huge expanse of the Lyell ice-field and the Mons Glacier, and to the West lay the Purcells, Sir Donald, Sir Sandford and the Bush Mountains.

The giants of the range reared their caps above a peculiar forest-fire smoke line, that, circling the horizon at about eleven thousand feet, divided sunlight from darkness. It was a most wonderful sight!

The snow in our little couloir was rotting fast. We believe we re-crossed the berg-schrand (7:35 a.m.) at the right time: any later would have been extremely dangerous. But, anyway, we now had the first ascent of the Divide Peak of the group, 11,495 feet.

A long walk on the ice-field brought us under Five. Some ticklish work followed on the lower schrand, which was really a miniature ice-fall. In fact, we literally swam across one poorly-bridged crevasse. At 11:05 a.m., after an uneventful climb, we gained the summit of Peak Five (11,150 ft.) another first ascent. On the rocks just below the top we halted. Cameras clicked busily, pipes were smoked, and we snoozed in the sunlight. After an exciting descent to the ice-field, a long tramp homeward, rendered bizarre by the amusingly rapid vanishing of the spring snow from the lower crevasses, and a youthful chase of a ptarmigan, we turned into camp. Anemones and dog-tooth violets in our tents forced us to forget the constant oozing of our faces. For "Old Sol" had done his work well, and all but one of us, whose wife proved extremely thoughtful by giving him a well-rigged veil, suffered the pains of severe blistering.

Next day we packed our belongings down to the main camp. But our ice-bridge at the edge of the glacier had long ago disappeared, so we descended on the north side of the river to a point opposite camp. After a futile attempt by one of us to wade the rushing waters, filled with ice-cakes and floating stumps, and the calls of our combined lungs, we attracted attention to us and our whereabouts, and a short time after were all eating and loafing to our hearts' content.

Next afternoon, with tea, bannock and beans, and our climbing equipment, we walked easily over the Mons Glacier, and bivouaced at 8:30 near a tiny spring-water creek high up by the lower Mons icefall.

While walking across the glacier that afternoon, a hot breeze suddenly came down on us from British Columbia. Fire smoke followed soon after and we bade "good-bye" to the views for the rest of our trip.

It was cold and damp in the bivouac, and hard sleeping. We pulled out at 2:25 next morning, ascending through brush and scree with the aid of two lanterns. On a ledge we were forced to halt in the darkness and wait until light came. But at 4:20 we were across the moraines and the Mons Glacier, and started up the North Glacier of Mt. Forbes.

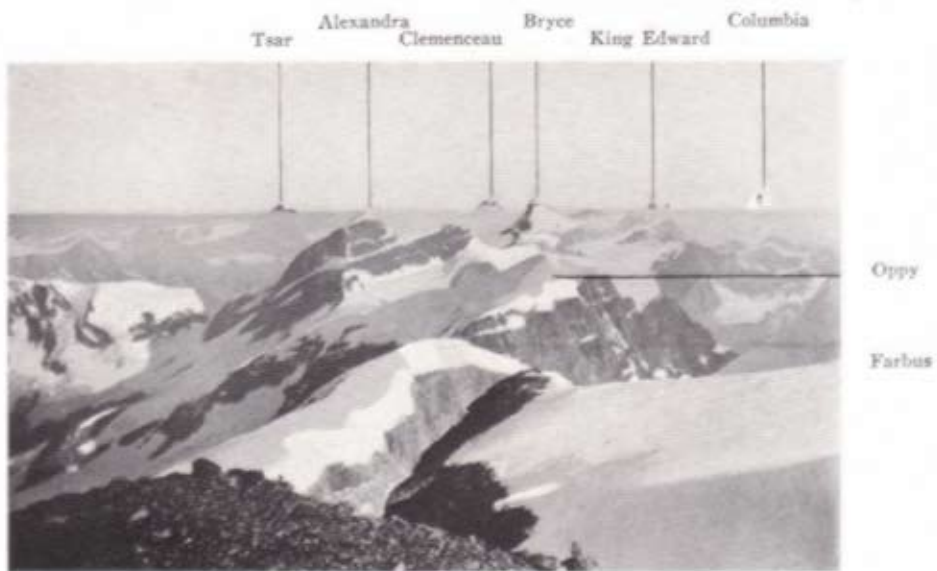
Here was an interesting system of moraines. The Mons Glacier flows northeast. Its lateral moraine is joined at right angles to the terminal moraine of the North Glacier of Mt. Forbes, which flows northwest. Thus, ascending as we did from rocks north of the Mons Glacier, we crossed successively a lateral moraine, a surface moraine, the main stream of the Mons Glacier, its other lateral moraine, a terminal moraine, eventually gaining the North Glacier of Forbes.

Slowly, we worked up the long ice-slopes, rounding a very pretty little icefall, and turning, under a series of dolomitic aiguilles northeast of Forbes, and the huge hulk of her final pyramid west to a little snow pass at 10,300 feet. Here we struck the western arête and continued, over extremely rotten shale and a long snow and ice ridge, to the beautiful summit cap at 9:45 a.m. The highest eleven thousand-foot peak of Canada's Rockies was ours! Though our party was but the third to gain this summit, we could find no record of any previous ascents, so we erected a small cairn on the southern rocks of the crest.

Unfortunately, the fire haze cut down the visibility tremendously; in an hour we were on our way down. As we descended below a rock band, an avalanche crashed by us, scarcely twenty



Edward Feuz Descending Rock Band on Mt. Forbes



View Northward along the Continental Divide from the Summit of Mt. Lyell, Peak 3.
Distant Peaks are Seen Above the Level of Forest-Fire Smokes

feet away, erasing our tracks and filling the air with a distinct odor of sulphur. We moved off the mountain rapidly, descending directly to our bivouac for a cup of tea. On the North Glacier of Forbes, as on the Lyell Glaciers, the spring snow was melting extremely fast. Treacherous were the bridges, and sloppy the going. Down and down we went, over ice, snow, moraine, and through timber: until, at six that evening, we pulled into base camp.

It had been a long day, and a hard one in many ways, but our dreams of climbing Forbes had come true, and still more firmly was the memory of that giant pyramid impressed upon us.

A red and smoky sunrise had greeted us that morning as we crossed the North Forbes Glacier. "Bad weather before night," warned Ed. We all laughed; but at the base camp that night a terrific windstorm, accompanied by rain, lifted the author's tent.

Next day, the 13th, we rested and followed our various pursuits. One chased coleoptera; another photographed, and the third spent his time among the moraines above camp. On the glacial deposition about five hundred yards from the ice lies a very curious system of perfectly round grass beds, which presents an odd picture. The outfit immediately named this avenue "Broadway." The southeast Lyell icefall is constantly roaring; we noticed, also, that the falling during bad weather was both heavier and more frequent than on sunny days.

The afternoon following found us encamped near the Freshfield Glacier tongue. The thick fire-haze remained with us, and bad weather threatened. The writer here continued to put in time at some very amateurish geology. Good-sized iron pyrites were found floating in large numbers on the southern surface moraine, most of them unencompassed by any rock. Apparently, and Dr. Strumia found this same "fool's gold" on Solitaire Mountain, the source of these is on the rock shoulder jutting northward into the Freshfield basin. Poor grade copper, concretions, some interesting rock specimens, and a small amethyst were also recorded.

Considerable work was done using Mr. Howard Palmer's⁴⁹ "The Freshfield Glacier" as a basis. Dr. Thorington's outfit, in 1922, had made several markings on the stones and boulders of the glacial stream. With these for measuring, and boulders of the lateral moraine for "lining up," some interesting measurements were taken.

In 1922, four boulders were on the ice-tongue. These were each marked. This July, one, formerly on the ice-tip, was 330 feet from the tongue, thus indicating an average retreat of the ice of 82.5 feet a year. The large stone near mid-stream and nearly a mile up the glacier from its snout, painted "1922," was 350 feet distant from the largest of the glacial erratics, when marked. In 1926 it is 406 feet below its large neighbor. Block No. 13 of a line of fourteen stones numbered across the glacier in 1922 was found 381 feet down stream from its former seat. That indicates an average daily movement during four years of 3.13 inches. Yet, in July, 1922, the highest average daily motion for six days of any of these fourteen stones was 4.83 inches.

The moulins of the glacier are well-formed and numerous. And the Freshfield brook now emerges from beneath the tongue entirely on the north side, and not from the many beds of 1922. The glacier cleans itself by a large lower dirt zone in place of the usual dirt band. But most interesting, when considered by itself, was the combat which sun and glaciation have waged over the movement of the largest of the glacial erratics. This great boulder, containing about 10,000 cubic feet, is constantly forming a pedestal under itself. The glacier stream flows northeast and the sun melts the pedestal from the south. Thus, a steady spin is in progress. In the last four years nearly ninety degrees have been turned and the angle of rest severely disturbed. It would certainly be interesting to watch this battle of the elements!

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A.J. Ostheimer
**Mt. Forbes Across the Southeast Lyell
Glacier**



A.J. Ostheimer
The Dolomitic Aiguilles East of Forbes



A.J. Ostheimer
**The Southeast Lyell Icefall from Point Above
High Camp**



A.J. Ostheimer
**The Western Snows of Mt. Forbes Lie
Framed by Shale Cliffs on the Northwest
Arete**



Route of Ascent of Mt. Forbes, from Glacier Lake, by way of Mons and Forbes North Glaciers.
Division Mountain and the Southeast Lyell Icefall are Seen on the Right. Bivouac Indicated by Circle

From the Freshfield we returned in five days to Lake Louise.

Tepee poles were numerous; grouse and chicken passed in review. And, alas! bad weather held us at the Upper Bow Lake for two days, where we enlarged on our one day's acquaintance with "The Countess." In the evening this beautiful white-tailed deer and her fawn played gracefully about, close to camp, bouncing in and out of the sun-glint at the edge of the bush.

We left the trail with sincere regret, for there we had found life and action, with a host of interests and associations. With another successful season belonging to the past, we wonder when the next will be.

SUMMARY OF 1926 EXPEDITION

- June 30—Lake Louise to Hector Slide.
- July 1—Bow Lake.
- “ 2—Via Bow Pass to Upper Wildfowl Lake.
- “ 3—Howse River opposite mouth of Glacier River.
- “ 4—Base at head of Glacier Lake. Lyell climbing camp.
- “ 5—Ascent of Lyell Peaks 1 and 2; attempt on Peak 3.
- “ 6—Climbing camp.
- “ 7—Attempt on Peak 3.
- “ 8—Arctomys Ridge.
- “ 9—Ascent of Lyell Peaks 3 and 5.
- “ 10—Base camp.
- “ 11—Bivouac in Mons basin.
- “ 12—Ascent of Mt. Forbes.
- “ 13—Lyell Glacier.
- “ 14—Freshfield Glacier.
- July 15—Ascent of Mt. Solitaire. Measurement of glacier.
- “ 16—Camp on Howse River opposite Mt. Outram.
- “ 17—Upper Wildfowl Lake.
- “ 18—Bow Lake.
- “ 19—Bow Lake.
- “ 20—Ascent of Mt. Collie; descent to Takakkaw camp

MISCELLANEOUS SECTION

Passes Of The Great Divide

By A.O. Wheeler

A mountain pass may, generally speaking, be defined as an accessible route for crossing the height of land between two areas of drainage flowing in different directions. The summit of a pass is technically spoken of as the watershed, or the place where water begins to flow in opposite directions. The Great Divide, or continental watershed, is an imaginary line following the division of the waters flowing east or north to the Atlantic or Arctic Oceans and west to the Pacific Ocean. It lies along the crest of the Main Range of the Rocky Mountains.

For purposes of discussion passes may be divided into three classes: (1) Low, broad valleys,



Interprovincial Boundary Survey

Summit of Tornado Pass, Left. Tornado Mountain, Centre



Interprovincial Boundary Survey

Ptolemy Pass and Mt. Ptolemy

forested or burned over, through which railways and main roads run. (2) Valleys leading to heights of land, for the most part above timber line and frequently crossed by pony trails. (3) Crests or ridges between mountain peaks, essentially mountaineering passes, and technically referred to as cols, often snow-clad but not necessarily so.

When speaking of a pass one generally visualizes its height of land or summit. In reality a pass may be many miles in length and includes the valleys leading to and from such height of land, which valleys may have tributaries leading to other passes; as for instance Bow Pass which includes the valley of the Bow River on one side and that of the Mistaya River, flowing to the Saskatchewan, on the other.

Class 1, railway and road passes, are of lowest altitude and their summits are generally forested, or have been swept by forest fires; they are of least interest to mountaineers.

Class 2, rising above timber line, is of greatest and most vivid interest. The approach to the summit is, as a rule, through open park-like country, wide stretches of alpine meadow, known as alplands. Groves and clumps of umbrella-like spruce trees are dotted around, exuding a highly aromatic perfume; crystal streams flow at frequent intervals; and the brilliant hues of alpine flowers, which seem to gain in brilliancy as they gain in altitude, add glory to a scene that, on a bright sunny day, is beautiful beyond description. Quite often one or more mountain tarns of rich shades of blue or green, with a flock of ducks resting peacefully on the surface far from the haunts of man, give colour and added attraction to the scene.

These high upland meadows are the home of the Hoary marmot, or Whistler, whose shrill resounding note wakes the echoes as the traveller comes upon its native heath. Colonies of Parry Marmots, the so-called mountain gopher, are seen on the high dry spots, their little bodies standing up stiff in strong resemblance to the form that has given them the name of "Tent-peg gophers". Very occasionally one sees an enormous grizzly bear tearing up these colonies in chase of the inhabitants, who seem to furnish him with choice tidbits. Here also are seen among the rocks the Say's squirrel, that handsome red-headed chap with the white stripes along his sides, and the tiny pika, or haymaker, whose little harvest of flowers and grasses is frequently spread out among the rocks to dry. Woodland caribou peep from the edges of the timber and the Rocky Mountain Goat, disturbed by the traveller's approach, may be seen climbing the adjacent mountain slopes to a place of security.

Those who have camped at timber line in these enchanted spots have seen and enjoyed their uncommon and bizarre effects, have seen the sun sink behind the great rock masses and watched their summits become bathed in glories of gold and rose and purple until, gradually fading, they blend with shadows of night in hues of cold grey; and then the stars come out and one draws closer to the blazing fire for a last pipe in a silence broken only by the roar of a distant avalanche or the fall of rocks from the heights above. It is a magic land and one feels the thrall of the great hills as at no other time or place.

Class 3. Ridges or cols between mountain peaks may be considered as mountaineering passes when readily accessible. They are, as a rule, the ABC of mountaineering. As examples Abbot Pass, Mitre Pass and Wastach Pass may be quoted. The formation is due to the action of glaciers that have eroded their way into a mountain mass from opposite sides until only a comparatively narrow partition of rock divides them: this, in the course of time, is eaten away and a snow pass is formed. Again, in time, the snow may melt and uncover a passage over shale and broken rock.

The watershed line of the Main Range is the boundary between the Provinces of Alberta

and British Columbia, extending from the International Boundary between Canada and the United States northward to its last intersection with the 120th Meridian of Longitude, from which point the meridian becomes the boundary. From 1913 to 1924 the writer, as Commissioner representing the Province of British Columbia, was engaged on the survey of this boundary, locating and mapping the watershed and adjacent area between the points named. Thus, for a distance of some six hundred miles in direct distance the continental watershed has been mapped. The map covering this distance is in thirty-eight sheets, all or any one of which can be obtained from the Surveyor General of Dominion Lands Department of the Interior, Ottawa, in atlas form or in separate sheets. The atlas is in three parts, for each of which a charge of \$6.00 is made, and the sheets are sold separately at 25 cents each. The report of the survey is also in three parts, one of which accompanies each part of atlas, but can be bought separately at \$1.00 each.

The survey and mapping was done by the method of photo-topography which necessitated the taking of photographs from very many high mountain summits, and the locating of such photographic stations and computation of their altitudes above sea level by means of instrumental triangulation and trigonometric levelling. It will be readily understood that the work entailed a high degree of mountaineering, and many hundreds of peaks have been climbed to obtain suitable stations.

In the distance mentioned there are forty-eight passes over the Great Divide which are traversed by railways, roads or pony trails. There are many other possible crossings, but they are not used as constant lines of travel. Of the forty-eight passes referred to twenty-three have been surveyed in detail and the boundary established at their summits by concrete monuments set at the intersection of lines following the general course of the watershed. Doubtless many of our members have seen these monuments at the summits of passes when starting on their climbs, as for instance- at Tonquin Pass where the 1926 annual camp was held. Only passes of present or future economic importance have been so marked. This part of the work, which has been carried to a high standard of precision was done by Mr. R. W. Cautley, D.L.S., the Commissioner representing the Dominion Government and the Province of Alberta, whose interests in the survey were identical. A most instructive article entitled "Characteristics of Passes in the Canadian Rockies" by Mr. Cautley will be found in the 1922 issue of the Canadian Alpine Journal, Vol. XII., which deals with descriptive features of a number of the main passes surveyed and monumented by him.

In the limited space for this article it would not be possible to deal with all the passes surveyed, so reference is made to some of the more important from an alpine climber's point of view, giving a few incidents of interest in connection with them and the writer's surveys of them.

Akamina Pass

The summit lies two miles north of the International Boundary. It was originally known as Boundary Pass but was changed to Akamina (an Indian word "high bench land") after a joint astronomical station of the British American Boundary Commission of 1861 established in the vicinity. The south wall of the pass is a bold, rock escarpment, presenting a series of very striking semi-circular amphitheatres, enclosing a number of charming mountain lakes, Cameron Lake, Forum Lake and Wall Lake, the two last being! very aptly named, for the horizontal strata forming these two cirques give the impression of tiers of seats in an old Roman stadium. The altitude of the pass is 5,835 feet above sea level and its summit is covered by forest growth. The United States Glacier Park lies on the south side of the International Boundary. A good waggon road led across the summit to oil borings about six miles down on the British Columbia side. This road is now a

part of the International Highway connecting Waterton Lakes Park with Glacier Park.

Quite close to the intersection of the watershed stands a monument of the International Boundary, No. 272, an iron post five feet high, cemented in the solid rock. These posts are set at intervals of from one to three miles along this portion of the boundary. The one referred to is a short distance from the edge of the escarpment and, looking over, I saw far below on a grassy ledge a flock of mountain goats with their kids, grazing peacefully. It is a peculiarity of mountain goats that they are indifferent to sounds above them, while they flee rapidly from possible danger from below. I could not resist the temptation, so, choosing a suitable rock, I sent it over the edge, to crash down the cliffs to the ledge, where it struck quite close to the goats. They leaped in every direction and ran to and fro excitedly, but bunched together again, assuming the falling rock was a natural occurrence. A second rock sent them off helter-skelter from such an unstrategical position.

A day or two later, while traversing the crest of the escarpment, I climbed a rock rib that barred the way and, stepping over the crest, almost collided with a brown bear coming up the other side. He was so surprised that he leaped backwards and, losing his balance, rolled over the edge of a long grassy slope. The impetus was so great he could not check and went down the slope, head over heels, in a series of Catherine wheels for several hundred feet to the bottom where he landed in a heap. He shook himself, looked up in a sheepish sort of way and took to the bush. Deer were everywhere in the woods, and one was photographed browsing amongst the tents of Mr. Cautley's camp. A grizzly was seen trying to tear down a monument. He sat on the concrete base and, grasping the zinc-covered pedestal with his forepaws, endeavoured to wrench it off, failing in this he bit it, leaving deep tooth marks in the metal covering.

Crowsnest Pass

When surveying and monumenting the Interprovincial Boundary across passes of the Great Divide it has been the practise to include the distance between the rock escarpment on one side to the rock escarpment on the other. This has varied considerably the length of boundary line established. The Crowsnest Pass should, under such practise, be more properly spoken of as the Crowsnest system of passes, for it embraces a considerable slice of the coal-bearing area of the Elk River trough and, between its bounding rock escarpments, includes four distinct valley crossings of the Great Divide, viz: Ptolemy Pass, Tent Pass, Crowsnest Pass (proper) and Phillipps Pass. The distance from where the boundary line leaves the limestone of the Flathead Range on the east to where it meets¹ that of the High Rock Range on the north is approximately thirteen and a half miles. Within this distance the watershed passes through a variety of conditions: forest, brule or burned timber and open grassy alp-lands, veritable alpine flower gardens, a blaze of many coloured glory during the summer months.

Ptolemy Pass—The most southerly pass of the system is Ptolemy. It is so called on account of the resemblance of the outline of the mountain which dominates the pass to a recumbent Pharaoh. In 1900 the writer made a photographic survey of the Crowsnest coal area for the government. Seated on a ridge opposite the mountain one day, it dawned upon me that the outline resembled the bust of a sleeping mummy and the mountain was so named. The resemblance will be seen if the accompanying illustration is turned half way round to the left. Later, in 1914, when it was found that the watershed passed over the mountain the name of Mt. Ptolemy was conferred upon it as being more dignified, and the pass of the Great Divide at its base was christened Ptolemy Pass.

Crowsnest Pass—The summit has an altitude of 4,453 feet above sea level. The approach from the east is highly picturesque. Crowsnest Lake and Island Lake are on this side and present

charming sheets of blue water. It is the route of the south line of the Canadian Pacific Railway to Kootenay Lake and Nelson. On the north side of Crowsnest Lake is a cave in the mountain side from which a rushing torrent, fed by subterranean drainage, flows beneath the railway bed to the lake beside it. This is the extreme source of Crowsnest River. Crowsnest Mountain, 9,138 feet in altitude, stands out an isolated massif, rising in terraces and resembling a huge fortress, some seven miles north of the eastern entrance to the pass.

There is a legend that a party of Crow Indians were attacked by their enemies the Blackfeet from the plains; retreating to the mountain, they were there besieged and killed. The mountain is first shown on Palliser's Map of 1863 as "The Crow's Nest." White's "Place-Names in the Rocky Mountains" has the following: "Crowsnest; mountain, Alta.; translation of Cree Indian name Kah-ka-ioo-wut-tshis-tun; does not commemorate the slaughter of Crow Indians by the Blackfeet when they got them in a corner or 'nest' as set forth in local tradition, but merely the nesting of crows near the base of the peak In a map accompanying Palliser's preliminary report, it is named "Lodge des Corbeaux."

Phillipps Pass— is the most northerly one of the Crowsnest system. It is referred to by Mr. Cautley in his article in the 1922 Journal, page 159. The chief feature is a small tarn at the summit which is enclosed by two ridges, about a mile apart, rising eighty feet above the bed of the tarn. The eastern ridge is 1.7 feet higher than the western. There is no visible outlet to the tarn. This condition created a problem for delimitation of the watershed. At that time the Dominion Government was represented by a separate Commissioner, Mr. J. N. Wallace, D.L.S., an office subsequently merged with that of the Alberta Commissioner. The Dominion and Alberta Commissioners held that drainage from the tarn was subterranean and flowed by means of the stream from the cave, referred to above, to Crowsnest Lake, thus placing the watershed on the western, or lower, ridge. The British Columbia Commissioner held that the line of watershed could only be determined by surface indications, for even if there were subterranean drainage from the tarn it would be impossible to say where it flowed beneath the surface, and as the eastern ridge was the higher the watershed lay there. It was a difficult point to decide and a deadlock ensued. The issue seemed to rest on proof of subterranean flow from the tarn to Crowsnest Lake and a suggestion was made to place aniline dye in the tarn and observe if coloured water came out from the cave. This, of course, was absurd and some years later the problem was adjusted by placing the boundary line across the centre of the tarn and giving each Province half of the disputed area.

