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A. A. McCOUBREY

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ARTICLES

Articles for the Journal should be sent to the Editor, A. A. McCoubrey, Engineering Dept., Canadian Pacific Railway, Winnipeg, Man. Contributors are reminded that material for publication should be in the hands of the Editor at as early a date as possible, and NOT LATER than November 15, of each year.

Manuscripts should be typed if possible, with double spacing. Photographs for publication should be finished with glossy surface. Each photo should be pasted on a slip of paper bearing the caption and author's name. It is inadvisable to use paper clips to fasten photos or to write on the backs of photographs.

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Outpost Lake.
Painted By F. H. Brigden, O.S.A., A.R.C.A.

CANADIAN ALPINE JOURNAL

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HIGH PEAKS OF THE COAST RANGE

By W. A. Don Munday

Exploration is always exciting. The region north of Mt. Waddington "called to be wandered over and possessed by wandering" although my wife and I possessed a general knowledge of most of it and the chief gaps had been filled in by the 1932 expedition of Henry S. Hall, Jr., down the West Homathko river. So irresistible proved Mr. Hall's very generous invitation to join him in 1933, that we prepared in less than a day and a half to leave Vancouver with him on June 26th.

So far as concerns alpine literature our route from Vancouver across the Coast range is practically unknown. By Union steamship we travelled to Squamish at the head of Howe sound; the narrower upper part of this inlet conforms to the fiord type so grandly developed in the greater inlets of the mountainous British Columbia coast. When Howe sound in 1792 disappointed Capt. George Vancouver in his search for the "Northwest Passage," he wrote of the enclosing mountains as "the stupendous snowy barrier, thinly wooded, and rising abruptly from the sea to the clouds .... exhibiting altogether a sublime, though gloomy spectacle."[1]

From Squamish the P.G.E. Railway follows first up the wide Squamish valley, with the bold Tantalus range 8000 feet above; then up the Cheakamus river gorge which gives glimpses eastward of peaks of Garibaldi Park. At Garibaldi (Daisy lake) station, Alfred E. Roovers, Donald W. Brown and Hans Fuhrer, the guide, boarded the train after a week in the park.

Moist coastal vegetation gradually changes to that typical of the dry interior as the railway traverses successive valleys northward. Alta and Green lakes repose in the first pass; beautiful in color and setting, Anderson and Seton lakes occupy much longer glacial basins. Climbers possess comparatively little first-hand knowledge of the adjacent mountains, which rise 6000 to 8000 feet above the main valleys—throughout most of the Coast range the vertical relief exceeds that of the Rockies.

The stupendous Fraser canyon, entered at Lillooet, and best seen on the southbound trip from 2000 feet up on its wall, is no mere duplication of the section seen along the two transcontinental railways. Beyond this the P.G.E. climbs to the typical plateau country.

At Williams lake in the morning T. J. Hodgson loaded our belongings into a truck; comfortable seats and the open top made it an observation car. The Chilcotin plateau displays more beauty and interest than I had imagined. Prairie and meadow alternates with open growths of poplar, fir and jackpine. The skies can be glorious with shining cumuli, but this day clouds sprawled in showery mood.

1 Vancouver's Voyages, Vol. II, p. 195.

We expected to travel the 165 miles to Tatla lake in ten hours. Bull canyon, about five miles beyond Tom Lee's at Alexis creek (where we had a meal casually termed "tea"), is a show place along the blue-white Chilcotin river. Divergent versions of Indian traditions agree that here the local Anahim tribe exterminated raiding Bella Coolas; one story relates how only one raider was spared, to carry the warning home, after being dangled over the purple lava cliff so that he might see his bound companions hurled down it. In a more Alpine version the defenders rolled rocks down on the invaders.

When we topped Loon Lake mountain, about 4000 feet, clouds beyond the West Homathko portal to the Coast range prevented our determining if Mt. Waddington (always "Mystery Mountain" in common usage) is visible from the road. To westward, Monarch mountain's violet silhouette loomed against the fiery west. For miles along the wooded flank of the range the red glare of sunset intensified the hue of blight-reddened pine foliage. Headlights failed but the driver accomplished the 1000-foot descent of the narrow road to Robert Graham's ranch at Tatla lake by 10.30 p.m.

In the morning we bumped along fourteen miles more to Bluff lake where the Homathko has definitely entered the mountains. Here Pete McCormick, H. T. Valleu and Pete Evjen met us with seventeen horses. To save confusion we called Evjen "Ed." Valleu did not volunteer his Christian name. Pete confessed later that at this time he felt misgivings about taking a woman beyond Middle lake. We spent the night at Valleu's beautifully located homestead at the south end of Bluff lake.

We started late in the forenoon of the 29th. The country here bears some general likeness to the Rockies; trees and flowers are somewhat similar, too; the typical jagged granitic sky-lines do not appear. Roses scented our path through open woods; other typical flowers included pink garlic, pink and yellow vetch, windflower, phacelia, beardtongue, arnica and polimonium humile; green mats of bearberry hid the ground.

Clouds huddled on the mountains down the valley but, when we reached the first point where Waddington may be seen from the trail, I discovered its summit clear, dwarfed somewhat by nearer Mt. Tiedemann.

We reached Middle lake soon thereafter. Mysterious patterns of violet shadow drifted across green water. Pleasant heights adjacent to the lake confer no special distinction upon it, but no lake can lack distinction that commands a view directly down the valley to the iciest aspect of the mightiest mountains of the Coast range.

To mark our passage down the rocky western shore a feeding bull moose lifted his dripping head from the brown water of one of the lagoons behind long sand spits built by wind and waves at the north end of the lake. Middle lake owes its existence in part to damming of the valley by the alluvial fan of what Valleu termed "Hell-Ravin' " creek. He waited down-stream to save any horse swept off its feet in the ford.

Of the country beyond this Hall wrote "Back-packers would have a hard time of it in this valley—even the Mundays." We laughed at the implied compliment but soon soberly confirmed his opinion of the concentrated evilness of the valley.

We rode down river channels, crashed through flooded thickets, floundered through swamps, until we camped about an hour from Twist lake on a dune-like ridge in willow thickets. In chill weather next morning we continued through swamps to old sand dunes, plunging from them into swimming water in Twist lake to reach an under-water offshore sand bar by which to regain the west side of the valley. It was an extraordinary sensation during much of the 25-minute ford to watch foam-edged green waves breaking over one's saddle.

Granite creek's boulder fan contributes largely to the existence of Twist lake, about two miles long. These creek names are those applied by Valleu. At Twist lake we passed from the older sedimentary and volcanic rocks to granitic rocks which form most of the Coast range.

The swift Granite creek ford was about 100 feet wide. Dead poplars just beyond it bristle forlornly in a new lake formed within recent years by an exceptional out-rush of rocks from a comparatively small creek, with resultant damming of the Homathko. The river, after flowing southwest from Bluff lake, here has turned southward, eventually to swing to the southeast to meet the East Homathko.

Deep channels, swamps, down timber, thick brush and coarse rock slides alternated, even mingled, their obstructions. Pack-horses fell and had to be rescued. When one stepped off a flooded ledge into deep, swift water Valleu nearly drowned two saddle horses in succession before reaching it; there were tense moments.

We camped between the second and third channels of Crazy creek. Just past the third channel next morning we faced the most critical ford of all, the now greatly enlarged Homathko, swift "swimming" water, but fortunately not exceptionally high. Hall had turned back at Crazy creek in 1932, but this year had arranged to have trail cut down the east side of the river and, if possible, up Scimitar creek (Valleu's Goat creek). Instead of this the trail had been carried five miles still farther down the river to "Glacier creek" where Valleu said a glacier came down within a few hundred feet of the river and half a mile distant.