Mr. Cautley experienced trouble at one part of the Crowsnest Pass survey owing to two bears, who would tumble sacks of cement into the holes dug for monument bases, scatter gravel used for concrete and, on one occasion, dragged a full sack of cement more than a quarter of a mile through the woods. It seemed a protest by the denizens of the mountain wilderness against the invasion of their sanctuary.

North Fork and Tornado Passes

Next in sequence northward comes North Fork Pass, referred to by Mr. Cautley in his article in the 1922 Journal as an example of a rock-strewn pass whose summit is a mere ridge of slide rock which centuries have succeeded in clothing with timber.

Tornado Pass, 7,096 feet in altitude, is of greater interest. Its summit lies between bold rock escarpments, embedded in huge slopes of talus. Tornado Mountain, 10,169 feet in altitude, rises directly above the summit on the east side in towering precipices. Similar precipices rise to the crest of a lower unnamed peak on the west side. Between the walls of this giant gateway the aspect

is truly alpine. The south approach is particularly attractive; meadow-like, flower-clad glades, in which flow little crystal streams, interspersed with open belts of graceful spruce and larch trees charm the eye. The pass summit is most picturesque and grandly impressive in its surroundings. The precipices of Tornado Mountain rise fully 2,500 feet; gigantic rock buttresses stand out, separated by huge cavernous chimneys and the general effect is awe inspiring. The western wall, though a thousand feet lower, is hardly less impressive.

Tornado Mountain is the loftiest summit of the High Rock Range. It has been locally known as Gould Dome and is undoubtedly the peak upon which Capt. T. Blakiston of the Palliser Expedition conferred the name. The name, however, has been changed by the Geographic Board of Canada to Tornado Mountain and Gould Dome transferred elsewhere. The present name is certainly appropriate for it is a storm centre. On the occasions of two ascents the party had narrow escapes. On the first occasion a cloud burst, accompanied by sheets of hail caused the mountains to run wild. I had never seen anything like it before. The party made the ascent in bright sunshine, so fine that coats were left behind. Observation and photographic work completed, we had just started the descent when a roar was heard far below and a dense cloud gradually rose until we found ourselves in a fierce hail storm. We crouched at the base of a rock cliff while hailstones as large as marbles pelted our almost bare backs. Fortunately I had a rucksack on mine. Then stones began to whiz by dangerously close. A steep ice slope lay before us. As the slope was no more exposed than where we were and action was imperative to keep from freezing we descended amidst whizzing rocks to a ledge where there was more leeway and then looked around. In the morning the face of the mountain had been practically dry now, torrents of water were cascading down the slopes in every direction. Masses of rock and ice were avalanching on all sides and the continuous roar and crash was deafening. And then the sun came out and shone brightly again, the din gradually diminished and it was soon all over. It was a first experience of a mountain running wild and an apt illustration of the mighty forces at work in these desolate places.

The day but one following we again ascended to the summit of the peak and were working steadily in bright sunshine. A distant clap of thunder drew attention to a rapidly advancing storm cloud, rent at intervals by vivid forked lightning. "Boys," I said, "here is where we get off the top" We descended some thirty feet to a shelf and crouched down. In a few moments the peak was the centre of a fierce electrical storm. A bolt struck within forty feet of where we crouched and sent rock fragments into the air. Another struck farther away with similar effect. One of the assistants, sitting on the shale, suddenly leaped up, clapped his hands behind and exclaimed, "Oh Lord!" It was easy to know what happened for the whole top of the mountain had been charged with electricity and each one received a severe shock from contact. Crash followed crash and at each lightning stroke a severe shock was felt. It seemed that some, if not all, of the party would be killed. And then the cloud passed, the sun shone and all was well again. Doubtless many have experienced an electrical storm when the cloud is close, directly overhead; now imagine the feeling if in the very centre of the cloud, with concussions going on all around! I had one other similar experience of a thunder storm when accompanied by a fearful wind. The whole top of the mountain shook and seemed to rock to such an extent that I fully expected it to topple over into the depths below.

Tornado Mountain is well named, for each day during our stay, at about the same time, a similar storm appeared to envelope its summit. On one such occasion, while on a peak across the valley, a wonderfully vivid double rainbow encircled Tornado Mountain which showed up in its centre as a black silhouette against a dark background of cloud. The rainbow was a complete circle, only cut off at the extreme base by the ledge on which we stood. The effect was most

striking and weird.

Elk Pass

The Elk Pass divides the headwaters of Elk River flowing south and west to the Kootenay and one of the sources of Kananaskis River flowing north to Bow River. The summit is of a peculiar formation, divided into two passages by a low, heavily-timbered ridge. The eastern summit is 6445 feet in altitude and the western 6205 feet. Both are flat and marshy.

South of the divide, at the head of Elk River, are the picturesque Upper and Lower Elk Lakes. The first is a most attractive sheet of water, over a mile long. It lies at the mouth of a magnificent cirque and receives the flow from three spectacular icefalls: Elk Glacier, Castelneau Glacier and Petain Glacier. Surrounding the cirque are Mt. Aosta, 9790 feet, Mt. Nivelles, 10,620 feet, Mt. Castelneau, 9800 feet, Mt. Joffre, 11,316 feet, Mt. Petain, 10,400 feet, Mt. Foch, 10,316 feet and Mt. Fox, 9752 feet. This cirque is well worth a visit and the peaks worth climbing. There is a good camp ground at the head of the lake. Mt. Fox dominates the summit of the pass on the west side. Its outlying eastern shoulders enclose Frozen Lake which is covered by ice for the greater part of the year.

At the northern entrance to Elk Pass, some five miles from the summit lie the Kananaskis Lakes, which may be seen from the summit of Mt. Fox as on a map. The lower lake is renowned for its fine fishing and trout up to fifteen pounds may be had. The upper lake is one of the most beautiful, of a glorious blue, studded with little timbered islands. Nestling below the towering rocks precipices of Mt. Serrail, 10,400 feet in altitude, on a bright summer day, it is a thing of beauty and of joy. The pony trail to Kananaskis Passes leads westward from between the two lakes, following the north shore of the upper one.

While at Elk Pass we experienced a phenomenon occasionally seen by climbers, viz: rising above a belt of clouds which blotted out the lower landscape. The effect was spectacular and weird; it gave the appearance of an expanse of ocean bound by a bold, mountainous coastline, against which the clouds broke like waves upon a rocky shores. Capes and headlands stood out; islands rose from the mysterious depths; bays and inlets opened to unknown interiors; and the shifting clouds gave this spectral inland sea the impression of movement and reality. Below in the depths, Mr. Cautley could be heard shouting to his men as he endeavoured to run his lines in the thick fog; not far above, in the clear blue, we were enjoying the mystic scene, and Mr. Cautley's discomforture.

There are two Kananaskis Passes, known respectively as North and South. They are separated by the heights of the Mt. Beatty massif, 9841 feet. Kananaskis Pass first appears on Palliser's map, published in 1863. It was so called by Capt. Palliser after the name of an Indian who was his guide, of whom there is a legend giving an account of his most wonderful recovery from the blow of an axe which stunned but failed to kill him. (Palliser's Report, p. 93, August 17th, 1858). Capt. Palliser evidently crossed the Divide by the north pass, for he does not make any mention of the south one and his description tallies more closely with the northern route.

There is a faint trail leading to the summit of the south pass, altitude 7439 feet, but there is no evidence of travel beyond. The writer took a pack train through to Palliser River at the mouth of Le Roy Creek in 1916, but the passage was only made possible by means of a great snow-slide, across which the horses were led, which bridged a very steep drop off. The chief features are Three Isle Lake, a picturesque sheet of water, and the splendid view of the Royal Group, across Palliser River valley, from the summit of Mt. McHarg, 9,476 feet. My most vivid impression is of being

held up, with very inadequate camp protection, for two days while it snowed to a depth of two feet in the month of August.

The North Kananaskis Pass is 7682 feet in altitude. The 1922 camp of the Alpine Club at Palliser Pass and the outlying camp at this pass, together with the reports in the Canadian Alpine Journal, have given our members a good knowledge of them. The very spectacular scenery of the North Kananaskis Pass and the excellent climbing furnished by the British Military Group is fully recognized. In addition the beautiful park-like setting, carpeted with pink heath and white heather, and the unique feature of the Turbine Canyon and Gorge, presenting six natural bridges in the distance of a mile, make it a most attractive centre. Those who have visited it will not easily forget the delights of the corkscrew trail descending from the summit of the pass to Le Roy Creek.

Palliser Pass summit has an altitude of 6,836 feet. Scenically, it is very fine and is dominated by the massif of Mt. Sir Douglas (Haig) 11,174 feet in altitude, of which the first ascent was made during the 1922 Camp, pitched beside the beautifully picturesque Belgium Lake. It divides the water of Palliser River flowing south and Spray River flowing north, and gives access to the Royal Group of mountains by way of the Palliser River Valley.

White Man Pass

The summit lies at an altitude of 7,112 feet above sea level. Northward its waters by way of White Man Creek join Spray River and southward the waters of Cross River flow to the Kootenay. White Man Pass is the direct line of travel across the Main Range between the Bow and Columbia River valleys. The summit is a rocky open-timbered ridge a mile long. At the apex it stands up a well-defined barrier of rock about a hundred feet wide and, in such respect, is quite distinct from the open, meadowland summits of the majority of major passes.

The pass early became historical for in 1845 the Reverend Father J. P. DeSmet travelled from the Columbia River by way of this crossing to visit the Indians of the Bow River valley. At the Divide he erected a cross which he refers to as the "Cross of Peace" in his book, "Oregon Missions and Travels over the Rocky Mountains in 1845-6". The well-known guide and explorer of early days of Canadian Pacific Railway construction, Tom Wilson of Banff, stated to the writer that he had found at the summit of the pass what seemed to him to be relics of this cross. The mountain dominating the pass immediately northwest of the summit is a very distinct red mass and has, in consequence, been named Mt. Red Man while the one on the opposite side of the depression, which is snow-clad, has been named Mt. White Man.

When camped here, marking the boundary across the summit, Mr. Cautley had a most interesting experience: a fierce thunder storm, accompanied by a deluge of rain was in progress. He and his assistant had taken refuge in their tent. Suddenly came a vivid flash of lightning, instantly followed by a roar and blinding glare close by. Leaping out, they saw that a dry spruce tree within fifty feet had been struck by lightning and was seething skyward in a pillar of flame. It was very shortly extinguished by the torrents of rain, but it furnished a striking example of the way in which forest fires are started through natural causes. To one who travels much in the mountains it is a wonder how such fires have occurred in most unlikely places for human travel, and there is little room for doubt that lightning has been the agency. Indeed, while on the top of mountains, I have seen two such fires start from that cause.

The great massif of Mt. Assiniboine, 11,780 feet in altitude, rising a clear thousand feet above its group of attendant peaks, has always, since its discovery, held a special charm for mountaineers and Nature lovers, due to its spectacular combination of rock peak, glimmering

icefield and the many gem-like lakes of varying shades of rich blue and green that surround it on all sides. The two routes from the east by which it is approached: Assiniboine Pass, with a summit altitude of 7152 feet and Wonder Pass, 7850 feet are both passes of the Great Divide.

Much could be written about this central climax of mountain scenery and its wide-spread alpine meadowlands and groves of golden larch, but it has become well-known through the writings of W. D. Wilcox, Sir James Outram and others. Wilcox's description and magnificent photographs of the first attempt of the mountain and Outram's story of its conquest have created history. The camp of the Alpine Club in 1920 further added to a general knowledge of the region, at which time the peak was first ascended by lady climbers, as recorded in the Canadian Alpine Journal.

These, and subsequent literature have spread abroad the fame of this very wonderful region. There is, however, one curious feature to which I should like to refer, viz: all the drainage from the icefield and glaciers of the north face of the Assiniboine Group flow to Lake Magog, a charming sheet of water at the base of the great massif. From this lake there is no surface outflow, although a stream of large size might be expected. It would be thought that the Simpson River valley, which trends northward parallel to the watershed would be the natural bed of such a stream, and yet for seven miles down this valley there is no distinct drainage flow. At that distance strong springs appear and, from then on, the flow of Simpson River is of considerable volume. The valley bed for the greater part of this dry stretch is a wild confusion of piled up masses of rock of quaint form and great size, many of them weighing hundreds of tons. So wild and desolate is the rock-filled valley that it has been named the "Valley of the Rocks." It would seem that at some bygone age a powerful agency had filled the valley floor with these broken blocks, hurled from the confining limestone masses. By what agency can be only guessed at, but it is considered that seismic disturbances similar to or the same as those suggested as the origin of block, or "bear-den," moraines may have been the cause. The theory is somewhat assisted by the deep scars and cracks that are to be seen in the valley floor at sundry places close to the mountain sides. As one travels along the thin twisting trail between the huge fragments one cannot but wonder at the mighty forces at work in these places of primeval desolation, tearing down the mountains and reducing them to fertile areas for the reception of forest growth.

Beyond the Valley of the Rocks, at the foot of a steep hill, lies nestling beneath towering heights the picturesque little meadow that gives the name to "Golden Valley". Late one September the writer blew in with a pack train. The horses were hard put to find enough to eat and as they stood knee deep in the yellow grasses the name of Golden Valley seemed apt. Twice since, I have seen the little meadow a lake of glorious blue, with water ten feet or more in depth covering its surface. When the valley is normal there is a beautiful, clear, cold spring in its midst. What causes the spring to increase its flow and turn the valley into a lake is a matter for surmise.

To travellers from the west, Citadel Pass is well remembered by visitors to Mt. Assiniboine by reason of the steep hill of 2000 feet which is a simple matter to descend but quite a different one when going in the opposite direction.

Simpson Pass

The summit of Simpson Pass is at an altitude of 6914 feet. Northward the water flows to Bow River and southward to the Kootenay. The first recorded crossing was made by Sir George Simpson, Governor in Chief of the Hudson's Bay Company in 1841. His name and the date of his crossing were carved on a tree at the summit of the pass but are no longer to be seen the tree having been cut down and the carving taken away. This historical record belongs to Canada and should be

preserved in a national museum.

The summit and vicinity is a beautiful alpine area with numerous gem-like lakes scattered amidst groves of golden larch, the whole (dominated by the mass of Monarch Mountain. Some five miles from the summit down the valley of Healy Creek, the northern approach, is a remarkable occurrence : a sharp limestone peak on the south side of the valley rises, a great slab of rock. Two hundred feet below its crest there is a hole right through it, which is referred to by Sir George Simpson in the story of his travels as the "Hole in the Wall." Several years ago a party from the Alpine Club of Canada climbed to it and reported it to have a diameter of twenty to thirty feet. Seen from below it looks like a snowspot, but gazed at for a while the clouds may be seen sailing across it. On the north side of Bow River not far from Banff there is a cave in the mountain side which is pointed out to travellers as the "Hole in the Wall." There is little doubt that the one on Healy Creek is that so designated by Sir George Simpson.

Vermilion Pass

The name is due to Vermilion River, which has its main source on the south side of the summit of the pass. The altitude is 5,376 feet. Some six miles southwest, in the valley of the river, are mineral springs of which iron oxide is the strongest component. The deposits from these springs have formed ochre beds of yellow, orange and red colours, which have been used by the Indians to get material for war paint and other decorative purposes. That they were extensively used is shown by the remains of old teepee poles scattered about in close proximity to them, showing that many Indians had camped there. It is likely that the Vermilion River derived its name from this feature.

In 1858, Dr. James Hector, geologist to the Palliser Expedition, made the first recorded crossing. Now, it is notorious as the route of the famous Banff-Windermere motor road connecting with the highway to the International Boundary at Kingsgate and that to Kootenay Lake.

Kicking Horse Pass

Between Vermillion Pass and Kicking Horse Pass are two passes of the Great Divide well-known to alpine climbers: Wenkchemna Pass, 8,521 feet, leading from the Valley of the Ten Peaks to the head of Prospectors Valley, directly opposite the Eagle's Eyrie, and Abbot Pass, 9,588 feet between Lake O'Hara and Lake Louise. They belong to the class of mountaineering passes.

Kicking Horse Pass, 5,339 feet in altitude is famous as the crossing of the Great Divide by the trans-continental line of the Canadian Pacific Railway. The high, ice-hung mountains which border the pass on both sides of the summit, the rushing, glacier-fed torrents, the blue waters of Wapta Lake and the deep, dark gorges of the Kicking Horse River combine to yield a climax of scenic splendours that cannot be surpassed. The easy grade of the eastern approach to the summit is in distinct contrast to the very steep ascent of the western approach. It is known as the "Big Hill" and in the early days of the railway two and often more engines were needed to push the trains up it, and the writer has seen as many as five engines on one train. Now, two loop tunnels, one 3,200 feet long and the other 2,800 feet long, carved respectively in the rock bases of Cathedral Mountain and Mt. Ogden, have reduced the grade and much lightened the work. The very erratic course of the road-bed in the upper gorge, crossing from one side of the valley to the other, causes the same scene to appear first on one side and then on the other to the confusion and amusement of travellers on the trains.

The pass was discovered by Sir James Hector in 1858. It is named after the river which, in turn, received its name owing to the fact that at one of his camps in the pass a horse kicked Sir

James and thereby delayed the party, which nearly starved through lack of game on which it was dependent. On the trains some indistinct markings on the cliffs of Mt. Field, not far from the village of the same name, are pointed out to travellers. These, by a long stretch of the imagination, are supposed to resemble a kicking horse. Such origin is altogether erroneous, that previously given having been recorded in Hector's journal. A handsome granite monument to Sir James Hector, perpetuating his discovery of the pass, has been erected at the summit beside the railway. It was erected by friends and admirers in Canada, the United States and England.

Directly behind the Canadian Pacific Railway authorities have placed an artistic sign marking the Great Divide. Beneath it the waters of a stream are divided by two concrete channels, one flowing east to the Atlantic and the other west to the Pacific Ocean. Naturally the stream flows eastward, but it flows so close to the watershed—within ten feet—that it was a simple matter to divert it to flow both ways, and so to furnish a realistic presentation of the division of the waters.

Kicking Horse pass, which is many miles in length, is remarkable for its climax of scenic efforts and for the many fine massifs that line the approaches to its summit: Pilot Mountain, 9,690 feet; Storm Mountain, 10,372 feet; Mt. Temple, 11,636 feet; Mt. Victoria, 11,365 feet; Popes Peak, 10,376 feet; Cathedral Mountain, 10,464 feet; Mt. Stephen, 10,495 feet; Mt. Vaux, 10,891 feet and others. These fine peaks are well known to Alpine climbers through muscular endeavour that has enabled them to stand on their snow-clad summits, often above the clouds, and gaze afar on oceans of peaks, hazy blue valleys and forest girt lakes of wondrous blues and greens.

Passes Between the Canadian Pacific and Canadian National Railways

There are nine trail passes between the two continental lines of railway, including the Yellowhead Pass which is the route of the Canadian National Railway. Of these six are worthy of note, viz: Howse Pass, 5,020 feet in altitude; Thompson Pass, 6,511 feet; Fortress Pass, 4,387 feet; Athabaska Pass, 5,736 feet; Tonquin Pass, 6,393 feet; and Yellowhead Pass, 3,711 feet. All of the above except Thompson Pass have been monumented. They are of historical or great scenic and alpine interest, but to deal with them, even lightly, would require more space than is at my command, so I must pass them by with a bare reference.

Howse Pass was discovered by David Thompson, official geographer and explorer to the Northwest Fur Trading Company, in 1807. It is named after Joseph Howse, an official of the Hudson's Bay Company, who crossed it in 1810. In 1871 it was explored by Mr. Walter Moberly, district engineer, as a route for the Canadian Pacific Railway, but was abandoned in favour of Yellowhead Pass, which in turn was rejected in favour of Kicking Horse Pass. There are a number of fine peaks in the vicinity of the summit, of which Howse Peak, 10,600 feet dominates it on the east side. The pass gives access by the Blaeberry River route to the Freshfield Icefield and the array of splendid ice-clad massifs surrounding it. The icefield is unique in the magnificence of its snow accumulations and broken icefalls. (See Thorington's article in the 1923 issue of the Canadian Alpine Journal, p. 64.)

Thompson Pass is reached by Alexandra River, a tributary of the Saskatchewan. The summit is most spectacular, Mt. Bryce, 11,507 feet in altitude, towering above it on the north and Mt. Spring Rice, 10,745 feet on the south. Many large glaciers are on all sides and directly north lies the Columbia Icefield which, with its various ramifications, covers an area of some 200 square miles and is the birthplace of three mighty rivers, the Saskatchewan, the Athabaska and the Columbia. The icefield is dominated by Mt. Columbia, 12,294 feet, the second highest peak of the main range. The pass was crossed and an attempt made to take a pack-train down Rice Brook

valley to Bush River but, owing to impassable canyons below Mt. Bryce the attempt had to be given up. The first and only ascent of Mt. Bryce was made by Sir James Outram in 1902. The account given in his book, "In the Heart of the Canadian Rockies" is thrilling.

Fortress Pass divides the waters flowing east by the Chaba River to the Athabaska and west from Fortress Lake by the Wood River to Columbia. The distinctive feature is Fortress Lake, a fine sheet of water extending westward from the summit of the pass for six and a half miles. South, the summit is dominated by Mt. Quincy, 10,400 feet, and north by the towering precipices of Fortress Mountain, 9,908 feet, which has given the name to the pass and lake. The mountain was so called by Dr. A. P. Coleman who explored the vicinity in a search for Mts. Brown and Hooker in 1892. (See "The Canadian Rockies, New and Old Trails" p. 148, by A. P. Coleman.) The trail along the north side of the lake leads for a distance down Wood River valley and gives access to the Clemenceau Ice-field and Mt. Clemenceau, 12,004 feet. See Canadian Alpine Journal, 1924, p. 18, article by Henry B. de Villiers-Schwab). The pass is described by Mr. Cautley in his article in the 1922 Canadian Alpine Journal. He says that, considered technically, it is the most extraordinary of all the passes of the main divide.

Athabaska Pass is the crossing of the Great Divide used by the Northwest and Hudson's Bay Fur Trading Companies when travelling to and from their headquarters at Fort Edmonton and the Columbia River hunting and trading grounds. A goodly part of the route from Edmonton lies in the valley of the Athabaska River, hence the name which is somewhat of a misnomer, seeing that the last two days of the route to the summit is up the valley of Whirlpool River, at the head of which the summit lies.

In his article in the 1922 Journal, Mr. Cautley tells of the discovery by one of his men, in August, 1921, of 114 deeply corroded musket balls a short distance north of the summit of the pass. Research by Mr. Cautley established the fact that the find must have been the remains of a bag of bullets lost by David Thompson when crossing the pass in January, 1811, one hundred and ten years previously. Two of these bullets are now on exhibition at the Alpine Club House, Banff. The pass summit has been immortalized by the botanist, David Douglas, through his discovery and naming of the mystery mountains "Brown" and "Hooker," which are shown respectively as 16,000 feet and 15,700 feet on a map issued with Hooker's "Flora Boreali-Americana" in 1829, and have since been the cause of a number of expeditions to locate them. The Boundary survey definitely located these two mountains as nearly as possible in accordance with Douglas' report and found the altitude of Mt. Brown to be 9,156 feet and Mt. Hooker to be 10,728 feet (see article by A. O. Wheeler in the 1922 issue of the Canadian Alpine Journal, p. 163). Previously, Dr. Coleman had established the altitude of Mt. Brown at 9,050 feet; see his book referred to above.