This day the horse carrying the ice-axes and pack-boards fell into a big hole in a rock slide and dragged Valleu's horse with it; only pack-boards were broken. By this time we were adept at remoulding rock slides "nearer (slightly) to the heart's desire"—Hans rivalled a grizzly unearthing whistlers. Rain began, a needless affliction where swamps and deep sloughs abounded. Ed charged a bear in a meadow lest it stampede the pack-horses. We camped in rain opposite Scimitar valley.

From some source which Valleu chose to make seem mysterious he produced a crosscut saw to cut dead spruce to haul to the river to build a raft on July 2. In the afternoon seven of us crossed the river. Valleu led us about two miles through spruce swamp and thickets to the mouth of Scimitar creek canyon. Henry, Alf and Hans scouted up the creek while the rest of us chopped trail back to the river. Four good-sized wolf pups ran forward curiously within thirty yards of us; Valleu apparently over-shot them.

Ed and Valleu rafted the scouting party back across the river at dusk. They reported their route as excessively difficult for back-packing without a trail, while trail-making would apparently take too long.

In the morning we cleared a tow-path along the river, as the raft swept a long way down at each crossing. By noon we rafted supplies across. Steep banks and snags gave Pete anxiety in crossing his three picked horses, and Nigger nearly drowned. Canyon camp, established in the afternoon at about 2700 feet, was remarkably compact, the five tents fronting a narrow lane near a clear spring in tangled woods.

Fire had ravaged Scimitar valley seven or eight miles to the glacier, so fallen timber barricaded the thick second growth. By some obscure process location of the trail fell to me. To work past the canyons the trail mounted about 500 feet along slopes composed mainly of coarse morainal debris; on the 5th a rough foot trail had been cut about two and a half miles, and in the afternoon Henry prospected up the valley to the glacier, confirming his previous conclusion that the upper part offered no special difficulties. Two more days failed to clear out logs enough to give horses passage all the way down to the creek.

On the 8th Pete decided to risk taking the horses up the creek channel past the uncompleted section. In this Valleu got his regular daily ducking—he claims to be unable to swim, too. At the canyon mouth the creek temperature was 34°, and 32° F. near the glacier. The horses finally followed the southern shore. We carried good-sized packs and cut some trail in places along the opposite bank. Thus burdened we probably looked as uncomfortable as we felt perched atop pack saddles when the horses ferried us across the two turbulent creek channels to base camp in a cottonwood grove a quarter of a mile from the ice front at about 3200 feet. A score or more goats studied us from high on the cliffs.

In the morning Hans and Alf, well primed by Valleu with tales of goat stalking, climbed in this direction to a summit, probably over 8000 feet, between Cataract and Scimitar glaciers. Alf returned with a spirited account of Hans scrambling down headlong and with his ice-axe dispatching a goat that still lived after falling and sliding 1200 feet. We swallowed Alfs narrative more readily than some elastic parts of the goat.

Henry, Donald, Phyl and I went up Scimitar glacier this day, mainly to learn snow conditions on it towards Waddington. Heavy snow had been fairly general throughout British Columbia, followed by a late spring, but in this area I concluded snow conditions showed no marked difference from previous seasons.

When we turned the first big bend Mt. Chris Spencer gleamed ten or eleven miles up the curving corridor. Then Mt. Hickson appeared, the grandest rock face rising directly from Scimitar glacier; next a radiant ice-fall poured down 2000 feet from the great cirque enclosed by Tiedemann, Asperity, Serra and related giants. Half-unreal in the majestic brilliance of precipices plated with driven snow or hung with toppling ice walls, Mt. Tiedemann stood nearly 8500 feet above us.

We crossed to the mouth of a mysterious valley opening on the west plainly below the level of Scimitar glacier; we found the ice stood 250 feet above the floor of the green glen. We named it Pocket valley (elevation 4200). A mile up it a moraine-covered glacier curved out of sight parallel to Scimitar, beneath which it drained.