Bush Pass, lying between Howse and Thompson Passes is quite unimportant. It is a mountaineering pass with summit altitude of 7,860 feet, and yet it is the one that is most deeply engraved on the writer's memory owing to the following incident: A climbing party under the guidance of Mr. A. J. Campbell, Mr. Wheeler's chief assistant on the work of the boundary survey, made the ascent of Coronation Mountain, 10,380 feet in altitude, by a route both difficult and dangerous and completed the work at the summit. Descending, it became necessary to lower the other members of the party by a rope down a bad piece of cliffs. A rucksack contained a small satchel in which was the field-book of the survey. The man carrying the rucksack took it off to be lowered separately and while gathering up the rope for such purpose placed the sack upon a too narrow ledge. As he removed his hand it slipped off and fell swiftly downward, struck the ledge on which he was standing and bounded out of sight. Climbing down it was nowhere to be seen.

For two days, in pouring rain, every possible spot was searched without result. Only one conclusion was probable: Bounding off the ledge, the rucksack must have fallen into a narrow gully with a steep incline. Across the mouth of this gully flowed a mass of ice with a large hole directly opposite to it. It could only be supposed that the rucksack had rolled down the gully and into the hole. Mr. Campbell lowered a weighted rope for one hundred and fifty feet through the hole and found that the steep incline continued beyond that distance. There was no possible way of ascertaining where the rucksack had gone to and, owing to the loss, much work had to be done over again, as the instrumental readings giving direction to the photographs taken at a number of stations, several most difficult of access, had been lost with the field-book.

It is a general impression that a grizzly bear will attack on sight at close quarters. The writer had an interesting assurance to the contrary at this little pass. We were trying to take a pack-train to the British Columbia, or western, side and I had gone ahead to ascertain the possibilities. A few small glaciers were grouped at the summit of the pass and a morainal bed extended for a mile down the eastern approach. A long narrow strip of snow paralleled the moraine on the north side, about 150 feet from where I sat on a rock studying the surroundings. As I turned, I saw a grizzly coming down the snow, evidently just come over the pass, as footprints seen later showed. He had not seen me so I sank down among the rocks, wondering what was the proper etiquette if attacked by a grizzly with only an ice-axe for a weapon of defence. He came along, a happy little smile on his face, his tongue lolling out, and probably thinking of new happy hunting grounds. The wind was blowing directly across and he had not yet reached the line of scent. Suddenly he stopped dead, put his nose up and sniffed vigorously. Taking a step forward he doubtless got it full force, for he turned as on a pivot and gazed directly at where I lay. I doubt if he saw me. At any rate after a few moments gaze he turned sharp round and went off at full gallop, much to my relief, and was still going when I got my glasses on him half a mile away. He was a big fellow and I felt thankful as I should have had decidedly the worst of an encounter.

Tonquin Pass has two summits separated by Tonquin Hill, 7861 feet, from which a glorious view is obtained of the Ramparts, Mt. Fraser, 10,899 feet (Simon Peak) and Amethyst Lake. The encircling panorama from this central point is one of the finest to be had in the entire system. The southern summit, Moat Passage, is 6,393 feet in altitude, and the northern, Vista Passage is 6,834 feet. Moat Passage is dominated by the towering heights of Bastion Peak, 9,812 feet, a huge natural obelisk or rock at its highest point marking the crossing of the Great Divide. Close beside it are Turret Mountain, Mt. Geikie, 10,854 feet, and Barbican Peak, all well known to those climbing at the 1926 Camp of the Alpine Club of Canada. The camp has made known this wonderful climax of scenic splendours to the Club's members who attended it (see current issue of the Canadian Alpine Journal).

Yellowhead Pass is the route of the Canadian National trans-continental line of railway. Its summit, 3,711 feet in altitude, is the lowest crossing of the Great Divide on the boundary between the two provinces. Originally selected as the route of the C.P. Railway, it was rejected in favour of the Kicking Horse Pass, owing to the attractions offered by the magnificent wheat-growing areas of southern Alberta. In the early days this pass was used by the fur trading companies to reach the headwaters of the Fraser River, but was abandoned owing to difficulties of the route. It is a timbered pass and, on the western side, Yellowhead Lake is most picturesque. The summit of the pass is dominated by the outstanding heights of Mt. Fitzwilliam, 9,538 feet, and the peaks of Yellowhead Mountain on the opposite side of the valley. Some forty miles down the Fraser Valley the great massif of Mt. Robson, 12,972 feet, a huge, dome-shaped mass, is the most striking feature



Interprovincial Boundary Survey

Monument Erected at Summit of Robson Park



Interprovincial Boundary Survey

Gravel Flats at Head of Howse River - Survey Cairns in Foreground

of the pass. While the scenery at the summit is interesting, it does not compare with the alpine magnificence of the Kicking Horse Pass.

Robson Pass

Between Yellowhead Pass and Robson Pass lie four crossings of the Great Divide, viz: Miette Pass, 6,450 feet, Grant Pass, 6,356 feet, Colonel Pass, 6,135 feet, and Moose Pass, 6,570 feet. Of these, Miette Pass is the most attractive, owing to the wide circle of rugged out-standing peaks by which it is surrounded and the broad park-like alplands within. There are three passages, separated by comparatively low ridges. This circle of peaks and the beautiful interior would furnish a most pleasing and enjoyable site for an Alpine Club Camp. It could be reached in one long day from Yellowhead Pass.

Robson Pass, 5,440 feet in altitude is one of great technical interest owing to the fluctuations of the watershed. The fact that Mt. Robson is the highest massif of the Main Range and as such has always been of superlative attraction to mountain climbers, and also the fact that Robson Cirque, the birthplace of the Robson Glacier, is a climax of piled up ice and snow of unsurpassed grandeur, have spread abroad its fame and made it an objective for pilgrims from all over the world. Ever since the first attempts to make the ascent by Dr. A. P. Coleman, L. Q. Coleman and Rev. G. B. Kinney in 1907 and 1908 (see thrilling narrative by Rev. G. B. Kinney, Canadian Alpine Journal, 1909, vol. II., p. 1), also the magnificent ascent made by Kinney and Curly Phillips in 1909 when, after a number of desperate attempts during which they took unheard of chances of losing their lives they stood upon the crest of the mountain and only the fact that it was wrapped in storm clouds prevented their reaching the highest point, the greatest interest has been displayed, climaxing in the first ascent of the mountain by ladies of the Alpine Club of Canada at its 1924 camp.

The summit of the pass is a broad gravel flat created by the flow and recession of the ice of the Robson Glacier. On either side is a gloriously blue mountain tarn. Berg Lake, on the west side, has an icefall from the very summit of Mt. Robson discharging into it. From this great cataract masses of ice come crashing down into the lake and send water spurts high into the air, filling the surface with floating baby icebergs. Robson River flows from it to the Fraser and so to the Pacific Ocean. On the other side of the summit Lake Adolphus is charmingly picturesque and drains to the Smoky River flowing to the Arctic Ocean.

The broad morainal flat at the summit of the pass is so nearly of a level that the outflow from Robson Glacier has been known to change the line of watershed. At one time it is reported to have sent all its flow westward to Berg Lake, at another eastward to Lake Adolphus, and again to have divided, sending part east and part west. This fluctuation of drainage left the position of the watershed an unknown quantity, but the glaciers of the Rockies have been receding so rapidly of recent years that Nature has solved the problem: The receding ice has uncovered a rock rib at the front of the mass which now acts as an embankment to send the drainage flow permanently westward and, unless a radical change of climatic conditions should ensue and very considerably advance the ice, thereby covering over the rock rib, the direction of the runoff appears to be settled. By this decree of Nature Mount Robson is not a peak of the Great Divide and together with Robson Glacier lies wholly in British Columbia.

Those who attended the Robson Camp of the Alpine Club of Canada in 1924 were present at the erection of the final monument placed to commemorate the close of the boundary survey between the provinces of Alberta and British Columbia. In addition to the members of the Alpine Club, representatives of the Dominion and Provincial Governments were present, as well as

officials of the Boundary Commission.

The ceremony was an impressive one. The towering magnificence of the mighty snow-clad mass of Mt. Robson, rising directly overhead, gave solemnity and dignity to the scene. The surroundings were certainly unique: The great mountain whose crest, golden in the fitful sunshine and then obscured by passing clouds, was a mile above us; close by the glorious blue waters of Berg and Adolphus Lakes; all around wide-spreading snow-fields and tumbling icefalls enclosed by precipitous rock ramparts; the crowd of picturesquely garbed mountain climbers, men and women, assembled about the monument which occupied the centre of a broad, bare shingle flat; all this brought vividly home to us the magnitude of the works of Nature at their origin and the wonderful heritage we possess in this mountain wilderness of unsurpassed grandeur. The word was given. The Canadian Ensign fluttered from the unveiled monument and it stood exposed to view, to bear witness to the work that had been accomplished, a work entailing years of mountain climbing and exploration, much hardship, great endurance and useful results in the form of a graphic illustration that will for all time be of benefit to those who follow after.

The monument did more than memorialise the boundary survey. On the Alberta side an inscription plate recorded the name of the late Dr. Edouard Deville, I.S.O. who for forty years had been Surveyor General of Canada and under whose direction the work of the boundary survey had been carried on since its inception in 1913; a man and a scientist, to whom Canada owes most largely her magnificent system of land surveys, and also the introduction of the method of phototopographical surveying, a method so well suited to her mountain areas and so successfully carried out in mapping them. It is fitting that his name should be on record at a place where their grandeur reaches a superlative climax.

Early exploration and ascents of Mt. Robson and vicinity will be found in the 1909, 1910 and 1912 issues of the Canadian Alpine Journal, Vol. II., Nos. 1 and 2 and Vol. IV.

North of Mt. Robson are a number of trail passes of the Great Divide. Of these Carcajou Pass, 5120 feet in altitude, originally named Wolverine Pass, but changed on account of duplication, is most striking. Its summit is a broad swamp, numerous channels carrying off the glacial outflow of the magnificent ice-bound cirque below Mt. Phillips. Here, half a dozen broken icefalls send their masses down in wildest confusion. The intermingling of the channels in the swamp is so intricate that it is a difficult problem to know where the watershed line lies. This vicinity is also notable for the large number of moose seen feeding in and around the many ponds with which it is interspersed. Bess Pass, 5,330 feet in altitude and Jackpine Pass, 6,694 feet, are on the route north to Mt. Sir Alexander. The former is situated in very spectacular surroundings between Mt. Bess, 10,550 feet and Mt. Whiteshield, 8,807 feet: The latter is much frequented by grizzlies and the writer has seen them quite close on several occasions.

Directly east of Jackpine Pass summit the Resthaven Icefield is enclosed by the precipices of Mt. Chown, 10,990 feet in altitude, Mt. Resthaven 10,253 feet and Mt. Barricade. These are the last of the high peaks until Mts. Sir Alexander (MacKenzie) and Ida, six days travel northward, are reached. The half dozen trail passes of the Great Divide that lie between have chiefly open, meadowland summits, alpine flower gardens, and are very beautiful with charming little mountain tarns of frequent occurrence. The pass summits are encircled by outstanding rugged peaks which, while of comparatively low altitude, rise most picturesquely in prominent architectural forms. Caribou, small deer and goat are plentiful, and occasionally mountain sheep are to be seen on the shale hills.

In closing, the writer extends an apology to those who have the patience to read. The



A.O. Wheeler

Mt. Bourgeau

subject is of such magnitude that only the higher points have been sketched in a wealth of material that is embraced within a distance of some six hundred miles of mountain wilderness of surpassing grandeur and, even so, the article has drawn out far beyond the original intention.

Eugene Bourgeau

By J.N. Wallace

Modesty is, no doubt, a great virtue, yet a person who has combined modesty with ability in his work is not an easy subject for a biographer. We find much about his work, but too little about himself. For, although the material results may seem to be the same, no matter who has done the work, our human instinct very plainly tells us that the story is not complete until we know something of the man. For this reason one could wish that modesty had not been so strong a characteristic of the subject of this sketch.

It is generally known that Bourgeau was the botanist on the Palliser expedition, and this alone entitles him to more than passing notice, for the influence of that expedition on the development of the West has been very great. Yet, beyond that fact, and the fact that a mountain in the upper part of Bow Valley has been named after him, little else has been known of his career. Indeed, remarkably few biographical facts are generally known about any of the members of that pioneer expedition. It is only owing to the courtesy and research of Dr. Arthur W. Hill, the present Director of the Royal Botanic Gardens at Kew, that many facts about Bourgeau, apart from references to his work in the Palliser reports, can now be given.

The Palliser expedition was organized by the Colonial Office in March, 1857. At that time the Under-Secretary was John Ball, an Irish member of Parliament, who was a distinguished botanist, and a great lover of mountains. "When a mere child, seven years old, he had been taken on a visit to the Alps, and he said, in after life, that for long years the scenes were impressed on his mind, sleeping and awake, and that probably nothing had had so great an influence on his life." He became the first president of the Alpine Club, founded in 1857, and he had much to do with the organization of the Palliser expedition. Ball was a friend of Sir William Hooker, who was then Director of the Royal Botanic Gardens. The selection of the botanist for the expedition was left in the hands of Sir William, just as the selection of the geologist and of the magnetic observer was left to leaders in those sciences, Hector owing his appointment to Murchison, and Blakiston being recommended by Sabine.

For botanical research the need was for a botanist who was an efficient collector and preserver of plants, and it thus came about that Ball wrote to Sir William Hooker in January, 1857: "I happened to hear yesterday that Bourgeau has no fixed projects at present. If you have not a collector in view who is in all respects fit, it might be worth your while to ascertain whether Bourgeau would undertake this expedition. He certainly dries plants better than any man, except perhaps Balansa."

As a result Bourgeau was appointed. He had then been occupied for ten or twelve years as botanical collector, and had travelled through several European countries. Born in 1813 at Brizon, a village of eastern France on the borders of Switzerland, his early years were spent in surroundings fitted for a naturalist, but his circumstances were humble. His father was a sheep owner on a small scale, and it was while tending the flocks that Bourgeau learned botany from

Nature herself. He had little opportunity for education, but an extraordinary aptitude for natural history. His attainments came to the notice of Seringe, Director of the Botanic Gardens at Lyons, and he was employed there for some years, during which he made important botanical excursions through the country. In 1843 Seringe, who had a high opinion of Bourgeau, recommended him to go to Paris, and he there became connected with many of the leading botanists, and from that time until 1856 he made collections in Spain, Portugal, Corsica, Canary Islands, and Algeria. In the later years of this period he collected for a French botanical society which included Hooker, Brown and Webb among its members.

At the time of his appointment to the Palliser expedition, Bourgeau was 43 years old. He was thus the oldest of the officers, Palliser himself being two years younger, while Hector and Blakiston were under 24 years, and Sullivan probably not any older. Bourgeau's abilities and character have been well summed by Cosson:

"M. Bourgeau n'est pas, a vrai dire, un savant, mais par son aptitude pour l'histoire naturelle et son zèle, il a su suppléer aux lacunes de son éducation première. Il a le coup d'oeil du naturaliste et sou vent, sur le terrain, il a reconnu des plantes comme espèces nouvelles pour la science. Sa probité a toute épreuve, son désintéressement, son dévouement, l'aménité de son caractère, sa franche bon homie lui ont valu des amis dans tous les pays qu'il a parcourus."

Palliser, in his reports, makes many references to Bourgeau's zeal in his work, and to his popularity with all the expedition. "I have to express my thanks," he writes in his final report, "to Mons. Bourgeau for his most unceasing exertions, not only in his botanical labours, but for his care as manager of the stores of the expedition, and his anxiety to assist me in every way." And in letters to Sir William Hooker he says: "Little Bourgeau is a brick, most indefatigable and always at work. He has been an excellent companion, and no matter what his fatigues, his botanical specimens are always his first care." Bourgeau's letters and reports were written in French, a language which Palliser spoke fluently, as he had travelled much in Europe.

It was not until the second year that the expedition reached the mountains. During the first year, that is in 1857, the country was explored from Fort William about as far west as the modern city of Swift Current, and the party went north to Fort Carlton. During the ensuing winter, in addition to recording meteorological data, Bourgeau greatly assisted Blakiston in his magnetic observations. In the spring he made a short botanical trip to the north, probably for some forty miles on the road towards Green lake, as he crossed Shell river. He had also what he calls his portable garden, in which he grew plants much in advance of the season.

In June 1858 an advance was made towards the mountains. The Palliser report contains four letters by Bourgeau to Kew. The first is headed "Fort Carry, 7th June, 1858," but this letter must have been written at Fort Carlton. Probably the heading was intended only as a mailing direction. In this letter, which is dated eight days before the expedition left Carlton, Bourgeau writes: "I am anxious to reach the mountains as soon as possible. It is now two seasons since I saw any mountains resembling the Alpine chains of my native country." The exploration was continued westerly and southerly, and reached the country near the modern city of Red Deer. From here they went south and camped in the region of Irricana, and arrangements were made for separate parties. Bourgeau was directed to accompany Hector and Blakiston up Bow valley, and on reaching Old Bow Fort, he was to be given three men and seven horses, and was to go "as far into the mountains as he thought conducive to the interests of botanical science." This was not very far, as we shall see.

Hector, in his journal, says that they reached Old Bow Fort on 7th August, and established

a camp there. For a few days they explored the surrounding country, and arranged for the three parties. On August 11th Hector's party and Bourgeau's party set out together up the Bow valley, and camped at Lac des Arcs, which was named by Bourgeau. Next day, at dawn, they both went up Grotto mountain, one of the Fairholme group (so called after Palliser's sister, Mrs. Fairholme), and at 500 feet above the river Bourgeau began to get Alpine plants in abundance. At 1,000 feet they discovered the cave which led Bourgeau to name the mountain Pic de la Grotte.

Returning to their camp at noon, Hector took leave of Bourgeau who, he says, did not intend to go much farther up the valley, but wished to cross to the south side of the river. Hector then proceeded on his own journey which was to result in the exploration of Vermillion and Kicking Horse passes. Six days later, on 17th August 1858, when he was just past the site of Banff, Hector notes in his journal: "Looking up the valley to the W. S. W. we had before us a truncated mountain, evidently composed of massive horizontal strata, and which I named Mt. Bourgeau. The pass by which Sir George Simpson crossed the mountains lies to the south of this mountain." The mountain is ten miles W. S. W. of Banff, about half way up Healy creek valley, and four miles to the northeast of Simpson pass. Its altitude on the most recent map is given as 9,615 feet⁵⁰. A few days later, when Hector had reached Vermillion pass, he refers to "a large central mass of snow-capped mountains which I named Mt. Ball, after the Under-Secretary of State."

Bourgeau gives hardly any account himself of his itinerary in the mountains, and the few references just quoted are all we have from other sources. In his second letter to Kew, written at Edmonton on 9th October of this year (1858), he mentions that he had been keeping a journal, but judging by the general character of his writings, his journal would probably contain little except botanical and meteorological notes from day to day. Palliser's journals and Hector's are given in, full in the report, and the absence of any journal of Bourgeau may be due to its being only statistical.

In the letter referred to, Bourgeau gives but a few items about his journey: "On July 24th we were in sight of the magnificent chain of the Rocky mountains and at last, on August 7th we arrived at the foot of the mountains, where stood the old fort The high peaks of this valley bear the following names, Pic des Pigeons, Pic de la Grotte, Pic du Vent, the last being so named from the storms which begin on its summit. I have explored this valley more than any other, and especially the mountains on the northern side of the Pic du Vent, which I have found peculiarly rich in Alpine plants." Hector, at various times, states that the three mountains were named by Bourgeau, and that he had made "Windy Mountain" the subject of an elaborate botanical examination. These mountains retain the names to the present day. Wind Mountain, 10,100 feet, is about six miles due south of the modern railway station called The Gap. It is not so high, nor so well known, as the twin-named Storm Mountain which overlooks Vermillion Pass.

Bourgeau was apparently satisfied with his season's work, for he writes, in the same letter: "I am happy to in form you that I have gathered the greater number of the plants inhabiting that portion of the mountains which I have been able to explore in 17 days. For weighty reasons it was not possible to remain longer. The vegetation is not rich in species, the mountains are barren, with few streams and little humidity, and no pastures like those of the Alps. Though few in number, each species is abundant, and each mountain, at the same elevation, bears the same species both on the north and the south (slopes).

"The weighty reasons," which precluded a longer stay and resulted in Bourgeau turning

⁵⁰ The name Bourgeau Range, applied to mountains east of Brewster creek, seems to have originated from some mistake on an early map.

back so far from the continental divide, were probably fear of the Blackfeet and shortness of provisions. At that time these Indians were held in great dread, and Palliser comments on the fear of his men when he visited Old Bow Fort himself shortly after Bourgeau had left there to go up the valley, and this fear kept the men from the hunting which was necessary to get supplies. Palliser left some men at the Olds Fort to await Bourgeau's return, and they were then to return to Edmonton. He himself, while cautious, had little personal fear, and he went up Kananaskis river and over the pass to the western side, while Hector and Blakiston were already many miles to the west and south. Whether anything would have been gained by further advance into the mountains by Bourgeau is a question for botanists, but if his early return was due to nervousness, we must remember it was no part of his work to explore topography.

The succeeding winter and spring were spent by Bourgeau at Edmonton, from which, no doubt, he made short trips. He left for England on 24th May, 1859, two days before Palliser set out for his third and last season. Palliser says that Bourgeau's departure was regretted by everyone, but as the original period of the expedition had been extended, his remaining would have conflicted with a prior engagement for the Caucasus. He went down Saskatchewan river with the boat brigade to Lake Winnipeg, and after a long passage of 22 days across the lake, due to contrary winds, a delay he utilised to botanically explore several islands, he reached Fort Garry. From there he went to St. Paul, only ceasing to collect when he reached that place. Finally he reached London where he was occupied for some months arranging his enormous number of specimens, and in the following year, 1860, he was collecting in Asia Minor. Later he made excursions in France and Spain, and in 1865 and 1866 was collecting in Mexico for the French Government.

The final list of Bourgeau's specimens included 819 species, representative of 349 genera and 92 orders, more than two-fifths of the flora then known to exist in British North America. The specimens numbered thousands, so that distribution of sets were made from Kew to other museums. While 50 species were found at about 8,000 feet altitude, no specimens were gathered on the western slope of the Rockies, nor on the eastern slope to the west of Canmore.

There has been a strange uncertainty about Bourgeau's full name. At Kew there are 37 letters written by him from 1846 to 1871, but in none is his full name signed, and it is the same all through the Palliser report. He is always P. Bourgeau. In the proceedings of the Linnaean Society, and in the earlier reports of the Botanical Society of France, the Christian name is given as Emile, yet it was really Eugene, and the later French records have this name. The present Director of the Royal Botanic Gardens ends an account of Bourgeau's activities in Europe as follows: "The last letter that Bourgeau wrote to Kew is dated August 2nd, 1871. He was then in Paris, and had recently returned from a collecting trip to the island of Rhodes in the eastern Mediterranean. He died in February 1877. Some time before his death he was employed in the Museum d'Histoire Naturelle at Paris."

There is little of the spectacular in Bourgeau's career, but he did much pioneer work in many countries, without the glamour which attaches to exploration. He was the first botanist to examine the Rocky Mountains south of Athabaska pass, and the prairie south of North Saskatchewan river. His predecessors in the West—Drummond in 1826, Douglas in 1827, Jeffreys in 1852—did not go south of those limits. All pioneer work is prone to be forgotten, its identity lost in the mass of advancing knowledge, and Bourgeau's early years led him to keep himself in the background. Nothing written by him has been published beyond what is included in the Palliser report, and one letter to his friend, Cosson. His memorial in the mountains of Western Canada will serve to recall his work in many lands.

The Centenary Of David Douglas' Ascent Of Mount Brown

By J. Monroe Thorington

Read in part before the Alpine Club of Canada, New York Section, 17th Annual Dinner, March 26th, 1927.

It is probable that more than a few mountaineers attending the 1926 Camp, in Tonquin Valley, were unaware that they were within a few miles of Athabaska Pass; that from the *névé* of the Fraser glacier, on the slopes of McDonell Peak, one may look past the western ridges of Erebus, and almost directly through the gap in the Continental Divide which, for so many years, was travelled by pioneers going to and fro between the Columbia and Athabaska valleys. And if anyone had inquired about David Douglas, the answer would no doubt have been a vague one: "Oh yes, a botanist. Years ago. Named Mount Brown and Mount Hooker. Climbed Mount Brown, and thought the mountains were the highest in North America. Got on the maps and fooled people for a long time before someone found out that he had made a mistake."

This year, 1927, is the Centenary of David Douglas' crossing of Athabaska Pass. He left us one of the most picturesque and entertaining stories concerning the Canadian mountains, the first recorded account of an ascent above their snow line. After a century it may not be out of place to restate the fragmentary facts bearing on this occurrence.

Douglas was employed by the Royal Horticultural Society on a botanical expedition to the United States in 1823; and, again, in the year following, on a more extensive journey to California and the Northwest, lasting until 1827.

On the 20th of March, 1827, he left Fort Vancouver, homeward bound, with Ermatinger's York Factory brigade. Ascending the Columbia to Boat Encampment, they made camp, on May 1st, a little distance down on the western slope of Athabaska Pass.

Even at this date there was a tradition of height in the region. David Thompson, from an incorrect boiling point determination, was certain that the Athabaska Pass was 11,000 feet above the sea. Ross Cox and Thomas Drummond concurred in this opinion, and all thought that the mountains were between 16,000 and 18,000 feet in height.⁵¹

Douglas became desirous of ascending one of the peaks, and, accordingly, set out to climb that on the left or west side which seemed the highest. The ascent took him five hours and the descent one hour and a quarter. He recorded the event in his field journal—a heavy ledger of some 130 pages, with entries covering the period 1824-27—but without mentioning any peak by name or elevation. He does not state that his mountain is the highest in North America—that does not happen until later—and he specifically states that there were many other mountains in the neighborhood higher than the one he was on.

After his return to England, probably late in 1828, Douglas transcribed his journal into a short sketch, presumably for reading before the Royal Horticultural Society.⁵² In this he made some remarkable changes. He states that the mountain he climbed was "on the north or left hand side. The height from its apparent base exceeds 6000 feet, 17,000 feet above the level of the sea ... This peak, the highest yet known in the Northern Continent of America, I felt a sincere pleasure in naming Mount Brown in honor of R. Brown, Esq., the Illustrious Botanist ... A little to the south is

51 Thorington: THE GLITTERING MOUNTAINS OF CANADA, p. 151 ff.

52 In 1914 the Royal Horticultural Society published a monograph in which the Douglas journals are printed in full.



J. Monroe Thorington

Mt. Hooker from the Northwest, from the Summit of Mt. Kane

(Labelled points correspond with companion pictures)

- 6. Mt. Serenity
- 5. Summit
- 4. Highest Rocks
- 3. West Tower
- 0. Mt. Bras Croche
- 2. West Col



J. Monroe Thorington

Mt. Hooker and the Hooker Icefield from the Top of the Scott Glacier

(Labelled points correspond with companion pictures)

- 5. Summit
- 4. Highest Rocks (records left here)
- 2. West Col
- 3. West Tower

Lateral distance between points 2 and 5 is about 1.5 miles

one nearly of the same height rising more into a sharp point I named Mount Hooker in honor of my early patron the enlightened Professor of Botany in the University of Glasgow, to whose kindness I, in great measure, owe my success hitherto in life.”

Here we have the mountains named for the first time, the height of Mount Brown given, and the information that they are the highest on the North American Continent. The names were doubtless given with the thought of pleasing his patrons, and the fiction of their great altitude may have been added for the same reason, although Douglas was probably influenced by the opinion of his predecessors on the Athabaska trail.

We know that Douglas did not name the mountains until after he returned to England; the dated watermarks in the paper of his journals are proof positive of this.⁵³ His statement that Mt. Brown was the highest in North America was prevarication pure and simple, as Douglas knew, having set down the truth in his field journal.

In the year following Douglas superintended a map (it is dated 1829) which Hooker published in the first volume of *Flora Boreali Americana*. One finds the name Mount Brown, 16,000 feet, placed on the western side of Athabaska Pass, and Mount Hooker, 15,700 feet, on the eastern side, approximately southeast of Mount Brown. This is the first time that figures are given for the elevation of Mount Hooker, and Douglas adds to the complexity of the problem by lowering Mount Brown by a thousand feet. Perhaps he had overshot probability.

All that we know definitely is that the names and heights were created in England, and that Douglas knowingly falsified in claiming the peaks as the loftiest on the continent.

We can bring forward little additional evidence to help Douglas. It is really questionable whether a man untrained in mountaineering could climb the present Mt. Brown on snowshoes in five hours from Ermatinger's camping place.⁵⁴ He may of course have reached the snow plateau on the southern shoulder, and it should not be forgotten that this was at a time in mountaineering history when many a man "climbed" a mountain without attaining the very summit. It was only necessary that one should reach a considerable height.

The Interprovincial Survey, visiting Athabaska Pass in 1920, has perpetuated the names Brown and Hooker.⁵⁵ Douglas probably did reach some point on the present Mt. Brown. The Survey decision and recommendation for Mt. Hooker is far-fetched, and is not helped by the fact that it was made at a time when the Commission was ignorant of the existence of Douglas' field journal.⁵⁶

The Kane icefield intervenes between Athabaska Pass and the present Mt. Hooker, and the latter is quite invisible from the pass. In fact it cannot be seen at all until one climbs quite high on the slopes of Mt. Brown. One would believe, therefore, that if Douglas looked up from his camping place and tried to decide which of two peaks was the higher and the more laudable goal he must have compared the present Mt. Brown with McGillivray's Rock. These would have been the most conspicuous peaks from his viewpoint. It seems likely that McGillivray's Rock is Douglas' Mt. Hooker, a view brought forward by Professor Coleman on the occasion of his own visit to the Athabaska Pass in 1893.⁵⁷

53 C.A. J. XXXVII., p. 327 ff.

54 Collie: CLIMBS AND EXPLORATION IN THE CANADIAN ROCKIES, p. 153. C. A. J. vi., 90.

55 A. J. xii., p. 163 ff. THE GLITTERING MOUNTAINS OF CANADA, p. 167.

56 Letter from A. O. Wheeler to the writer, dated November 23, 1922.

57 Coleman: THE CANADIAN ROCKIES, 207. THE GLITTERING MOUNTAINS OF CANADA, p. 294 ff. (App. G.).

The most promising lead for further work on the Brown-Hooker problem is the knowledge that Joseph Sabine, then secretary of the R. H. S., received from Douglas several volumes containing field sketches, meteorological and geographical observations relating to the Columbia River and its tributaries. One conjures up a vision of a drawing of Athabaska Pass, with the mountains neatly labelled. But these volumes have become lost and cannot be traced. Perhaps some day they will come to light.

This is the true story of Mount Brown and Mount Hooker. Fragmentary and uncertain it yet remains the outstanding legend of the Canadian mountains, adding no little to the allure of the heights of Athabaska. For this reason one may well pause to remember the man who created it a hundred years ago.

SUPPLEMENTAL NOTES—

I.

In the Abstracts of the papers printed in the Philosophical Transactions of the Royal Society of London (Vol. 111., 1830-1837, p. 472), one finds the following entry, under the date April 20th, 1837:

“A paper was read in part, entitled, ‘Observations taken on the Western Coast of America, ‘ by the late Mr. Douglas, R.A., F.R.S. Communicated by the Right Honourable Lord Glenelg, one of His Majesty’s Principal Secretaries of State, F.R.S., etc.”

Under the data April 27th, 1837, it is stated that “The reading of Mr. Douglas and Major Sabine’s paper was resumed and concluded.

“In the report prefixed to this paper Major Sabine states that Mr. Douglas was originally a gardener, and was in the year 1833 [a misprint for 1823] recommended by Sir William Jackson Hooker to the late Mr. Joseph Sabine, who was then Secretary to the Royal Horticultural Society of London, as a fit person to be employed by the Society in selecting and bringing to England a collection of plants from the United States of America. Having accomplished this mission to the complete satisfaction of his employers, he was next engaged on an expedition having similar objects with the former, but embracing a much larger field; namely a tract of country extending from California to the highest latitude he might find it practicable to attain on the western side of the Rocky Mountains. Anxious to render to geographical and physical science all the service in his power, and to avail himself for that purpose of every opportunity which his visiting these hitherto imperfectly explored regions might afford him, he now endeavoured by diligent application to supply the deficiencies of his previous education. During the three months, which preceded his departure from England, he studied with unremitting ardour and perseverance for no less than eighteen hours each day, and conquered every difficulty, acquiring complete knowledge of the principles of science, learned the uses of various instruments, and made himself thoroughly master of the methods of taking observations both at sea and on land. “

“The narrative proceeds to notice the arrival of Mr. Douglas in America, the progress of his undertaking, the loss of his collections and most of his books and papers by the upsetting and dashing to pieces of the canoe in which he attempted to pass the rapids, and lastly his death in 1833, at Owhyhee, in the Sandwich Islands, whither he had proceeded on his return to Europe. “

“The books which were preserved and which have been received by Major Sabine, consist of several volumes of lunar, chronometrical, magnetical, meteorological and geographical observations, together with a volume of field sketches. The geographical observations of latitude and longitude refer to two distinct tracts of country; first, the Columbia river, and its

tributaries; and the district to the westward of them; and, secondly, California. Mr. Douglas very judiciously selected the junctions of rivers, and other well characterized natural points, as stations for geographical determinations. The papers containing the details of the magnetical inquiries comprise observations of the dip, and of the intensity, at various stations both in North America and in the Sandwich Islands.”

Just why a paper on Douglas’ exploration should have been read before the Royal Society, four years after his death, is not clear. Although the title of the paper is preserved in the Abstracts, a search of the Philosophical Transactions of the Royal Society for the year MDCCCXXXVII. (Part II.), indicates that the paper was never printed. This was confirmed by the Librarian of the Royal Society, who stated further that the missing volumes by Douglas are not in their archives.

The Secretary of the Royal Artillery Institution, Woolwich (where some of Sabine’s papers are preserved,) could find no record of the works of Douglas.

The Assistant Director of the Royal Botanic Gardens, Kew, stated that the volumes are not in the Kew Library, but adds: “Major (afterwards Sir Edward) Sabine informed Sir W. J. Hooker in a letter dated February 11th, 1837, that he had sent a report to the Colonial Office on “Douglas’s Geographical and Magnetical Papers.” Several of Sabine’s letters contain evidence that he was in Communication with the Colonial Office relative to Douglas’s manuscript.”

The Librarian of the Colonial Office could not trace the volumes, and states that the correspondence of the period is now in the Public Record Office. He adds that the library possesses a small book (undated) entitled “A Brief Memoir of the Life of Mr. David Douglas, with extracts from his letters.” No publisher’s name appears, the whole volume running to 104 pages, 8 vo. The title, however, is identical with that used by Hooker in the “Companion to the Botanical Magazine,” and is probably an offprint of this account.

All of the more hopeful clues have, therefore, been traced down, and it seems unlikely that the desired manuscript volumes have been preserved.

II.

In any consideration of Douglas’s character as bearing on the Brown-Hooker problem, the following paragraphs, written by W. J. Hooker [“Companion to the Botanical Magazine,” vol. 2, p. 142] are of considerable weight: “Qualified, as Mr. Douglas undoubtedly was, for a traveller, and happy as he unquestionably found himself in surveying the wonders of nature in its grandest scale, in conciliating the friendship (a faculty he eminently possessed) of the untutored Indians, in collecting the productions of the new countries he explored; it was quite otherwise with him during his stay in his native land. It was, no doubt, gratifying to be welcomed by his former associates, after so perilous yet so successful a journey, and to be flattered and caressed by new ones; and this was perhaps the amount of his pleasures, which were succeeded by many, and, to his sensitive mind, grievous disappointments His company was now courted, and unfortunately for his peace of mind he could not withstand the temptation (so natural to the human heart) of appearing as one of the Lions among the learned and scientific men in London; to many of whom he was introduced by his friend and patron, Mr. Sabine As some further compensation for his meritorious services, the Council of the Horticultural Society agreed to grant him the profits which might accrue from the publication of the Journal of his travels, in the preparation of which for the press, he was offered the assistance of Mr. Sabine and Dr. Lindley: and Mr. Murray of Albemarle-street was consulted on the subject. But this proffered kindness was rejected by Mr. Douglas, and he had thoughts of preparing the Journal entirely himself. He was, however, but little suited for the

undertaking, and accordingly, although he laboured at it during the time he remained in England, we regret to say, he never completed it. His temper became more sensitive than ever, and himself restless and dissatisfied; so that his best friends could not but wish, as he himself did, that he was again occupied in the honourable task of exploring North-west America.”

This information would seem to explain the origin of the second manuscript—the “Shorter Journal”—written by Douglas after his return to England, and substantiates the thought that the changes made therein—the creation of Mt. Brown and Mt. Hooker and their altitudes—were introduced for purposes of personal publicity.

III.

Some interest attaches to the attempt at discovering just who fixed the height of Athabaska Pass at 11,000 feet. Washington Irving [in an appendix to “Astoria”] preserves a conversation between David Thompson and James Renwick in which Thompson states, that one of the mountains in the vicinity was twenty-five thousand feet high. As this occurred at a dinner in New York, it may have been that Thompson, departing from his custom, had partaken heavily of liquid refreshment; but as the incident took place about 1822 it antedates the crossing of Athabaska Pass by either Sir George Simpson or David Douglas.

Thomas Drummond mentions a Lieut. Simpson, R.N., who was surveying in the vicinity of Jasper House during the winter of 1825-26. This was Lieut. Aemilius Simpson, R.N., a half-brother of Thomas Simpson, the Arctic explorer of the Dease and Simpson Expedition. Thomas Simpson was a nephew of Sir George Simpson [“Dictionary of National Biography”]. Douglas, himself, at Fort Vancouver in November, 1826, became acquainted with Lieut. Simpson.

Drummond informs us that, “The height of one of the mountains taken from the commencement of the Portage, Lieut. Simpson reckons at 5,900 feet above its apparent base, and he thinks that the altitude of the Rocky Mountains may be stated at about 16,000 feet above the level of the sea.” The wording of this sentence is closely paraphrased in Douglas’s second journal [the “Shorter Journal”] and may have been the source of his information, especially as he returned to England with Drummond, sailing from York Factory on the Hudson’s Bay Company’s ship, Prince of Wales.

Lieut. Simpson died in 1831 [“Life and Letters of Thomas Simpson,” Alexander Simpson, 1845], and appears to have been one of the many Hudson’s Bay men who, after the Franklin Expeditions, carried or had instruments of various kinds, although they may not have known how to use them.

There is no evidence in literature consulted that David Thompson and Sir George Simpson ever met. It is likely that Sir George Simpson made a boiling point determination of Athabaska Pass, although his name is bracketed with it by David Thompson. Thompson’s manuscript, in which this occurs, as published by the Champlain Society, was written when he was seventy years old. It may well be that after so many years Thompson assumed that the Simpson concerned with the altitude determination was Sir George; but the facts of the case make it appear that the man responsible was really Drummond’s Lieut. Simpson.

Thompson’s original notes have recently been examined on this point [by J. B. Tyrrell] and there is nothing in them about the heights of the passes.

Lieut. Aemilius Simpson was one of two sons of Alexander Simpson by his first wife. The maiden name of Alexander Simpson’s second wife was Mary Simpson. She was the mother of Thomas Simpson, the Arctic explorer, and of Alexander Simpson (junior). The latter states that Sir

George was the illegitimate son of his mother's eldest brother. Sir George and Thomas Simpson, therefore, were cousins, while Aemilius was unrelated to Sir George. It was at the instigation of Sir George, however, that Lieut. Simpson, at a time when the British navy was the subject of public apathy, entered the service of the Hudson's Bay Company.

[Consult "British Columbia Coast Names," Walbran, p. 394 ff, under Port Simpson. Also "N. W. Coast," Bancroft, II, p. 441, 447. Simpson is said to have always put on white gloves before giving an order from the deck of his ship, and is supposed to have been the first man to bring apple seeds to the British Columbia coast.]

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North Of Mount Robson

By A.S. Sibbald

In the summer of 1924, in the closing days of the Robson Pass camp of that year, a party of four consisting of H. E. Sampson, G. A. Gambs, D. J. M. McGeary and myself undertook what our friends of the Alpine Club of Canada, watching us leave Robson Pass for the north on a damp, gray morning, called a "Polar expedition." Our plan was to go by saddle and pack train northwards down the Smoky River, then northwesterly by Glacier (Chown) Creek, and north again to a suitable point between Bess Pass and Jack Pine Pass. Here we planned to send the packer and ponies home and, being left thus "far from the madding crowd," to set up a small camp as a base for several days light exploratory work and then to back-pack across country by some suitable mountaineering route and win our way back as opportunity offered to Mt. Robson station.

We left the Robson Pass camp of the Alpine Club of Canada on the second day of August and reached the station after completing our itinerary on the evening of the thirteenth of that month. The twelve days in question included some of the very finest and some of the most utterly cheerless which we had ever spent in the mountains. Some description of the district and of our experiences and errors may be of interest to our fellow-members of the Club and other mountaineers.

Our errors and the resulting occasional very difficult days were avoidable. The errors had to do with choice of one part of the route through strange country and with the fact that two members of the party had not come to the Club's summer camp expecting to take such later trip and were, therefore, not properly equipped for back-packing. The same general plan could easily be varied by better coordinating the equipment with a view to minimizing bulk and weight and by altering one part of the route. With such variations the adventure could be repeated with benefit and with pleasure.

The morning of the second of August was much overcast. Nevertheless, Donald Phillips's man Adam, who was to pack in our outfit to our "farthest north," was early astir and busy with the multitudinous detail of provision boxes, canvas covers, pack-saddles, ropes and ponies. No one of our party of four was an experienced rider—we had each made it a practice in the mountains to roam on foot and so have a wider range of route than ponies can essay; but it was thought best to strive for distance on the way north even at the expense of discomfort. On that day of commencement we paid the price. Each aching mile convinced us more completely that the geography of Northern Alberta could be immensely bettered by moving Jackpine Pass many leagues farther south.

The day refused to improve. Chill wind and driving rain swept the valley of the Smoky as we jogged along. The view was always limited by the ceiling of cloud a couple of hundred feet above our heads. A hasty standing lunch was followed by more miles of which large portions lay directly down the shallow bed of the Smoky River, itself, for lack of better going on either side. My most vivid recollection of the afternoon is that of the rain trickling down the back of H. E. Sampson's bleached canvas coat as he rode the pony in line directly ahead of my own. After twenty miles we turned to the right up Chown Creek and rode up its wide gravelly valley. The view to the right towards Mt. Chown continued hidden by the obstinate clouds. Camp was made in rain on Bess Pass after dark. But Sampson's generous bowls of hot soup sent us to an almost dreamless slumber from which we rose at 4 a.m. well-rested and ready for anything in spite of continued chilly and cloudy conditions.

Breakfast was over and camp packed by six o'clock. We rode slowly up the trail which



Interprovincial Boundary Survey
Mt. Chown and Chown Glacier



Interprovincial Boundary Survey
Mt. Bess and Summit of Bess Pass

climbs the high shoulder of Mt. Bess. This took us into banks of mist which alternately enveloped us and then dissolved in the early morning air. Evidently a change was at hand in weather and in comfort. Just as we topped the shoulder the sun came out and at once both tongues and ponies took on a new animation. We swung down the far side of Bess Shoulder at a lively pace and at 8:30 in the morning, after five miles journey, made camp in a beautiful park-like spot at the south foot of Jack-pine Pass. Adam was off and away a little after nine o'clock of a bright summer day. His instructions were to meet us on the eleventh of August at Carcajou (Wolverine) Pass, and pick up our packs while we would continue on foot over the high glacier country in an air-line for Robson Pass.

We spent an active day. Camp was set up, meals cooked and slings rigged for roping our food supplies from tree branches out of reach of visiting bears. In the afternoon we walked up to the summit of Jackpine Pass. The easy slopes near the top consisted of very finely disintegrated matter from thin layers of soft slaty rock and showed, more perfectly than I have observed it elsewhere, the wavy water-markings which appear on any such surface exposed to heavy rainfall.

From the summit of the Pass we climbed the low peak immediately to the west and from its crest obtained our first general impression of the country. To the east of the Pass the rock wall from Mt. Bess to Mt. Chown runs northerly surmounted by a gleaming cap of ice which sends exploratory tongues here and there well-nigh down into the valley where our camp was pitched. Immediately to the north the wall rises into a series of abrupt rock peaks which, I am informed by Mr. A. O. Wheeler, cuts off from our vantage point the view which we would otherwise have had of one of the most extensive glacier fields in that portion of the Rockies. The country west of the wall and north of the Pass is of wholly different character, consisting of the low green valley of the Jackpine River with, to its own west, extensive rolling alplands very similar to those with which Journal readers may be more familiar between Simpson Pass and Citadel Pass in the vicinity of Sunshine Camp. What interested us most, however, was the view to the south and southwest across the alplands and on beyond the Beaver River to where a magnificent and extensive panorama of peaks and glaciers unrolled itself along that whole portion of the horizon. Mt. Longstaff at their extreme east we knew from map study but the range referred to above running far to the west from that peak is evidently for the most part terra incognita. It gives promise of many fine day's adventure and is but one of the numerous areas in the Rockies which ensure novelty and the joy of exploration to Alpinists for some generations to come. From our vantage-point that afternoon we planned a route to Carcajou Pass which would cross the Beaver River and skirt the base of the most easterly peaks of the range which so appealed to us.

Next day Sampson, Gambs and McGeary climbed Mt. Bess from Bess Shoulder while the lot fell upon myself to watch the camp and prevent damage from bears to food, tents and bedding. In this we were perhaps unnecessarily careful. We felt, however, that our position was a most isolated one and were unwilling to take the risk of damage to our supplies. The climb was completed in good order and reported to be an excellent one. So far as my enquiries have been able to elicit there have been only two or three previous ascents. Returning home the climbers were benighted before getting completely off the mountain. Mr. Sampson continued down broken rock faces and reached camp, where fire and hot food had been kept ready, about eleven o'clock. Mr. Gambs and Mr. McGeary sat the night out and continued down by Bess Shoulder at daybreak and thence into camp about six o'clock. All hands rested until noon.

Later in the day Sampson and McGeary devoted themselves to shaving and other methods of self-beautification while the indefatigable Gambs and myself prospected a route up the west

side of our valley on to the Alplands and cached a portion of our heavy tinned goods in a creek four miles or thereabouts on the route which we would follow when ready to start home two days later.

The weather throughout had continued good, and we were delighted with our camp and with its site. The view towards Jackpine Pass was charming while the glacier-crested Bess-Chown wall immediately east of us gave all the high mountain associations needed to balance the sylvan setting of the valley itself. Perhaps the most striking phenomenon of the district was the evening effect when the sun-rays from the west shot over the wall on the west of our valley and played in a very blaze of colour upon the ice which crested the ridge from Bess to Chown while the valley we were in lay between in deepening shadow.

The following day was not so propitious. There were indications that the weather was about to change. Nevertheless, we busied ourselves with lists of food and as much preliminary packing as was possible before our tents would actually be struck next morning. On the evening of the sixth a pack-train came down the trail from Bess Shoulder and brought to our camp Mr. H. F. Lambart of the Government Topographical service, a fellow member of the Alpine Club of Canada, with two other gentlemen, Messrs. Christie and Cassels. The evening was spent most comfortably by the camp fire and we turned in early in preparation for our start next morning.

On the morning of August 7th we rose at 4:00 a.m. The sky was overcast and indications were decidedly bad. Our movements reflected the indecisiveness in our minds and it was not until 7 o'clock that we finally broke camp and got away. McGeary and myself headed straight up a small water-course in the western wall of the valley while Sampson and Gambs found an easier grade by first going part way up to Jackpine Pass. Our packs decidedly heavy as, by reason of the threatening weather, we included an extra day's food against the possibility of being storm-bound somewhere on our way to our rendezvous with Adam at Carcajou Pass. The two divisions of our party joined forces a couple of hours later up on the alplands west of our valley and took their first substantial rest at the cache which Gambs and myself had made in the creek two days before. Donald Phillips had told us that somewhere up on these alplands there was a caribou trail which would lead us down to the Beaver River. I took a line about three-quarters of a mile across the prairie-like summit but found no trace of any trail. Several caribou were observed, however, feeding in the distance. It was bitterly cold with a damp wind sweeping over the level expanse and an occasional drift of rain. We had no shelter such as trees would give from either wind or showers. The alps dropped a little to the west of us into a broad, shallow basin which drained south towards the Beaver. Further west the ground lifted again to form the far side of the basin. Our way should apparently lie either down the drainage line of the basin to the Beaver or across the basin and up its far rim in a second search for the caribou trail. I returned to the party at the cache and after a brief lunch we added the new food to our packs and shortly dropped down into the basin. If anything, the weather was becoming worse. The promise of shelter of tall trees and the weight of our packs led us to decide to follow the basin rather than to climb its western rim. We turned south and in doing so made the great mistake of our expedition. So it seems to all of us, knowing the conditions we met with for the next twenty-four hours. The western rim might, however, have brought troubles of its own.

We were on the British Columbia side of the divide. Our stream soon led us to a lower level where British Columbia vegetation dripping with water from the increasingly heavy rain saturated each stitch of our clothing except the small round spot covered by our packs. The nature of the ground did not lend itself to stopping and camping. The stream had buried itself in the

bottom of a v-shaped ravine whose extremely high sides) flared upwards and outwards to the alps many hundreds of feet above. The gorge was quite trackless and no choice offered once we were into it but that of clambering along its tilted side near water level for what seemed many hours. Tree trunks and forest debris barred the way and our wet packs became astonishingly heavy. Rain from the sky, spray from the river and water from the dripping shrubs and branches continued to penetrate our clothing. It was one of the times which come to all mountain people when they wonder why they do it.

Progress under such conditions was too slow to bring us to the level ground at the Beaver River that afternoon. We were steadily dropping down with the stream but the valley still lay far below. About 3:30 p.m. Gambs and Sampson found a small level spot and halted to set up their tent. The tilt of the land recommenced at the very edges of their residence on all four sides and McGeary and myself continued on down the stream hoping every moment to find another flat place. Not for over an hour did we do so, which will perhaps indicate as well as any other circumstance the difficult nature of the ground. Finally we found one barely large enough. By six o'clock we had brushwood cut away, the tent up with its open front crowded within a foot of the river, a fire going and balsam boughs being dried over it for a bed. Conditions were none too good but seemed palatial after the experiences of the day. Our distribution of food between the four packs had not contemplated such a division of the party as had now occurred. McGeary and myself dined and breakfasted off hot bread and milk. Sampson and Gambs feasted meanwhile, an hour's journey away, on hot bacon and oatmeal. The sun broke through at sunset. We slept in absolute comfort such as we had not dared dream of. When the morning came it was perfect. Drying operations and breakfast filled in the time until our two allies scrambled down the creek-bed, elated, like ourselves, by the bright warm sunshine. Camp was hurriedly struck and we recommenced the struggle with the debris of the ravine. Conditions for heavily laden men were bad enough even in dry weather. By early afternoon we had reached the level valley bottom but were thoroughly fatigued. We lunched and explored the river-side. Our plans seemed impossible. The Beaver was deep, swift and wide. No way appeared of crossing it and we camped some distance down stream (westward) from where we first reached it, with our minds pretty well made up that in the morning we would have to give up the route south of the Beaver and instead follow its north bank to Bess Pass.

Sunrise, however, brought more courage. While the other three packed, McGeary was sent downstream and came back reporting a possibly feasible route. We followed with packs on back and found a log jutting out from the north bank, a gravel bar and an island. The far channel couldn't be seen and, by all mountaineering logic, could, therefore, probably be crossed. McGeary and myself straddled along the log, dropped into the stream, walked up against the current and reached the island. Gambs and Sampson stayed to lighten their loads. Luggage and boots came sailing across the Beaver by aerial route. Three pounds of sugar wafted by Gambs's unerring hand fell on my open camera and effectively prevented the picture which was about to be taken of the crossing of his Rubicon. Sampson, with greater regard for our safety, but not for that of the culprit, threw one of Gambs' mountain boots six feet short of the shore line. The current was so swift that the heavily nailed boot started hastily for the Pacific. Only a frenzied splash from our shore saved Gambs from a forty mile barefoot tramp through the wilderness. Closing up ranks we crossed the island and found that the far channel justified our reasoning by being only little over knee depth. We trod the south bank early in the forenoon in sunshine and wouldn't have traded places with Cortez (really Balboa) when he first saw the Pacific from his peak in Darien.

Ten minutes later, as we scouted the forest-clad wall which pitched upwards on the south side of the Beaver Valley, Gambs' excited shout of "Trail! A trail!" completed our enthusiasm. There it was, plain for all to see, the long-sought caribou trail going up by interminable zig-zags, clear of brush and availing itself of every possible advantage of grade-line on the steep way to the southern alplands. We buckled to our task and climbed until only the whisper of the Beaver followed us up through the beautiful forest. Lunch consisted of sardines and bread. The afternoon involved more labour. The hillside was less steep, but the trail began to fork and re-fork until each attenuated track became scarcely distinguishable from the surrounding woods. We were approaching a wide entrance between low mountains with far up between them a glacier hung peak. We swung to the right outside the right-hand mountain ridge and climbed steeply through more forest until camping time between six and seven. Camp was pitched amongst moss and heather by a small rill amongst the trees.

On the tenth we rose at 4:15 o'clock and got away a little after six o'clock. The weather had quite reformed. We climbed through forest until 8:45 a.m. and then emerged upon alpine meadows and alplands. On our right was a ridge of rocky peaks, the outliers of the range we had come to visit. To east and north lay the valley of the Beaver River with our route high in the sunshine on the strip of alpland above the forested river-sides and below the rugged wall of rock. We travelled quickly, enjoying the wide prospect of mountain and valley after two days spent below in the timber. At noon the ridge on our right bent back at right-angles to form the west side of the extreme upper valley of the Beaver where it runs northwards from the Carcajou Pass. We swung south again but found that our strip of alpland ceased. Moraine and rockstrewn hill-side succeeded. The going was so rough that we dropped down to the river; in the valley bottom after one of the best days of the entire trip. The night was marred for the first time by mosquitoes as the upper part of the Beaver is sluggish and parts of the valley quite swampy.

Next morning we broke camp at 8:00 a.m., and worked our way over the rocks and through the bush or, at times, over flat, shallow, swampy sections of valley bottom, until at noon we found an old campsite at Carcajou Pass and sent up a smoke signal for Adam, who was due that afternoon. In due time, he and his two pack ponies appeared. We feasted and rested till bed-time.

Tuesday, August 12th, stands out in our memories as the mountaineering day of the whole expedition. Adam was packed and away down Carcajou Creek by 7:00 a.m. The four of us started on-foot at the same hour from the campsite to find a way across the glaciers to Robson Pass. Carcajou Pass itself is a flat valley with swamps and ponds formed by beaver dams. It is drained by the Beaver flowing to the Pacific and also by the Carcajou flowing into the Smoky and so to the Arctic. Further south there extends a valley which is to the Carcajou and Beaver outlets what the trunk of a Y is to the two forks of that letter. Into this southern extension of the valley we now penetrated. A wide variety of conditions met us. Without packs, except lunches, we made rapid headway. At times we had hard scrambling through rock and windfalls. Again we found a perfect six-foot corridor—a really remarkable place—between forest and rough mountain side. Once we passed through a dead forest of fir trees, drowned out by a temporary overflow of the river, whose gravel and boulders gleamed white amongst the darker tree trunks. Between nine and ten o'clock we came to a violent mountain torrent coming down from the vicinity of Mt. Long-staff. It was about forty-five feet wide with a distinct downward grade which created in the milky glacial water a current whose force was proved by the continual grumbling of moving boulders in its bed. This delayed us for an hour. In some unimaginable way Sampson got across. The other three followed on a climbing rope. It was the worst moment of our trip. Soon after we stepped on the fine little

glacier (the Phillips Glacier) which fills the saucer at the end of the valley. This extreme end of the Carcajou or Beaver Valley can be reached in an easy day from Robson Pass by reversing the route we later followed. The scenery is of the finest alpine variety and the accessible climbing from this point as a centre would appear to be both excellent and, for the most part, entirely new. One of the most striking scenic features is an outjutting of high glacier through or over a rock wall. The ice seen from the valley-head is in the form of a gigantic white Greek cross, which may one day be regarded as one of the notable sights of this portion of the Rockies. We traversed that portion of the Phillips Glacier in the valley-head, swung to the left over morainal hills and newer moraines and at 1:30 lunched at the foot of the snow pass which runs down from the Mural Glacier between Mt. Gendarme and the next mountain west of that peak. At 2:00 we started up the centre of the snow and encountered no difficulty except a few sérac-like crevasses just at the edge of the flat expanse of the Mural Glacier. By 3:30 we were on firmer snow. 4:40 brought us over the Mural Glacier and to the top of the Inderbinen Pass. By 7:45 we were down at the Alpine Club of Canada camp-site at Berg Lake, after a magnificent day and an equally fine route. We slept under trees and reached Robson station next day tired, thin, hard and happy.

SCIENTIFIC SECTION

Flora And Fauna Observed In Alberta And British Columbia

By Alfred J. Ostheimer, III

FLORA

During the sixty-three days of the expedition the following were noted:

A.—Trees, Bushes and Shrubs—

Abies balsamea, Canada, Balsam, and balsam fir, also

Betula papyrifera, canoe birch, rare.

Picea canadensis (Mill.) B. S. P., white spruce, and black spruce.

Pinus Banksiana Lamb, jackpine *Pinus Murrayana*.

Populus deltoides, cottonwood, "Balm of Gilead," and other poplar.

Pseudotsuga Douglasii, Douglas fir.

Salix lucida, "shiny" willow, and some dusty, white willow.

Juniperus mrginiana, red cedar, and other juniper.

Hemlock, larch, alder, kinnikinnick, pussy willow. Weeping spruce and weeping balsam.

Panax horridus, "devils' club," chiefly in British Columbia.

Laurel, nettles, "goose-grass." *Vicia* and lathyrus, vetch. *Fragaria*, strawberries. *Vaccinium myrtillus*, huckleberries. Soapberries and chickenberries.

B.—Flowers and Plants collected, specimens now in the Gray Herbarium of Harvard University. For cataloguing them we are indebted to Mr. Charles A Weatherby of the Herbarium.

1. Under five thousand feet we found:

Rosa Macounii Greene

Ledum groenlandicum Oeder.

Castilleja rhexifolia Rydb.

Arnica cordifolia Hook., narrow-leaved form.
Vaccinium Vitis-Idaea L., var. *Minus* Lodd.
Cornus canadensis L., var. *intermedia* Farr.
Saxifraga austromontana Wiegand.
Linnaea borealis L., var. *americana* (Forbes) Rehder under a burnt tree stump.
Fragaria pauciflora Rydb., pubescent form.
Epilobium latifolium L., under rocks.
Calypso bulbosa (L) Oakes.
Viburnum pauciflorum Raf.
Atragene columbiana Nutt.
Lathyrus ochroleucus Hook.
Aquilegia formosa Fisch., among rocks.
Anemone parviflora Michx.
Antennaria Howellii Greene.
Braya humilis (C. A. Meyer) Robinson.
Pedicularis groenlandica Rets., in sand.
Dryas Drummondii Richards., in sand.
Mertensia Bakeri Greene, var. *amoena* A. Nels., in a woody swamp.
Vicia americana Muhl., var. *linearis* (Nutt.) Wats., in dry soil.
Menyanthes trifoliata L., in rich soil near a small lake.
Robus acaulis Michx., in rich soil near a small lake.
Pinguicula vulgaris L., in rich soil near a small lake.
Polygonum viviparum L., in woods.
Potentilla fruticosa L., in sand.
Smilacina stellata (L.) Desf., in woods.
Pyrola asarifolia Michx., var. *incarnata* (Fisch.) Fern-aid, in mossy sand.
Orchis rotundifolia Pursh, in woods.
Habenaria dilatata (Pursh) Gray (*Limmorchis borealis* Rydb.)
Tofieldia intermedia Rydb., in woods.
Zygadenus elegans Pursh, in woods.
Smilacina racemosa (L.) Desf., in woods.
Rubus acaulis Michx., in woods.
Rubus Pedatus Smith, in woods.
Actaea arguta Nutt., in woods.
Rubus pubescens Raf., in woods.
Hedysarum Mackenzii Richards., in woods.
Lonicera involucrata (Richards.) Banks, in woods.
Arnica arnoglossa Greene, on grassy slopes.
Aquilegia flavescens Wats., on grassy slopes.
Ranunculus Eschscholtzii Schlecht., on grassy slopes.
Anemone occidentalis Wats., on grassy slopes.
Saxifraga aizoides L., on grassy slopes.
Erigeron salsuginosus (Richards.) Gray, on grassy slopes.
Erigeron ursinus D. C. Eaton, in woods.
Salix anglorum Chain., var. *araioclada* Schneid.

Campanula rotundifolia L. (*C. petiolata* D. DC.)
Antennaria pulcherrima (Hook.) Greene.

2. Between five thousand and sixty-five hundred feet we found:

Cypripedium passerinum Richards.
Erigeron peregrinus (Pursh) Greene.
Pentstemon ellipticus Coult. & Fisher.
Draba glacialis Adams, on grassy slopes.
Claytonia lanceolata Pursh., on grassy slopes.
Cassiope Mertensiana (Bong.) Don., on grassy slopes.
Silene acaulis L., var. *exscapa* All., on grassy slopes, in moss.
Saxifraga oppositifolia L., on grassy slopes.
Castilleja occidentalis Torr., form, on grassy slopes.
Draba nivalis Liljeb., on grassy slopes. *Draba incana* L., on grassy slopes.
Shepherdia canadensis L., on grassy slopes.
Viola adunca Sm., in wet grass.
Astragalus, in open woods.
Arctostaphylos Uva-ursi (L.) Spreng.
Menziesia ferruginea Smith, four feet high.
Valeriana sitchensis Bong., var. *Scouleri* (Rydb.) Piper, in alps.
Dryas octopetala L., on grassy slopes.
Antennaria lanata Greene, on grassy slopes.
Erigeron simplex Greene.
Parnassia fimbriata Banks.

3. Between sixty-five and seventy-five hundred feet we found:

Stellaria longipes Goldie, above timberline.
Draba luteola Green, above timberline.
Gentiana glauca Pall. *Veronica alpina* L., var. *unalaschensis*.
 Cham. & Schlecht. (*V. Wormskjoldii*) in rocks. *Saussurea densa* Hook., in rocks. *Lutkea pectinata* (Pursh) Ktze., in rocks. *Potentilla perdissecta* Rydb., in rocks. *Aster Richardsonii* Spreng., in rocks. *Hieracium gracile* Hook., in rocks. *Saxifraga Lyallii* Engl., in rocks. *Senecio pauciflorus* Pursh, in rocks. *Arnica diversifolia* Greene, in rocks. *Senecio triangularis* Hook., in rocks. *Solidago multiradiata* Ait., in rocks. *Pyrola secunda* L., var. *obtusata* Turez., in rocks. *Gentiana propinqua* Richards, in rocks. *Crepis nana* Richards, in rocks.

4. Between seventy-five hundred and nine thousand feet we found:

Poa, on rocky slopes.
Erythronium grandiflorum Pursh, on rocky slopes.
Myosotis alpestris Schmidt.

This report, from brief notes by W. R. MacLaurin, deals only with species noted during the course of the expedition.

A.—Mammals—

Ursus horribilis horribilis Ord., grizzly bear. Female with cubs seen at Tsar Creek bivouac. Tracks noted near Wood River and in snow between Mt. Clemenceau and Tusk Peak.

Ursus americanus Pallas., black bear. Noted near Lynx Creek and near Fortress Lake. Tracks seen in the Clemenceau Area and near Chaba River.

Canis occidentalis Richardson., timber wolf. Two were heard in Athabaska Valley.

Canis latrans Say, coyote. One heard in Wood River Valley; tracks near Chisel Creek delta.

Maries americana americana (Turten), marten. Signs near Lynx Creek.

Gula luseus (Linnaeus,) wolverine. Noted above timber-line in the Clemenceau; tracks near Mt. Massey.

Mephitis hudsonica Richardson., northern plains skunk. One seen in woods near Lynx Creek.

Lynx canadensis canadensis Kerr., Canada Lynx. One seen near Fortress Lake; others heard in the Athabaska Valley.

Ochotona princeps (Richardson). Rocky Mt. pika. Seen and heard all summer, especially in the Clemenceau.

Lepus americanus columbiensis Rhoads., B. C. varying hare. Seen near Lynx Creek.

Evotomys gapperi saturatus Rhoads., red-backed mouse. Most common at Fortress Pass.

Peromyscus maniculatus borealis Mearns or *Peromyscus maniculatus artemisiae*, northern white-footed mouse. Also at Fortress Pass.

Neotoma cinerea Drummondii (Richardson), bushy-tailed wood-rat (pack-rat).

Seen at Fortress Lake and Athabaska Falls.

Fiber zibethicus spatulatus Osgood., northwestern musk-rat. Seen at Lick Creek.

Erethison epizanthum (Brandt.), yellow-haired porcupine. Observed at Fortress Pass, and near the Astoria river.

Marmota sibilans Hollister, Rocky Mt. marmot. Seen in the Clemenceau, in meadows southeast of the Famzr-Bras Croche angle, on the ridge of Listening Mt., and on the high ridge of Sundial Peak.

Citellus columbianus (Ord.), Columbia ground squirrel. Noted at Lynx Creek, and in the Clemenceau.

Eutamias ludibundus Holister, Canadian mountain chipmunk. Observed in the Athabaska Valley.

Callospermophilus lateralis tescorum Hollister, Northern mantled spermophile. Seen on high levels, all over through the summer.

Sciurus hudsonicus Erxleben, Hudson Bay red squirrel. Abundant about Fortress Lake; also seen in the snow east of the Dais massif.

Sciuropterus alpinus alpinus (Richardson), mountain flying squirrel. Noted in the Athabaska Valley and again near Mt. Bras Croche.

Castor canadensis leucodontus Gray, Pacific beaver. Many dams noticed; near Mt. Confederation; near Lynx Creek.

Cervus canadensis Erxleben, Canadian wapiti (elk). Several seen in the Athabaska Valley;

herd near Jasper.

Odocoileus mrginianus (Boddaert) subsp., Virginia or white-tailed deer. Seen in the Athabaska Valley, Chaba Valley, and at Fortress Pass.

Odocoileus hemionus heinionus (Rafinesque), mule or black-tailed deer. Many seen in the Athabaska Valley.

Alces americana (Climton), moose. Observed near Athabaska Falls, above Fortress Lake, and near Fortress Pass. Tracks noted on the high snow pass between Lick and Alnus Creeks.

Rangifer fortidens (Hollister), Rocky Mountain caribou. Seen east of Mt. Massey, and in the Athabaska Valley. Tracks noted at Fortress Pass, near Tsar Creek, and on the Chisel Creek delta.

Ovis canadensis canadensis Shaw, Rocky Mountain sheep. Many at Pocahontas, Alberta.

Oreamos montanus columbianus Allen, B. C. mountain goat. Seen in the Athabaska Valley, on the lateral moraine of the Chaba Glacier, on rock cliffs south of Dais Mountain. Tracks common south of Mt. Farrar, and near Tsar Creek.

B.—Amphibians.

Bufo boreas Baird and Girard, toad. Observed north of the Sunwapta bridge and near Lynx Creek.

Rana cantobrigensis (Baird), wood frog. Near Fortress Pass.

Rana pretiosa (Baird and Girard), frog. Near the Athabaska River.

Thamnophis vagrans (Baird and Girard), garter snake. Seen in Catacombs Creek.

C.—Fish and Insects.

Salnio mykiss (Walbaum), rainbow trout. Found in Pyramid and Jacques Lakes, and in Buffalo Prairie Creek.

Salvelinus malma (Walbaum), spotted trout. Also found in these places.

Cyprinidae, minnows. Small quantities noted at lower altitudes.

Catos tonidae, suckers, also at lower altitudes. No fish found in Fortress Lake. But millions of small red water-bugs noted, about an inch below the surface, swimming rapidly, apparently upside down.

Mosquito larvae were abundant in Catacombs and Lick Creeks, while mosquitoes occurred about Fortress Pass, Lynx Creek, Lick Creek and Catacombs Creek.

Sand flies were found in the Chaba Valley and at Fortress Pass.

“Bull-dogs” were everywhere, up to timberline.

Bees, hornets and yellow-jackets were observed in the Wood River and Athabaska River Valleys.

D.—Birds.

FAMILY: colymbidae

Colymbus holboelli (Reinhardt), Holboell’s grebe. Observed on Fortress Lake.

FAMILY: anatidae

Fuligula vallisneria (Wilson), canvasback duck. Seen in the Athakaska River and on Fortress Lake.

Anas platyrhynchos Linnaeus, mallard. Noted in the Athabaska River and on several lakes

north of the Sunwapta bridge.

Nettion carolinse (Gmelin), green-winged teal. In the Athabaska River.

Oidemia deglandi Bonaparte, white-winged scoter. On the Athabaska River.

FAMILY: rallidae

Fulica americana Gmelin, mud-hen. Seen near the Athabaska River, at Fortress Lake and on the Chaba River.

FAMILY: scolopacidae

Helodromas solitarius cinnamoneus (Brewster), western solitary sandpiper. Along the Athabaska River; on the snow saddle above the Chaba ice-fall.

Actitis macularia (Linnaeus), spotted sandpiper. Along the Athabaska River.

Gallinago wilsoni, Wilson's snipe. Observed along the Athabaska and Chaba Rivers and on Fortress Lake.

FAMILY: tetraonidae

Canachites canadensis canadensis Linnaeus. Hudson spruce partridge. Many observed at and near Fortress Pass.

Canachites franklini (Douglas), Franklin's grouse. Noted in timber, near the Clemenceau Glacier.

Dendragapus obscurus richardsoni (Douglas), Richardson's grouse. Very common; noted in the Athabaska Valley; near Tsar Creek and Fortress Lake.

Lagopus albus (Gmelin), willow ptarmigan. Above Warwick Creek, on the north side of the valley.

Lagopus leucurus (Swainson), white-tailed ptarmigan. Numerous in the Clemenceau, near Bras Croche, on the East Chaba ice-fall and Glacier.

FAMILY: buteonidae

Accipiter cooperi (Bonaparte), Cooper's hawk. South of the Sunwapta bridge.

Archibuteo lagopus sancti-johannis (Gmelin), rough-legged hawk. In the Clemenceau.

Aquila chrysaetos (Linnaeus), golden eagle. In the Clemenceau.

Haliaeetus leucocephalus leucocephalus, bald eagle. On Mt. Confederation, on Mt. Massey, and above the Chaba Glacier.

FAMILY: falconidae

Falco sparverius phalaena (Lesson), desert sparrow-hawk. Above the Chaba River.

FAMILY: panionidae

Panion haliaetiis carolinensis (Gmelin), osprey. Near Maligne Canyon.

FAMILY: strigidae

Bubo virginianus virginianus, great horned owl. East of Fortress Lake.

Otus asio, screech owl. In the Athabaska Valley.

FAMILY: alcedinidae

Ceryle alcyon (Linnaeus), belted kingfisher. Near Jasper.

FAMILY: picidae

Dryobates villosus inonticola (Anthony), Rocky Mt. hairy woodpecker. North of Lynx Creek, and near Fortress Pass.

Picoides arcticus (Swainson), Arctic three-toed woodpecker. Seen above Fortress Lake.

Colaptes cafer collaris Vigors, red-shafted flicker. Near Whirlpool bridge.

FAMILY: trochilidae

Selasphorus rufus (Gmelin), rufous hummingbird. Noted at Fortress Pass, in the Clemenceau,

and near the summit of Bras Croche.

FAMILY: tyrannidae

Tyrannus tyrannus, King bird or bee martin. In the Clemenceau.

FAMILY: corvidae

Cyanocitta stelleri annecteus (Baird), black-headed jay. Seen continually all summer.

Perisoreus canadensis canadensis (Linnaeus), Canada jay. Also seen all summer, about every camp.

FAMILY: icteridae

Molothrus ater ater, cowbird. At Fortress Pass and along the Chaba River.

FAMILY: fringillidae

Leucosticte tephrocotis tephrocotis Swainson, gray-crowned rosy finch. Seen on the Chaba Glacier.

Zonotrichia leucophrys (J. R. Forster), white-crowned sparrow. Along the Athabaska Valley.

Zonotrichia coronata (Pallas), golden-crowned sparrow. Also in the Athabaska Valley.

Spizella passerina arizonae Coues, western chipping sparrow. Seen along the Athabaska River and near Fortress Pass.

Astrogalinus tristis tristis, gold-finch or wild canary. Along the Athabaska River.

Junco hyemalis hyemalis (Linnaeus), slate-coloured junco. On the Chaba Glacier and near the summit of Mt. Bruce.

Plectrophanes nivalis nivalis, snow bunting. Near the Athabaska River.

FAMILY: hirundinidae

Riparis riparia (Linnaeus), bank swallow. Along the Athabaska, Sunwapta and Wood Rivers. *Iridoprocne bicolor*, tree swallow. Along the Athabaska River.

FAMILY: bombycillidae

Bombycilla garrula (Linnaeus), Bohemian waxwing. Near Athabaska Falls.

FAMILY: mnioiltidae

Dendroica coronata (Linnaeus), myrtle warbler. East end of Fortress Lake.

FAMILY: troglodytidae

Nannus hiemalis pacificus (Baird), western winter wren. Along the Chaba River.

FAMILY: sittidae

Sitta carolinensis carolinensis (Linnaeus), white-breasted nut-hatch. Along the Athabaska River.

FAMILY: paridae

Pentsthes atricapillus septentrionalis (Harris), long-tailed chickadee. Very common near Fortress Lake.

FAMILY: turdidae

Planesticus migratorius migratorius (Linnaeus), robin. Often observed during the summer, in the Athabaska and Chaba valleys.



Blue Lupin, After a Rain



White Dryas

Plant Life Of Mt. Robson And Tonquin Valley

By F.A. MacFadden

Above all else Mt. Robson's ice-hung walls rise wondrously and majestically, a thing alone and apart in the world of mountains glorying in his majesty and purity, confident of his superiority. Falling from his august, silvered sides, Tumbling Glacier meets its enemy when its icy walls encounter Berg Lake. There, it must submit to the laws of gravity and allow itself to crumble and perish in these cloudy waters. While other glaciers are falling back before the onset of climatic conditions, this king of them all is battling with its enemy furiously and without end.

With amazing rapidity dame Nature is covering her loved earth with plant life in the wake of the retreating ice. Almost on the glacier's edge those forerunners of plant life, the lichens, adorn the barren rocks with their bright colors, preparing the way for the mosses and finally the grasses, flowers and trees that are to follow. Many of the moraines are already gay with small flowers, and mosses brighten many a desolation.

In July the wild flowers are in a state of absolute perfection. At these higher elevations, spring, summer and autumn flowers must bloom at the same time in order to fulfill their cycle of life. Their work must be done in haste since the season between the departed snow and the oncoming winter is so short. True, some of the earlier plants have flowered and are hastening their fruit to maturity, with an occasional blossom left to tell of their presence.

Moose Pass some distance from Berg Lake is an alpine flower garden such as it is seldom one's pleasure to come upon. There are lupins more than a foot high in huge azure clumps growing beside the stately hellebore, a wonderful background for the smaller flowers in such a garden. Here the alpine speedwells, marsh marigolds, pale gentians and many other bright flowers created a carpet of exquisite loveliness.

In these alpine gardens there is no crowding out, such as we see in many woodland scenes, there is room for all; the smaller plants as well as the larger ones all nestled together in a happy community, making a picture that will linger in the memory long after the flowers have withered. In a few weeks their cycle of life will be completed, a little longer and the plant world will be resting 'neath a mantle of white, waiting many long months for the dawn of spring when the mad rush of plant life will begin anew.

With regret we left this mountain grandeur, the fields of ice, the clouds playing about Robson, the peaceful lakes, and ever-changing picture, which were soon to be nothing but a memory. Mirrored in a quiet pool, Robson's outlines were very close until a ripple on the water destroyed the picture, when the eye fell upon a flame of color made by masses of purple hedsarum overhanging the water and the golden saxifrage that grew in the gravel beneath.

For some distance I followed the stream that I might see, again, the water-willow herb that brightened the waters edge with its large magenta flowers. Higher on the bank the wintergreen nodded its rosy bells, and the creamy blossoms of the one-sided wintergreen grew out of a bed of moss. Here too was the one-flowered wintergreen with its large star-like waxen flower.

Beyond this stream carrying the cloudy waters from Robson Glacier to Berg Lake is an expanse of rocky flats, with fingers of the stream passing through it. As I looked at this desolation I marvelled at Nature's great desire and determination to clothe it all in green. Here the alpine birch and willows grow, and in their sheltering care the white and crimson paintbrush bloom luxuriantly. Braving the storms that sweep the valley, the interesting little butterwort grows between the rocks,

its yellow leaves half buried in the sand and its single violet-like flower bluer than the sky.

Of all the flowers that love to live under the austere climatic conditions that exist in the northland none thrive well as the white dryas. Its creamy rose-like blossoms are everywhere and its leathery dark green leaves form great mats on the barren rocks, as well as on the grassy meadows. The trail left the stream and wound through the woods close to the shores of Berg Lake. On every side the red and yellow Columbines were dancing in the sunshine that filtered through the trees. The shrubby cinquefoil adorned in many yellow, rose-like blossoms, was in the height of its glory. Here and there a clump of the stately green lily nodded its flowers in the gentle breezes. These, with the many other colorful flowers blooming in the wilderness, were all too lovely to leave behind. Such beauty divided ones attention with lingering glimpses of Mt. Robson in his snowy shroud against the azure sky, the filmy wayward clouds veiling and unveiling its towering summit.

Here was geology in the making. Mighty glaciers carrying on their work of destruction; the ramparts of Robson slowly but surely disintegrating before the irresistible laws of Nature. I looked upon the exquisite loveliness of flowers and forest on every side, and I thought of a trilobite I had found not far away a few days before, a perfect picture on that bit of limestone. It told a long, long story of the past, of by-gone ages, who knows how many years it might have been when like the flowers at my feet it was a living thing. It is all too much to think and dream and wonder at, and it is a relief to be recalled by the roar of a great avalanche somewhere in the mighty wilderness. For a time its thundering disturbs the mountain solitude and then in a moment all is quiet—that awful stillness of the mountains.

As I follow the trail I notice the sentinels of the forest, some fallen, some standing, their whitened trunks and branches the skeleton story of a glorious past. Beside them the living spruce and pine tell of their battle with the elements; close by a conifer but recently bereft of life is clinging fondly to auburn colored needles.

Beyond the expanse of gravel flats the trail winds round a ledge of rock harbouring several varieties of ferns. The limestone-loving green spleenwort peeps from every crevice in the rock at whose base the holly fern grows tall and green.

The brittle fern and mountain woodsia are growing here and there, and we wonder why the ferns have chosen for a home this uninviting ledge.

Soon Emperor Falls are seen from the trail and it is difficult not to visit them and once again be drenched in their spray. Two weeks before I had stood at the foot of this terrifying immensity of water, the most beautiful thing I had ever seen. In the trees that fringed this mountain wonder I had found a colony of moonwort ferns enough to bring joy to any collector of plants, but the trail to Robson Station was long.

On and on down the trail were asters blooming everywhere, making a riot of color with the many other flowers of the same family. Robson rose on the left and on the right a great range topped by glaciers mothering the many waterfalls that cascaded hundreds of feet, tiers of white ribbons in the distance.

After crossing broad flats carpeted with the yellow dryas, we come to Kinney Lake a gem held in the arms of the mountains. Here the vegetation changes. The alpine flowers give way to the dense growth of the devil's club and the forest. Moist banks are covered with mosses, bunchberry, meadow rue, foam flowers, the sweetscented twin-flower all covering the lower slopes with loveliness. There is evidence that the yellow orchids and moccasin flower grow in profusion in these moist rich woods, but their flowers have long since faded.

For the remainder of the distance the trail winds through an old forest of cedars and

hemlocks, shrubs of the lower levels are beginning to colour their fruit and large ferns grow in the forest retreat. The fallen monarchs of the forest are draped in soft green mosses, a delightful resting place for a weary traveller. A little longer and the station is reached and we have said farewell to Mt. Robson whom we may never see again but we will give; to him a large corner of the storehouse of our memory.

Everywhere on the trail from Mt. Robson station to Berg Lake the luxuriance of growth is characteristic of the western slope of the Main Range. Many species of plants grow that are not found on the eastern side, or only occasionally.

The flora of the trail leading from Geikie station to Tonquin Valley, on the other hand, is typical of the eastern slope. Here there were no hemlocks or giant cedars, or moist banks overhung with devil's club and tall graceful ferns. Gay colored flowers did not brighten the path or bloom beside the streamlets that crossed the trail. This ascends rapidly at first threading its way between huge rocks or following the base of moss-covered cliffs. The steep slope is timbered with extensive stands of tall lodgepole pine growing close together. Mistletoe, a fleshy yellowish green plant parasitic on this species of tree, hangs from many of the branchlets. Here the underbrush is chiefly mountain lover, an evergreen shrub with numerous brown flowers in the axils of the leaves. The nodding azure flowers of the tall lungwort made one bright spot on the trail and here and there were the faded blossoms of a tall delphinium and a few plants of the crimson paint brush. For the most part the trail was not gay with summer flowers, the earlier ones had already gone and the mauves and yellows of the asters and goldenrods would not be found until later in the season.

Higher up the character of the forest changed, Douglas fir, spruce and aspen were noticed, buffalo berry, honeysuckle and some of the heaths formed the under growth and dwarfed plants of bunch berry blossomed inconspicuously, while twin flowers and bearberry trailed over the ground with running pine and ground cedar.

Beyond the half-way camp the trail followed a stream where small mauve epilobiums and blue speedwells nestled in beds of moss, with clusters of brown topped rushes everywhere. On both banks of the stream just above the water's edge was a line of orange, the ripening capsules of *cynodontium virens*, a common alpine moss in the Canadian Rockies.

Again the flowers were gone, dense mats of crowberry grew everywhere and the ripening berries that covered the plants would provide many a feast for the mountain birds.

Here the trees were more distantly spaced, willows and other shrubs grew in clumps, and soft green mosses draped the rocks and softened the fallen trees. However, it was not until the treeless meadow was reached that any variety of flowers made an appearance, here they were very small and close to the earth, antennarias, alpine blue bells, blue-green gentians and speedwells dotted the meadow. Among the rocks near the bluffs of Tonquin Hill water willow-herb made large splashes of colour in the distance.

The flowers in the immediate vicinity of the camp were confined to a few species. Alpine spiraea trailed over the rocks and banked itself against old stumps where its creamy flowers mingled with the red heather and white heath.

The boggy meadows between Moat Lake and Amethyst Lakes were especially destitute of flowers. Dwarfed and sterile species of cinquefoil, erigeron, and anemone covered the rounded humps entangled with mosses and hepaticas. Here, too, the grasses had not yet blossomed and the only flowering plant that found congenial living conditions was the marsh marigold and that was already past blooming.

During a walk up Tonquin Hill an alpine flower garden was discovered in the scattered

trees not far from camp where red and yellow columbines grew with arnicas and paint brush against a white background of the fragrant wild valerian. Here, too, was the Indian hellebore with its bright green plaited leaves contrasting markedly with the fern-like feathery foliage of the western meadow rue, and the purplish leaves of the lousewort.

Once on the dry hillside above the treeline, these plants were no longer found. Small fleabanes with hairy, purplish calyxes nestled in the shelter of the rocks and alpine bluebells dotted the hillside. Golden grasses glistened and danced in the breeze, woolly antennarias and white and mauve daisy fleabanes grew close together only an inch or two above the earth. On the summit no flowers were to be found save the Sibbaldia mingling with the yellow lichens and grey, green mosses that covered the rocks.

A visit to Surprise Point revealed many species of flowers not seen near the main camp. A walk to the bluffs nearby took one over a carpet of many coloured flowers. Paint brush dominated, growing in many colours from creamy white to crimson, some were coral, others magenta and a few were white edged with pink. In a few minutes twelve different shades of this flower were gathered. Alpine spiraea and heather grew everywhere with showy fleabanes, columbines, arnicas and many others, an altogether attractive garden.

The return trip along the Amethyst Lakes disclosed many things not before noticed. The trail led one through a swampy meadow where many species of willow grew out of a bed of red and sage-green sphagnum moss. Swamp laurel with its lovely magenta flowers grew here, and in the woods at the edge of the meadow the charming one-flowered pyrolas with their nodding waxen flowers were found with a few plants of pyrola minor. Dwarfed bunch-berry grew everywhere and large clumps of golden arnicas brightened many a spot.

A complete list of the flowering plants was not kept. Even though there appeared to be a scarcity of flowers in Tonquin Valley there were in reality as many species as are found in most alpine meadows and the presence of the rare alpine bluebell only an inch or two high with its large bells of papery-blue more than compensated for species that were missing.

While the flowers were not as plentiful as they might have been it was a bryologist's paradise. The rocks that bordered the lakes were covered with many species of grimmias and rhacomitriums black and uninteresting to the casual observer but nevertheless doing their share to soften the picture of which they were a part. Hummocks in the boggy ground were rounded masses of polytrichum strictum topped by hundreds of orange capsules then in their prime. Many rare species of mosses were found on the banks and in the swampy ground, and the small pools of water that surrounded the large rocks that had been left there by a glacier or tumbled from the heights above were beautiful with the floating forms of several species of drepanocladus.

Ninety species of moss were collected, thirty hepaticas and many lichens.

IN MEMORIAM

Leroy Jeffers

On July 25th, 1926, the Alpine Club of Canada lost in his forty-ninth year one of its most active members, active both as a mountaineer and as a writer, through an aeroplane accident at Wanona, California. We refer to Mr. LeRoy Jeffers, who was flying from San Francisco in order to view the Sierra Nevada Mountains from the air. His climbing had been chiefly done in the Canadian Rockies, in the Cascade and Sierra Nevada Mountains and in the Tetons, where he made



L. Jeffers

a notable first ascent alone of the northeast peak of Mt. Moran. A great lover of nature, with a streak of mysticism, with which most mountaineers appear to be infected, he was fond of solitary climbing. His climbs and travels were described in his book "The Call of the Mountains" published in 1922. In addition to this literary achievement he was a frequent contributor to magazines on mountaineering, travel and library technique; for he was, during some twenty years, connected with the purchasing department of the New York Public Library.

In 1916 when the Bureau of Associated Mountaineering Clubs of North America was organized, Mr. Jeffers became its Secretary and remained in this position until his death. During the same period he acted as Librarian of the American Alpine Club and had under his care, in the New York Public Library, a valuable collection of Alpine books and photographs. He desired to be a means of bringing different mountaineering and outdoor clubs of the Continent into friendly contact with one another. The Annual Bulletin of these associated clubs, conducted by him for ten years, disseminated interesting and helpful information.

That the Alpine Club of Canada did not associate itself with the Bureau was a cause of disappointment to him. At the outset quite a few members, including the undersigned, were not only sympathetic but desirous of uniting; but unfortunately circumstances at that time did not favour Mr. Jeffers' desire being realized. Later when the scope of the Bureau had been enlarged to such an extent that distinctly mountaineering clubs were greatly in the minority, it did not appear that there was the same reason for the Alpine Club of Canada to join. Nevertheless the general aim of the Association, namely the preservation of natural scenery in the United States, of which Mr. Jeffers was an untiring advocate, could not be regarded as otherwise than admirable. Today, in Canada, interest in such a movement as that represented by the Canadian National Parks Association is still limited and feeble, and seems to require support of some organization of Outdoor Clubs, similar to that fostered by Mr. Jeffers.

—J W. A. Hickson.

Edward Clarence Paget, D.D. 1857 - 1927

The Very Reverend Dean Paget died at his home at Calgary, Alberta on March 27th, 1927. The following biographical sketch is from the Calgary Daily Herald of March 28th, 1927.

"Dean Paget was born August 14th, 1851, at Swithland, Leicestershire, England, and was the youngest of a family of six. His father was the Rev. Edward James Paget, rector of Swithland, and his mother a daughter of Major-General Thewles. In 1855 the family came to Canada and settled on the shores of Lake Ontario, at "Swithland Lodge," their first home.

"The Dean was educated at Keble College, Oxford, obtaining a first class in modern history in 1874, and his M.A. in 1877. He received the honorary degree of D.D. of Griswold College, Iowa, U.S.A., and honorary degree of D.D. of Bishop's College, Lennoxville, Canada, in 1916. His training for the ministry was received at Cuddesdon College, England.

"From 1875 to 1877 he was curate of Frampton Cottrell, England, and from 1877 to 1878 was assistant master of St. Paul's Cathedral church school, London, England. From 1878 to 1884 he was principal of Dorchester missionary college, London, and 1886 to 1887 assistant priest of Davenport Cathedral, Iowa, U.S.A. In 1887 he became rector of Holy Trinity, Muscaline, U.S.A., until 1889 when he became rector at Revelstoke, B. C. In 1900 he was appointed rector of the Pro-Cathedral at Calgary, and dean in 1901, a position he filled until his death.

"Dean Paget was the author of "Ideals of Christian Priesthood," and of four addresses on "The True Motive for Missionary Work," published in 1882."



Harry Pollard

Dean Paget

Dean Paget was a lover of the mountains and frequently in their midst, exploring and climbing. He was one of the little band of enthusiasts who journeyed to Winnipeg and founded the Alpine Club of Canada on March 27th and 28th, 1906. On that occasion he attended the luncheon of the Winnipeg Canadian Club, which gave its prestige to help organize the Alpine Club, and then spoke most feelingly of the power and majesty of the mountains and the, prescience of an Almighty Creator that is so closely identified with them.

Directly north of Wapta Lake, near the summit of the Kicking Horse Pass, there rises a sharp little peak. On one occasion the Dean, accompanied by my son, Major E. O. Wheeler, R.E., then a lad of some fourteen years, made the climb of the peak. The Dean, who was devoted to boys and always most helpful to them, insisted on the youngster leading the ascent, calling him his little Swiss guide. I was then mapping this section of the mountains for the Canadian Government and in honour of the ascent named the mountain Paget Peak, a name it now bears upon the official maps of record.

Dear old Dean, he was a merry wit, a cheery companion and a good sport. A wise counsellor and a true friend to all in need, his memory will long be cherished by the very many who loved him well.

—Arthur O. Wheeler.

Dr. Charles D. Walcott

When the Secretary of the Alpine Club of Canada asked me to write a memorial on Dr. Walcott and indicated the maximum space that could be allotted, to the subject, I recognized at once a task of more than usual difficulty. A mere list of his writings, of degrees bestowed, and of honorable positions held, would alone require a large part of the few pages dedicated to this purpose. It seems best, therefore, to sketch, briefly, the influences of home life and heredity no less than those of natural and acquired talents that led him step by step from an average environment in childhood to a position of the highest distinction in the scientific world.

Dr. Walcott was born in New York State on March 31st, 1850. His father died when the boy was only two years old and in consequence he came under the sole influence of his mother and sister, both, of whom had high ideals in relation to the duties of home life and to humanity in general. He had inherited from what he terms, "some unknown ancestor," a keen love of nature and tenacity of purpose that did not appear in his sister or either of his brothers and at the early age of seven began collecting various objects of natural history. At a period which corresponds to the third year of a high school, finding himself compelled by necessity and poor health to lead an active life, he went to the country to work on a farm. He arranged to do a certain amount of work for his board and lodging with reservation of ample time for field work and study. The farmer with whom he lived was somewhat of an idealist and nature-lover and exerted a wholesome influence on young Walcott. During this period he made a rich collection of fossils which was later sold to Harvard College.

At twenty-three years of age he came into contact with Louis Agassiz who strongly influenced his life and character. Of him he writes, "His confidence and enthusiasm have served as an inspiration whenever from any cause, personal or environmental, I was inclined to consider a line of action that would not be most conducive toward accomplishing that which had been planned for."

I shall now quote somewhat extensively from the Geological Magazine of January, 1919, and begin with his relation with Agassiz, of which Walcott writes, "In September, 1873, I said to



Charles D. Walcott

Professor Louis Agassiz that if opportunity offered I would undertake as one bit of future research to determine the structure of the trilobite. This promise has kept me at the problem for the past forty-five years.”

“In November, 1896, he received his first official appointment, becoming assistant to Professor James Hall, State Geologist of New York. He examined the Cambrian formations of the Appalachian belt all the way from Alabama to Quebec, and carried his researches on a more easterly line through New England and New Brunswick to Newfoundland. He also began a series of western studies which eventually included the most important known bodies of Cambrian and Pre-Cambrian rocks in Texas, Arizona, California, Idaho, Wyoming and South Dakota. In 1894 Major J. W. Powell retired from the office of Director of the Survey and Mr. Walcott was appointed by President Cleveland to succeed him. This position he held until his resignation in 1907 to become Secretary of the Smithsonian Institution. Since 1907, he has directed research investigations in various parts of the world and has personally studied large areas in the Rocky Mountains of British Columbia and Alberta, Canada. Of his work he says, ‘My own investigations have been mainly in the Cambrian and Pre-Cambrian strata, and have involved new and somewhat startling discoveries that helped to show how very much earlier life had developed on our planet than we had previously supposed.’ An important find in the Burgess shale, near Field, B. C., has given the finest invertebrate fossils yet found in any formation.

“To the War Service his contribution has been especially in Aeronautics. He has given two sons to the Air Service, one of whom, Benjamin Stuart Walcott, fell in combat over the German lines, December 12th, 1917, and the second son, Sidney, is on active service. His daughter, Helen, served for nearly a year as a nurse in a French military hospital.”

“Dr. Walcott has been favored by fortune in many ways. A short acquaintance with him suffices to reveal some of the causes which have contributed to his success. His commanding figure is an indication of exceptional energy and physical strength, and on seeing him one is not surprised that at a ripe age he is able to carry on his field work under arduous conditions. His unwearied industry also strikes one at once, for no opportunity for work is lost. The powers of specialization and generalization are equally developed with him; while missing no feature in the minute anatomy of some organism, he is able ‘to think in continents’ and has thus contributed largely to the elucidation of physiographic problems connected with Palaeozoic times. He can turn at will from one task to another. The onerous duties of administrative work in no wise check the enthusiasm with which he enters into his field labors.

“He has been fortunate in his home life. His first wife helped him with ever-ready sympathy throughout the years when he was rising to fame, and the present Mrs. Walcott: is already known to the geological world by her writings. . . .

“Dr. Walcott has been happy also in his environment, especially of later years, when he discovered the remarkable Cambrian faunas in a region which he himself terms ‘a geologist’s paradise.’ Truly the Burgess shale is a silent witness of the imperfections of the geological record, which the discovery of its treasures has lessened at a bound.

“Dr. Walcott has many friends in this country (England) who are proud of the friendship. He has been the recipient of honors here; he has encouraged British workers with much kindly help; some of his most brilliant discoveries have been made in the territory of the British Empire; and as we have seen he has done his work and suffered loss with the great war for the sake of civilization. He has forged a prominent link in the chain that unites the English-speaking people on the two sides of the Atlantic.”

Dr. Walcott did not have the advantages of a college education, but that he thoroughly believed in this was proven by the fact that his three sons were university graduates. He often regretted this lack, but the unusual influences that moulded his life had been in his case a partial if not complete substitute. He was respected by all those who came in contact with him whether in office or field work. He treated those in inferior positions with consideration, ever ready to lend a helping hand or encourage by a kindly word, and died beloved by all who knew him. He was endowed by a thoroughly scientific mind combined with rare business ability. So great was the confidence inspired by him in Congress that during the period of his Directorship, the appropriations for the Geological Survey were raised from about one-half million dollars to over three times that amount. His powers of insight and imagination were marvellous. On one occasion the writer met him when encamped in a wild valley of the Canadian Rockies and as we were talking about some rare fossils found that day on a neighboring mountain, he said, "Tomorrow I am going down the valley to near where you see that dark cliff and there I shall find these same species, only in a much better state of preservation." Little doubt but that he not only found them but also in the exact conditions predicted.

Without the advantage of prolonged schooling, and handicapped in youth by poor health, Dr. Walcott, through tireless industry and patient effort, aided no doubt by inherited traits, captured the rich rewards which were his due. At the time of his recent death, he had attained the highest honors which could be bestowed by the worlds' leading universities and scientific organizations and was recognized as the final authority along the special lines of research that he had selected for his life-work.

—Walter D. Wilcox.

Malcolm D. Geddes

Someone has said, "Tell me what are the objects which claim a man's spare time and I will tell you the character of the man."

Surely by this test we would say that Malcolm Geddes was a man of noble character, for who could love the great out-of-doors as he did, and not feel the refining and uplifting influence of God's great works of art?

It was a pleasure to travel with Malcolm Geddes—out in the woods, on the trail or climbing the rugged mountain sides. He so appreciated beauty that one became enthusiastic as he with the beauties around one.

He wrote quite extensively both in verse and prose, and one finds the breath of the out-of-doors permeating his writings.

It was only within the last ten years that Mr. Geddes became interested in the "Sport for Kings" as he called it, and one of the regrets of his life was that he had not joined the great brotherhood of mountaineers sooner. He was as enthusiastic as a boy about climbing and never missed a camp of the Alpine Club since the time he joined the organization. He was a born climber.

From the first year in camp, at Mt. Assiniboine, it was seen that he would be one of our most valuable members. This he proved in the subsequent years, not only in the great help he gave to the regular camp life by assisting in forming and conducting climbing parties but also by his untiring efforts for the strengthening and upbuilding of his beloved Alpine Club at large.

Wherever he went on his business trips he took along his box of lantern slides and upon every opportunity showed them, thereby creating interest in many for things Alpine. He took a



Malcom D. Geddes

great interest in the erection of the "Fay Hut" in Prospectors Valley, and as secretary-treasurer of the Hut Committee the burden of the work fell upon his shoulders but every duty was done cheerfully and well.

He was one of God's true noblemen, ever thinking of the other fellow and ever willing to lend the helping hand.

He will be sadly missed by all of our members, but the memory of his life will linger with us as an inspiration to seek not only the mountain heights but to aspire to the spiritual heights to which their rugged spires ever point.

—T. B. Moffat.

A. L. Mumm—An Appreciation

It was with much sorrow we learned of the death of our old comrade, A. L. Mumm. His record as a mountaineer and an author on kindred subjects is well known to all to whom mountains and their various phases are of interest.

He was born in London in 1859, educated at Eton and Oxford, and admitted to the Bar in 1886. In 1904 he joined the publishing house of his relative, Edward Arnold, and took part in its management until 1925.

While travelling in Tyrol in 1925 his powers suddenly failed him and he returned to England. In 1926 he started on a trip to the Far East. At Hongkong he became seriously ill but was able to start on his homeward journey. He died in the Bay of Biscay on December 2nd and was buried at sea.

As a Club, we first made his acquaintance in 1909 when he came to our Annual Camp, held that year at the Lake O'Hara meadows, with the Alpine Club party who were our guests for the memorable occasion. Among those present were Edward Whymper, the Right Honourable, Col. L. S. Amery, Godfrey Solly and Harold Dixon, all world-known men. It was an occasion that helped to make Alpine history in the Canadian Rockies.

Mumm then joined the Alpine Club of Canada as a Life member, and on many subsequent occasions he attended our annual camps accompanied by his dearly beloved guide, Moritz Inderbinen of Zermatt, who had been his "friend and companion in the Alps and elsewhere" for some thirty-five years, and who died two years before him.

Mumm's quietly courteous manner, his genial ways and his sympathetic interest soon endeared him to us all, and every Camp which he attended became a red-letter occasion. And dear old Moritz; how well he fitted in; how devoted they were to each other; and how they seemed to enjoy the special climbs and expeditions they made together.

Later, he was associated with Dr. Norman Collie, who did some very remarkable exploration and map work along the Saskatchewan and Athabaska route to Jasper and over the Yellowhead Pass to a considerable distance north of Mt. Robson, through what was then an almost trackless mountain wilderness, known only to a few hunters, trappers and prospectors.

In association with the Alpine Club of Canada, Mumm's record is read from the pages of the Canadian Alpine Journal:

In 1909, we find him at the close of the Club's Camp, with L. S. Amery, Geoffrey Hastings and Moritz on an expedition to attempt the ascent of Mt. Robson. The attempt was a plucky one but, owing to unknown difficulties of the route selected and the limit of time, was not successful. On the way in, at the ferry above Jasper Lake, the party received word of the ascent of the mountain

by the Rev. G. B. Kinney and Donald Phillips, and later Mr. Kinney was met by members of the party and congratulated upon his splendid feat. His ascent was made on the opposite side of the mountain to that attempted by Moritz. (Can. Alpine Journal, 1910, p. 1.)

In 1910, we again find Mumm and Inderbinen with Dr. Norman Collie at the base of Mt. Robson but, owing to heavy snowfall no attempt could be made to climb it. An attempt was made on Mt. Resplendent, but again heavy snow blocked the way, so exploration was carried to the mountain area lying immediately north of Robson Pass and west of Smoky River. They returned by a new route eastward, which brought them out at Lac Brule, an expansion of the Athabaska River at the Eastern Entrance to the mountain region. (Geographical Journal, March 1912).

In 1911, the same party continued the exploration and made the ascent of Mt. Bess (10,550 ft.). In his article in the Geographical Journal, noted above, Dr. Collie refers to the now famous Cariboo Mountain Group in the following words: "Far away in the distance beyond Fraser Valley and Tête Jaune Cache rises the great range of the Cariboo Mountains. We could see several high peaks, great snowfields and more than one great glacier. This mountain land, in the near future, should prove a great field for mountain exploration—for the Cariboo Mountains, in my opinion, are a finer range than the Selkirks." This prophesy has been amply verified by Holway, Munday and Carpé. (Can. Alpine Journal, 1912, p. 137).

In the 1913 Journal an article by Mumm, entitled "Some Characteristics of Mountain Ranges" is of vivid interest. It carries one to the Himalayas, to Mt. Ruwenzori, to the European Alps and to the Canadian Rockies and in reading it the charm of the successful raconteur vies with that of the explorer and mountaineer.

At the close of the first Mt. Robson Camp in 1913, we find Mumm and G. E. Howard with Inderbinen exploring up the Whirlpool River with the object in view of visiting Athabasca Pass and Mts. Brown and Hooker, and incidentally, if the fates were kind, of finding a route from it to the true Mt. Geikie, the kingpin of the famous Tonquin Valley, in distinction to the mountain now named Edith Cavell. The account of the exploration is in two parts, one by Howard and one by Mumm; they are delightful reading. At the time, several topographical features were named by them for members of the ill-fated Scott expedition to the South Pole, of which Mt. Scott, Scott Glacier, Mt. Evans and Mt. Gates have been confirmed. (Can. Alpine Journal, 1915, pp. 74 and 85.).

In 1920 when our Club celebrated the return of so many of its members from the war, Mumm with his faithful Moritz was present at the Camp at the foot of Mt. Assiniboine. They took much interest in the strange resemblance of one aspect of that mountain to the Matterhorn and recorded the similarity in a striking photograph which hangs in our Club House.

To the 1922 Journal Mumm contributes an article entitled "Mt. Everest." It was written before the close of the first Mt. Everest expedition in 1921 and gives a succinct history of the mountain and the various activities in connection with it. (Can. Alpine Journal, 1922, p. 1.).

Besides his many climbs in the Alps and Canada, he joined Mr. D. W. Freshfield in the expedition to the Mountain of the Moon in 1905 and Dr. Longstaff in an Exploration of the Garwhal district of the Himalaya when Dr. Longstaff made the first ascent of Trisul, (23,400 ft.)

As one who had taken a prominent part in the early explorations of the Canadian Rockies, Mumm had an alluring love for them and for his comrades of the Canadian Alpine Club. The last he attended was in 1922 at Palliser Pass when he came along, unattended by Inderbinen. After the camp he climbed around Glacier House, and then journeyed to Japan and New Zealand where he made several climbing expeditions.

The above brief sketch serves to show his keen interest in this mountain region and in its exponents. It is such protracted explorations and climbs amidst the unbridled forces of Nature, where patience, unselfishness and endurance are in great demand, that bring out the real character of the man, and it is this acid test that has established the memory of our dear comrade as one so well loved by all who knew him. His wide experience, his gentle ways and his ever ready and sympathetic interest have done much to teach us the true devoir of the mountain knight-errant. His memory will remain with us, and his friends of the Canadian Rockies will long miss him and his Moritz, who had so aptly patterned himself after his beloved patron.

—A. O. Wheeler.

ALPINE CLUB NOTES

Alpine Accidents 1927.

The loss of several of our members during last season adds fresh material to that thrilling chapter of mountaineering known as Alpine Accidents.

A few years ago, (it was shortly after Dr. Stone's death on Mt. Eon), one of the best known and most experienced of the Swiss guides in the Canadian Rockies, with whom I have desisted several times from what might have been first ascents, said to me: "The mountains have to get a few of the members yet." He meant members of the A.C.C. One wondered, especially after what was observable in 1926, how long the harvest would be delayed. People, even in English speaking countries, write romantically and anthropomorphically at times about the mountains taking their revenge. What they term revenge is most frequently the penalty paid for carelessness or over-confidence.

In the Alpine Journal, November, 1927, the Editor deplores these factors in the loss of Club members. It was, alas a contributing factor in the death of one of the most devoted and highly esteemed members of our Club, M. D. Geddes, a former Honorary Secretary, and an official when he met his untimely end on Mt. Lefroy last summer. Unroped, and contrary to sound practice, he proceeded to glissade down a steep slope, which had not been tested, and which is usually covered with hard snow or ice. Perhaps later in the day the surface snow would have been sufficiently soft to have rendered a glissade safe. Mt. Lefroy has now the distinction of having two victims, the other being Philip Abbot, the first known amateur climber killed in the Canadian Rockies, who, on his way up the peak, slipped near the same place as did Geddes, and unroped fell to his death. The loss of Geddes is a severe one to Canadian mountaineering circles; during my period of office I did not find any member of the Executive more enthusiastic and more unselfish in supporting the interests of the Club.

We do not yet know, and perhaps may never discover, what exactly occurred in the case of F. H. Slark and his inexperienced Swiss companion, Rutis Lauser, who perished on their attempt to climb the virgin Mt. Redoubt in the Tonquin Valley. Unless their bodies are found it will never be known whether they were or were not roped. Their route was followed up a long way from their last camp; it has been stated, to within 400 feet of the summit of the peak. It is surmised that they either slipped on a difficult traverse or were swept down by falling rocks. Slark was a daring, even rash, and not very experienced mountaineer. He got into difficulties the year before on an attempted first ascent alone of Mt. Kerkeslin near Jasper, which he afterwards conquered with the

Swiss, Max Weber. Contrary to widespread reports a most careful search was made for the bodies by Heinrich Fuhrer, Swiss guide at Jasper, and a companion named Niederer. (Since these notes were composed Mr. J. E. Johnson, who with Hans Fuhrer climbed Mt. Redoubt last August, has communicated the fact that the ascent had already been made by Slark and Rutis Lauser, who must, therefore have met their death on the way down.)

A further fatality in the Canadian Rockies last season does not immediately concern our Club, but it is instructive and therefore worth mentioning. It occurred on Mt. Wilson, north of the main Saskatchewan River, which was being attempted by two novices in the survey party of M. P. Bridgland, the well known surveyor and explorer of the Rockies, who at the time was some miles away from the scene of the accident. One of the young fellows slipped on a snow covered ledge, fell only a dozen feet, but struck his head severely and was instantly killed. No rope was used. It would be interesting to know whether Slark and his companion were roped. If not, then it would still be true that every mountaineering victim in the Canadian Rockies has been unroped. It still remains true that no fatality has occurred in the case of parties led by professional guides.

Does this suggest that amateur guides are never as good as professionals? Or that a rope should always be used? By no means! We have just stated certain facts from which it is not safe to generalize. Professional guides save much time on ascents and are usually, I think, owing to their greater experience, better on snow and ice than amateurs. But the truth of this depends upon the quality of the guide. At difficult places guides can be very helpful, although amateurs may be as good as they are on crags. As to the rope, its employment as a means of safety may be both a delusion and a menace. It depends on the party, on how it is used, and on the nature of the climb. There is, however, no gainsaying the fact that at times it is absolutely indispensable and at other times it constitutes a great safeguard. In the Alpine Club of Canada, and perhaps among American climbers generally, there has been a tendency to despise the rope.

As is generally recognized, the art of mountaineering consists in using one's physical strength, one's intelligence, and one's skill, due to experience and training, so as to reduce what might otherwise be formidable dangers to reasonable risks which are attendant on every sort of sport that is worth while. It is better to avoid risks such as avalanches after fresh snow and falling stones wherever possible, than to try to overcome them by bravery and dash. To start out in bad weather on high peaks is exceedingly foolish; it seems to be one of the recent crazes in mountaineering; it is a form of gambling with human life at stake, and with all the chances against the climber. And surely it is a miserable ending to be frozen to death.

When Alpine fatalities are due to carelessness or foolhardiness, they are regrettable because they bring mountaineering into disrepute. And it is sad when brilliant young climbers lose their lives through rashness, and still more so when this happens through avoidable causes. Nevertheless, I agree with those Swiss guides who say that such events enhance our interest in, and heighten the romance of, the mountains. I do not urge the argument that they attract an increased number of tourists. On making the first ascent of the season some sixteen years ago of the Schreckhorn, we found the upper very narrow ridge of rock in bad condition. The snow had to be cleared off with our ice axes before it was safe to proceed; it was slow and critical work. At one difficult place where we halted, and where there was just space enough to stand up with a sheer drop on each side, the leading guide urged me to be particularly careful, because it was here that an Englishman had slipped and been killed a few years before. The news braced me up, made me feel a keener interest in the climb, and I determined to go to the top and to do everything possible to avoid being another sacrifice.

The writer has met with a few accidents, the most serious of which occurred on a glacier near Arolla, Switzerland. It is doubtful whether it was preventable. He was for five hours in a crevasse some 70 feet below the surface of the glacier, unconscious part of the time, and considerably bruised and generally shaken up. If he had not been roped, only a dead body would have been found. It was a most enlightening experience; for it not only led to his seeing through some of the fallacies of the French philosopher Bergson after coming to in the crevasse, but it effectually opened his eyes to the risks of glacier travel and to the unwisdom of trusting implicitly to any kind of guide; and it cured a tendency to oromania. The unavoidable dangers of mountaineering in the Rockies are not unduly great, not so great as they are in the Swiss Alps. It is to this fact and to the fewer number of climbers in Canada that the small number of mountaineering fatalities hitherto is largely due.

—J. W. A. Hickson

Albreda Mountain

On July 15, 1928, I repeated the ascent of Albreda Mountain, previously climbed in company with E. T. Chamberlin and A. L. Withers on July 18, 1924. The summit was reached via the main glacier on the NW side of the mountain. An object of the ascent was to obtain views of the Gold Range and of the SE side of the Cariboo Range, the previous ascent having been in bad weather.

A really fine group of peaks was disclosed to the south. They are rugged and well glaciated and rise from a low base level. There appear to be at least half a dozen summits approximately equal to or exceeding Albreda Mt. in height. There may be more further south, hidden by the nearer summits. Valleys heading among these mountains reach the railway at various points between Lempriere and Blue River.

Views of the Cariboo Range, although somewhat marred by clouds, leave little doubt that the valley head identified by Professor Holway in 1916 as that of Mica Creek (McLennan River) is really the source of the Canoe River. Holway's identification was accepted by Professor Chamberlin and myself in 1924 and apparently also by Mr. and Mrs. Munday in 1925. The latter party presumably had a view down this valley from Mt. David Thompson. The McLennan River does not go so far back into the mountains and appears to head at the B. base of the Challenger group.

A communication published some time ago in the 'Gazette' of the Alpine Club of Canada—the issue in question is not at hand at this writing—reported that Albreda Mt. had been climbed during the railway construction days. It was intimated that photographs could be produced to substantiate this claim. No indication of any prior ascent has been found anywhere on the mountain. A number of views were taken from the summit on the ascent this summer and are available for comparison with any photograph which may be brought forward in evidence of a prior ascent.

A barometric elevation of about 10,200 feet was again obtained for Albreda Mt., this being in agreement with the results obtained in 1924.

—Allen Carpé.

The Cariboo Mountains—Correction

The Canadian Alpine Journal, 1925, p. 129, contains an account of an expedition by Mr. W. A. D. Munday in the Cariboo Mountains. The editorial introductory paragraph to this account contains the following statements:

“The latter party (Carpé and Chamberlin) made two major climbs, the first ascents of Mt. Titan (11,650 ft.) and Mt. Challenger (10,900 ft.). They also climbed three minor mountains: Gunboat (10,100 ft.), a shoulder of Mt. Titan, which they called Bivouac Pk. (10,150 ft.) and a triple summit (10,250 ft.) which Mr. Munday refers to as Holway’s Peak, he having made the first ascent of its northerly summit. ‘’

Mr. Munday’s account is also accompanied by a sketch map which is based upon that published by the writer in the Alpine Journal in May, 1925, on which the name ‘Holway’s Pk.’ has been placed against the point 10,225 of the original.

These identifications of the point climbed by Professor Holway are erroneous, nor do the three summits referred to constitute in any sense “a triple summit.” The cairn erected by Professor Holway and Dr. Gilmour is located, as explained in the Alpine Journal, on point 10,075, and this peak is further identified in several other ways as the one climbed by them. Points 10,250 and 10,225 are entirely separate summits and there was no evidence of prior occupation of either at the time of our visit. Point 10,225 (the northerly one) is a narrow rock ridge, instead of a snow dome as described by Professor Holway.

This misconception apparently accounts in part also for the mistaken reference to the number of mountains climbed by us. Our climbs are given in detail in the paper referred to above and amount to 6 (six) summits in addition to Mts. Titan and Challenger. The altitude of 11,650 ft. for Mt. Titan is evidently misprinted.

In regard to the question raised on p. 131 about the North Thompson and Shuswap drainages, I would refer to the brief discussion on pp. 403-404 of *Appalachia* for February, 1926, and to my account in the current issue of the same publication describing subsequent ascents of Mt. Welcome and Kiwa and the view from the latter.

—Allen Carpé.

Mt. Olive 10,270 Ft.

From the Little Yoho Camp, a party consisting of L. Grassi, leader, G. A. Gambs, N. L. Goodrich and M. Copley, made the first ascent of Mt. Olive, on July 31, 1927. They left Twin Falls Chalet where they spent the previous night, at 4:15 a.m., reached the summit at 2:50 p.m., and Twin Falls again at 9:50 p.m. From the end of the pony trail at Yoho Glacier they crossed to the east side of the Glacier, mostly on rocks, but the second stream had to be crossed high up on ice. They continued to ascend by a wooded “island,” crossed the east tongue of the glacier and gained the alplands on the North side of Gordon Creek. Continuing at that level they reached the glacier at the head of the Creek, passed around the east spur of Gordon to Vulture Glacier, and around the South, and higher peak of Olive by its East side, hoping to find a comfortable route to the col between the North and South peaks from its East side. They were forced, however, to climb steep snow and through debris covered slabs to the crest of the East arête of the South peak (that is, they climbed up the North face of this arête).

Reaching the arête near the middle, they found it very narrow and unstable and in one place roped down. A cairn was built on both peaks and names left. The arête between the two peaks is a mere wall. Fortunately, considering the hour, it was found that the descent by its West arête to Vulture col was very easy. It appeared also that an easy snow slope led to the North peak from the West. The ascent should have been made from the West instead of the East. The return was made by its same general route, after reaching Vulture Glacier, except that Gordon Creek was followed as closely as possible instead of keeping up on the alplands. This involved two or three bits of rock

work discouraging to tired climbers, and it was necessary to climb up to the ice bridge again. One route is about as bad as the other. The South side of Gordon Creek looks easier travelling, but it cannot be reached without a bridge of some sort. The Fall of the Waves is a most unusual spectacle, well worth seeing. It resembles the Famous Tuolumme "water wheels."

A faster party climbing from Vulture col, could cut two or three hours from the time.
—N. L. Goodrich.

OFFICIAL SECTION

Tonquin Valley Camp, 1926.

The twenty-first Annual Camp of the Alpine Club of Canada was held from July 26th to August 7th, 1926, in Tonquin Pass, near Moat Lake, in Jasper Park. The Provincial boundary line passed through the Camp so that a small portion of it was in Mt. Robson Park.

Across the valley the Rampart Peaks, Mts. Redoubt, Bastion, Geikie, Turret and Barbican showed a grim and forbidding wall. Easterly, down the valley were the Amethyst Lakes and the chain including Mts. Clitheroe, Maccarib, and Oldhorn with a glimpse of Mt. Edith Cavell.

In addition to the Main Camp, two subsidiary camps were pitched to give ready access to other peaks. One was at Surprise Point and the other in Geikie Meadows.

The weather was somewhat unusual. There were no big storms but conditions were suggestive of early spring or late autumn. The air was generally raw and there was little sunshine.

The new "cut off" trail was greatly appreciated. It shortens the distance from the railway considerably and affords some fine views. Mr. Goodsir, the Warden was helpful in many ways and the Club much appreciated his kind assistance and consideration.

Mt. Geikie naturally attracted first attention from the climbers. Messrs. Drinnan and Grassi worked out a new route which was used in the subsequent ascents. Mt. Redoubt was attempted unsuccessfully but another opportunity was not afforded. The first ascent of Mt. Turret was made; it is a mountain to be treated with respect as there is much rotten rock upon it. Successful first ascents were also made of Mts. Bennington and Blackhorn. All these were guideless.

Mts. Barbican and Bastion were the principal graduating climbs, though others coining within the Club requirements were accepted. Mts. Majestic, Clitheroe, Oldhorn and McDonnell were also climbed.

A trip was made across the Bennington Glacier from Surprise Point camp to Geikie Meadows Camp. It was found to be difficult and strenuous—not to be recommended generally.

The Swiss guides kindly lent by the Canadian National Bail-ways were Hans and Heinrich Fuhrer. Their work was skilled and kindly and highly appreciated.

The following passed the test for Active Membership:

July 28th, Mt. Majestic—

Miss M. E. Nickell; Miss E. Greer; A. J. Hills, A. F. McGill.

July 28th, Mt. Clitheroe, West Arête—

Miss F. Munroe.

July 28th, Mt. Bastion—

J. H. Hoag, B. Bibby, B. B. Gilman, B. F. Cleveland, B. F. Jefferson

July 31st, Mt. Barbican—

Miss A. H. Fuog, Miss H. Inkster, Miss M. Cameron, Miss H. Williams, Miss M. Lindeburgh,
Miss E. Strachan, Mrs. H. F. Thomson, P. H. Maguire, C. H. G. Codner.

One hundred and thirty-eight were put under canvas; among them representatives of the Alpine Club, England, The American and Swiss Alpine Clubs, the B. C. Mountaineering Club, the Appalachian Mountain Club, The Sierra Club and the Royal Geographical Society.

Members present were drawn from the following places:

CANADA

British Columbia:—Kelowna, New Denver, New Westminster, Sidney, Vancouver, Vernon, Victoria.

Alberta:—Banff, Calgary, Canmore, Drumheller, Edmonton, Gleichen, Lethbridge.

Saskatchewan:—Moose Jaw, Regina, Saskatoon.

Manitoba:—Winnipeg.

Ontario:—Ottawa, Toronto.

Quebec:—Buckingham, Montreal.

ENGLAND

Braintree, Garston.

UNITED STATES

California:—San Francisco.

Connecticut:—New Haven, New London.

Delaware:—Wilmington.

Illinois:—Evanston.

Indiana:—Bloomington.

Massachusetts:—Boston, Cambridge, Tufts College.

Missouri:—St. Louis.

Minnesota:—Minneapolis.

New Jersey:—Summit.

New York:—Brooklyn, Jamaica, Lawrence, New York, Scarsdale.

Ohio:—Cincinnati, Cleveland.

Pennsylvania:—Haverford.

Annual Meeting, 1926

The Annual Meeting was held in Tonquin Valley Camp on August 4, 1926.

The President, Dr. J. W. A. Hickson opened the meeting and called for the Minutes which on motion were taken as read.

Mr. Godsall presented the greetings from Lieut.-Governor of British Columbia and regrets that he could not be present.

Mr. Moffat presented the report of the Hut Committee stating that a desirable site had been found on a plateau above Prospector's Valley about six miles from Marble Canyon. Mr. Geddes said that \$1,635.59 had been actually collected and the probable balance required was, he thought, in sight. Mr. Moffat moved that in view of the amount of money raised the Committee be empowered to go ahead and have the Hut erected. Seconded and carried.

The Chairman explained that when the resignation of Mr. Wheeler from the Directorate was decided the Executive agreed to constitute a Committee of Calgary members to manage the Club House at Banff. The Committee had been formed and had been very active, it had engaged a managing hostess and added many improvements of which the most outstanding was the electric light. It was hoped that the Club House deficit which, while some years it had been of small amount was annual, might shortly become a profit. It was moved, seconded and carried that the action of the Executive with regard to the Banff Club House be endorsed.

The Hon. Treasurer presented his report, copies of which had already been sent to every member. The report was duly accepted.

The Secretary-Treasurer stated that the number of members remained curiously the same, the recruits balancing the losses. A new list of members would appear in the early spring of 1927.

Col. Foster then read a statement of the Mt. Logan accounts as follows:—

RECEIPTS

Subscriptions acknowledged in detail in Gazette.....\$12,793.48

EXPENDITURES

Organization: Meetings, Press, Telegrams, Stationary, Printing,

Office Exp., Sundries.....\$ 998.86

Travelling Exp. to and in Alaska and Freight

Charges\$1,105.04

Preliminary Equipment\$2,521.92

Food, Wages, Supplementary Equipment en route.....\$7,496.27

Refund to A. H. MacCarthy towards

Reconnaissance Expenses\$671.39

Total.....\$12,793.48

Mr. Wates stated that the lantern slides belonging to the Club now numbered about 1,400 and were available to all Sections and individual members.

The Club Badge was awarded to Mr. A. W. Drinnan.

Mr. Wheeler, the retiring Director, addressed the meeting, recalling the history of the Club of which he had made so great a part. Professor Fay made interesting comments on his past experiences in this connection.

An address of appreciation was then read by the Chairman to the retiring Director and a purse presented on behalf of the members of the Club. Mr. Wheeler feelingly acknowledged the presentation.

The Scrutineers of the ballots for the election of the Club officers then presented their report.

Hon. President—A. O. Wheeler, A.C., F.R.G.S.
President—F. C. Bell, C.M.G., M.D.
Vice-Presidents—H. F. J. Lambart, and C. G. Wates, A.C.
Hon. Secretary—Lt.-Col. W. W. Foster, D.S.O.
Hon. Treasurer—A. S. Sibbald.
Hon. Librarian—M. D. Geddes.
Hon. Photographic Secretary—C. G. Wates.
Secretary-Treasurer—S. H. Mitchell.
The report was duly accepted.

The retiring President wished to be the first to congratulate the new officers and the Club on having chosen them, especially his successor, Dr. Bell, who would see the mountaineering standard of the Club maintained. He did not think that the mountaineering accomplishment of new members was an important consideration but that the awards of the badge should be jealously guarded. It would always be a satisfaction to him that the Mt. Logan expedition was brought to a successful conclusion during his term of office, and that the first Club Hut had every prospect of a rapid erection. Such huts would enable members to make a round of tours under reasonable conditions apart from the annual camps. He made several suggestions as to amendments in the Club Constitution.

Dr. Bell was then introduced as the incoming President by the Chairman, and took the chair.

The Chairman stated that “owing to the retirement of Mr. Wheeler new arrangements must be made to carry on the business of the Club.” An amendment to the Constitution was discussed and finally took the following shape:—

“There shall be appointed by the Executive Board at its first meeting after the Club’s biennial election of officers a Committee of Management, consisting of the President and two other members of the Executive Board, which shall have the immediate management of the business, property and general interests of the Club subject to the authority of the Executive Board, This Committee of Management shall be furnished by the Executive Board with such clerical assistance as may be necessary to carry on the affairs of the Club and for which the Club can provide salaries.”

The Committee nominated by the Executive Board consisted of Dr. F. C. Bell, Col. W. W. Foster, and Mr. T. B. Moffat.

On motion of Mr. Munday, the Club expressed its sorrow at hearing of the sudden death of Mr. LeRoy Jeffers, who had been a member of the Club since 1913. The Chairman announced that an In Memoriam notice would appear in the next issue of the Journal.

Mr. Geddes proposed a hearty vote of thanks to the Warden Mr. Goodair for the hospitality of his cabin and many kindnesses which was carried.

A vote of thanks was proposed and carried to the Canadian National Railway for its liberal assistance in the matter of the camp equipment transportation, the Swiss guides, the station agent at Geikie and other kindnesses, which was carried.

Votes of thanks were also carried to the late President and the retiring Club officers; to Mr. Donald Phillips for his construction and management of the Camp and constant, kindly attention; Mr. S. H. Mitchell for his welcoming and arousing ways, to the Ladies’ Committee under the indefatigable leadership of Mrs. Sampson and Miss MacLennan; and to the volunteer guides.

The meeting then adjourned.

Banff Club House, 1926.

There were many improvements made in the Club House during 1926. The principal and the most highly appreciated was the installation of the electric light. The Club is grateful to the Parks Department for its assistance and consideration.

As usual many visits were received from strangers desirous of information concerning the mountains, their geography and their history.

The most notable climb made in the neighborhood during the season was the first guideless climb of Mt. Louis. The first climb was also made of the eastern pinnacle of Castle Mountain.

The number of guests was 294, drawn from the following places:—

CANADA

British, Columbia:—Keremeos, Monte Creek, Salmon Arm, Sidney, Vancouver, Williams Lake.

Alberta:—Banff, Calgary, Carbon, Drumheller, Regina, Edmonton, Rumsey.

Saskatchewan:—Battleford, Moose Jaw, Regina, Saskatoon.

Manitoba:—Winnipeg.

Ontario:—Newmarket, Ottawa, Peterborough, Port Credit, Toronto.

Quebec:—Montreal.

ENGLAND

Braintree, London, Ripon, St. Albans, Southend.

INDIA

Cachar.

SWITZERLAND

Berne.

UNITED STATES

California:—Berkeley, Pasadena.

Connecticut:—Greenwich.

Illinois:—Chicago, Galesburg.

Massachusetts:—Boston, Fall River, Milton.

Minnesota:—St. Paul.

Missouri:—St. Louis.

Nebraska:—Omaha.

New Jersey:—Convent, Summit, East Orange.

New York:—Brooklyn, Lawrence, New York, Poughkeepsie.

Ohio:—Cleveland.

Pennsylvania:—Philadelphia, Pittsburg.

ISLAND OF MALTA

Valetta.

Little Yoho Camp, 1927.

The twenty-second Annual Camp of the Club was held in the Little Yoho Valley from July 19th to August 2nd, 1927. The lovely site familiar to many members as that of the last camp before

the war—war was declared while the camp was in being— was as attractive as before though owing to the long preceding winter, flowers and growth generally were late in appearance. The weather, bad for construction, was delightful. Only one storm occurred, certainly a bad one, but it was in the evening and no one was inconvenienced.

Most of the graduating climbs were made on Mts. President and Vice-President. Mt. Marpole, an interesting rock climb was accepted as entitling to the Badge. Mt. des Poilus, still often spoken of by its former name of Mt. Habel, was climbed several times but was a long distance from camp. Isolated Peak, Mt. Kerr, and Mt. McArthur being near the camp were very popular. One first ascent was made. On July 31st Messrs. L. Grassi, G. A. Gambs, N. L. Goodrich, and M. Cropley climbed Mt. Olive near Mt. Gordon by a difficult route returning by a much simpler way. The mountain was named by Prof. Harold Dixon in 1897 from the colour of its rock.

The Yoho region abounds in opportunities for delightful excursions. Twin Falls, the Yoho Glacier, Kiwetinok Lake and the Pass beyond, Takakkaw Falls, Yoho (miscalled Summit) Lake, Burgess Pass, all attracted members, again and again.

Dr. Bell, the President, ill in Vancouver was greatly missed as was also Mr. Wheeler, called elsewhere by business. It is the second camp in whole history of the Club from which Mr. Wheeler has been absent. Other members of the Executive were unable to be present but those there worked hard and all went well.

Among the guests of the Club, Mr. N. E. Odell of Mt. Everest fame was the most outstanding. He delighted the camp by his story of the last attempt told in vivid language at the camp fire. Mrs. Odell, Mr. W. H. Lewin, from England, Mr. Harkin, the Commissioner of Dominion Parks, and Mr. Murray Gibbon, of the Trail Riders and the C. P. R. were welcome visitors. Senator Bostock was the first visitor of political standing to visit camp. It is hoped all may be seen often again.

The following passed the test for Active Membership:

July 21st, Mt. President—

Miss M. M. McIntosh, Miss B. D. Sprague, W. Winter H. Richardson, H. Simpkins, M.L. Cropley, I. Vanderbergh, Bert Souch, H. F. Smith, Jr. Miss, B.A. Burrows

July 22nd, Mt. President—

Miss C. Murray, Miss M. Keyes, Miss J. Bostock, N. Kennedy.

July 22nd, Mt. Marpole—

W. J. Oliver.

July 23rd, Mt. President-

W. J. Sykes, C. Newhall.

July 24th, Mt. President—

H. F. Smith, Jr.

July 27th, Mt. President—

V. Ball, K. F. Rodgers.

July 30th, Mt. President—

Miss B. A. Burrows.

One hundred and one were placed under canvas, among them representatives of the Alpine Club, England, The American and Swiss Alpine Clubs, The Climbers Club, the B. C. Mountaineering Club, the Appalachian Mountain Club, the Ladies' Alpine Club, and the Royal Geographical Society.

The Members present were drawn from the following places:

CANADA

British, Columbia:— Field, Monte Creek, New Denver, Nelson, Vancouver, .

Alberta:— Calgary, Canmore, Carstairs, Drumheller, Edmonton.

Saskatchewan:— Regina, Saskatoon.

Manitoba: — Winnipeg.

Ontario: — Ottawa, Toronto.

Quebec: — Montreal.

ENGLAND

London.

SCOTLAND

Ayr.

UNITED STATES

California:—Alameda.

District of Columbia:—Washington

Illinois:—Chicago.

Massachusetts:—Boston.

Minnesota:—Minneapolis.

New Hampshire:—Hanover.

New Jersey:—Summit.

New York:—Brooklyn, New York

Ohio:—Cleveland.

Wisconsin:—Beaver Dam.

Annual Meeting, 1927.

The Annual Meeting was held in the Little Yoho Valley Camp on July 29th, 1927.

In the absence of the President, Col. W. W. Foster, Hon. Secretary took the chair. The minutes of the previous meeting were read and passed.

Col. Foster expressed regret at the absence of the President caused by serious illness. He read a telegram from him expressing regret at his unavoidable absence and best wishes to members in Camp.

He recalled the fact that the present camp site was the same as that of 1914, war having been declared during the Camp. He emphasized the duties as well as the pleasures of those who were privileged to visit the mountains. He explained that the duties of the new Committee of Management which had succeeded Mr. Wheeler's long Directoriate had been somewhat difficult as everything was new.

The address of Mr. Wheeler, Hon. President, was read. Mr. Wheeler regretted his unavoidable absence, and the absence through illness of the President. He acknowledged the beautifully illuminated address presented to him after the Tonquin Pass Camp. He urged the Club to maintain its high sense of responsibility as the representative of the Canadian Rocky Mountains.

The Hon. Treasurer's report was then read and passed.

Mr. Allan, Chairman of the Club House Committee, reported on the details of the Club House history. Many improvements had been made of which the principal were the appointment of a managing hostess, and the installation of the electric light. He hoped that at an early date the Club House would show a substantial profit. Attendance was good. The tent houses were wearing out and should be replaced by wooden cabins. Such cabins would cost in the neighbourhood of \$500 each. It was suggested that the various Sections might subscribe to build one each to be named after the Section. Col. Foster said that it would be a good idea to prepare a definite estimate and see if one or more Sections would try to raise funds. It was moved and carried that this should be passed on to the Sections in due course.

The Chairman said Mr. Geddes would present a report on the Club Hut in Prospectors Valley which the Executive had decided to call the Fay Hut.

Mr. Geddes detailed the action taken. A site had been selected after inspecting several places, the contractor had been taken there and the contract let. Mr. Moffat described the hut and its surroundings.

In this connection a vote of thanks was passed to the C.P.R. and Brewster Transport Co.

The Reports on the Club House and the Fay Hut were received and adopted.

The Chairman announced that for some time it had been evident that the Constitution might be condensed and simplified with advantage. The Executive had appointed a committee to deal with the matter consisting of Mr. Sampson, Chairman, Mr. Keyes, Mr. Geddes and Col. Foster. Members were requested to send any well thought out suggestions to Mr. Sampson.

Badges were awarded to Messrs. W. Innes, H. M. Whimster, F. J. Green, H. E. Sampson, Miss E. M. Henley and Mrs. C. A. Richardson.

Votes of thanks were passed to the Dominion Parks for help with trails and the installation of electric light at the Banff Club House, to the C.P.R. for the use of the Swiss guides, assistance in transport of equipment and many other ways, to the volunteer guides, to the Ladies' Committee coupled especially with the name of Mrs. C. A. Richardson, and to the Swiss guides.

Mr. Keyes on behalf of the meeting expressed the very great regret felt that Dr. Bell could not be present and the hope that he would soon be restored to health. The Chairman promised that he would convey the message to Dr. Bell on his return.

A hearty vote of thanks was passed to Mr. H. F. Lambart for the collection of enlarged photographs of the Mt. Logan expedition he had presented to the Club.

The meeting then adjourned.

Banff Club House, 1927.

The Club House had a very successful year, the registration being largest since 1920 in which year, the Annual Camp being held at Mt. Assiniboine, many members stayed in Banff on their way.

Considerable addition was made to the domestic equipment and gifts were received from various Sections of the Club and friends. It is hoped to make various improvements during the coming season. The canvas tent houses built in 1909 are nearing their end and timber huts will be substituted as opportunity offers.

The season from the weather point of view was not a very favourable one, and the Club

House was closed early in September. Several climbs were made of Mt. Edith, and Mt. Louis was again climbed without professional guides. Mt. Norquay is always a very popular training climb, made several times a season. Mts. Cascade and Rundle are voted dull.

The new climbing hut in Prospectors Valley has proved a great success. Situated well out of the way of the destructive tourists, it makes a fine base for climbing the Ten Peaks and other mountains in the neighbourhood. The Club is greatly indebted to the Parks Department for improving the Prospectors Valley Trail which will probably be well used in future. The Club hopes as conditions permit that huts will be erected on other suitable sites. That way lies the development of original climbing and perfection in the mountaineering art.

Many distinguished visitors were at the Club House including General Sir W. Furse of the Imperial Institute, Captain Douglas King, Secretary of the War Office, General C. H. Mitchell, of Toronto, Col. Crookshank, M.P., of His Majesty's Body Guard, General Boss of Montreal, Mr. N. E. Odell, of the Mt. Everest expeditions, and others. As always the Club House was a centre of information on mountain matters to many strangers.

The attendance at the Club House was 339, drawn from the following places:

CANADA

British Columbia:—Monte Creek, New Denver, Shawnigan Lake, Vancouver, Victoria.

Alberta:—Banff, Big Valley, Calgary, Canmore, Carstairs, Chinook, Craigmyle, De Winton, Edmonton, Innisfail, Jasper, Loughheed, Nightingale.

Saskatchewan:—Moose Jaw, Badville, Regina, Saskatoon.

Manitoba:—Brandon, Hamiota, Winnipeg.

Ontario:—Ottawa, Toronto.

Quebec:—Montreal.

BELGIUM

Brussels.

ENGLAND

London, Bipon.

IRELAND

Dublin.

SCOTLAND

Ayr, Edinburgh, Glasgow, Kirriemuir.

TASMANIA

Hobart.

UNITED STATES

Alabama:—Birmingham.

California:—Berkeley, Long Beach.

Connecticut:—Greenwich, New Haven, Shelton.

District of Columbia:—Washington.

Illinois:—Evanston, Rockford.

Massachusetts:—Boston, Concord, Cambridge, Lynn.

Maryland:—Baltimore, Catonsville.

Minnesota:—Minneapolis, St. Paul.

Missouri:—St. Louis.

New Hampshire:—Hanover.
 New Jersey:—Plainfield, Rutherford, Short Hills, Summit.
 New York:—Brooklyn, Long Island, New York.
 Ohio:—Cleveland.
 Oregon:—Portland.
 Pennsylvania:—Philadelphia, Pittsburgh.
 Vermont:—Burlington.
 Washington:—Seattle.
 West Virginia:—Wheeling.
 Wisconsin:—Beaver Dam.

The Club Library

As will be seen below several books of value and interest have recently been added to the Club Library. Outstanding of course is the Palliser Report presented by Col. Amery, a very rare book which the Club has long desired to own.

Among books we should like to see on our shelves are:—

North American Wild Flowers. By Mary V. Walcott.
On High Hills. By Geoffrey Winthrop Young.
Ice Ages: Recent and Ancient. By A. P. Coleman.
The Glittering Mountains of Canada. By J. Monroe Thorington
The Art and Sport of Alpine Photography. By Arthur Gardner.
Below the Snow Line. By Douglas W. Freshfield.

New book shelves are badly needed.

The list of additions follows:—

The Makers of Canada. Presented by H. E. Sampson.
Travels and Ascents among the Higher Canadian Rockies. By Howard Palmer. Presented by the author.
Mountaineering in the Land of the Midnight Sun. By Mrs. Aubrey LeBlond. Presented by the author.
Did Peary Reach the Pole? By W. H. Lewin. Presented by the author.
Report on Survey and Preliminary Operations to determine the Location of the Canadian Pacific Railway up to the end of 1876. By Sandford Fleming. Presented by J. A. Kirk.
Report of the Country Between Lake Superior and the Red River Settlement and between the latter place and the Assiniboine and Saskatchewan Rivers. By S. J. Dawson. Presented by J. A. Kirk.
The Rhythm of Life. By Rhoda Walker Edwards. Presented by the author.
Journals and Letters of La Verendrye and His Sons. Edited by Lawrence Burpee. Subscription. Harvard Mountaineering. Exchange.

The Epic of Everest. By Sir F. Younghusband. Presented by N. E. Odell.

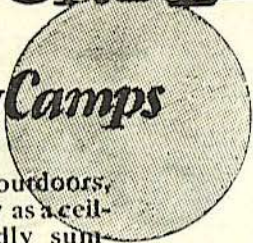
The Fight for Everest. By Col. E. F. Norton. Presented by C. Berkley.

Journals, Detailed Reports and Observations relative to the Exploration by Captain Palliser between the Western Shore of Lake Superior and the Pacific Ocean during the years 1857, 1858, 1859 and 1860. Presented by Right Hon. Col. L. S. Amery.

☆

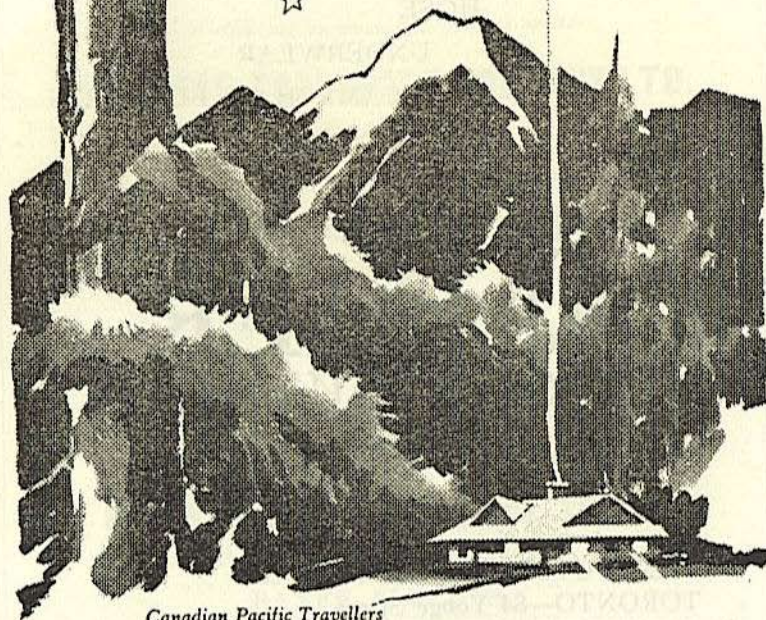
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Single Room, with bath	- - - - -	4.50
Double Room, with bath	- - - - -	7.50

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