We tramped a mile amid flowers and avalanche-crumpled willows and firs, then up the snout of Parallel glacier till the long defile opened ahead. Phyl and I, at least, thrilled, for most of this deep gorge had remained unrevealed in views from Waddington. A huge medial moraine stretched about four miles to a thousand-foot ice-fall; several miles farther a section of the glacier flowed through the only gap in the eastern wall, tumbling 3000 feet to Scimitar glacier opposite Mt. Hickson. Mt. Geddes, at the head of Parallel glacier, hid behind one of the fine 10,000-foot mountains ranged along the west side; from a deep gorge between two of these :an important branch glacier evidently issued. From a pass, about 7000 feet, north of us an unbroken mountain wall extended down Scimitar valley almost straight to the Homathko, a distance of ten or eleven miles.

Description of Scimitar glacier to Pete led him to volunteer to try to take horses up it—round the shoulder of Hickson, we hoped. Next morning he went up to see the glacier for himself. We counted on spending much of the day chopping a path up the steep tongue for the horses. His delayed return resulted in Hans going in search; some time later Henry and I followed. Pete had gone farther than at first intended. Together we picked a route for the horses. Valleu and Ed arrived at camp in the afternoon with food, gasoline and other equipment for a climbing camp up the glacier. Leaving the three horses, they then started back to Bluff lake for more food. Rain closed the day. Weather threatened on the 10th while we prepared for a lengthy stay at higher levels.

The llth dawned cloudily but cleared later. Mounted behind a pack, Pete crossed the bad

ford at the glacier snout. He took across one end of a rope by which to guide the other horses; when he pulled on the second horse the knot tied by one of the party pulled loose and Pete could not heave the rope back across the wide stream. The two horses for a time refused to enter the icy torrent.

Though not sharp-shod, the horses did well on the steep snout. A narrow shelf beside a crevasse made the really difficult place—mountaineering text-books tell nothing of the technique of step-cutting for, horses. On the lower side the ice fell sharply about sixty feet to a water-filled chasm. Nigger in edging away from the lesser danger slid down towards the greater. Incidentally, he carried all Phyl's and my belongings. Hans burned his hand hanging on to the lead rope and dropped his axe down the smaller crevasse, but probably helped Nigger to check, wrong side up, badly cut and bruised, half-way down against a small spike of ice. Unloading him involved some risk when he began struggling.

Meanwhile Phyl chopped her way down the crevasse for Hans' axe. We put more work on the staircase, Phyl using my hat to carry gravel to cover the bare ice which the horses distrusted. However, Nigger quickly learned to step precisely where Hans did. By breaking through a snow bridge, Stocking learned not to cut corners.

Henry and Phyl scouted ahead up the glacier until opposite Mt. Tiedemann. There they encountered high wind. Aloft, banners of snow blown from the peaks warned them that these were mountains of no mean order. They found a moraine lake west of the glacier.

In their absence we decided to spend the night in Pocket valley to save the horses a night on the glacier. The necessary things were back-packed down the moraine after Alf and I scratched out a trail down which the unloaded horses might scramble.

In uncertain weather on the 12th we resumed our march up the glacier. About 2.30 p.m. Pete practically achieved his ambition "to take horses to the foot of 'Mystery mountain'." Rain and wind influenced choice of a camp site on a snow bank sheltered behind an ice-borne moraine at 6000 feet and seemingly a little beyond range of occasional ice avalanches from Mt. Hickson. Hang and Pete returned with the horses to Pocket valley, both men then going on to base camp.

From Mt. Blackhorn, Henry and Hans got the impression that a snow connection between Tiedemann and Waddington gave ready access to the base of the main tower of the latter.[2] Though Phyl and I knew this to be partly inaccurate at least, we also considered this face offered the likeliest approach; we had not seen it as fully as we believed, however.

As the four of us climbed the slope of Hickson in bright weather on the 13th, Hans came in sight on Scimitar glacier, so we waited for him. Then from higher up we discovered that Waddington soared in such forbidding precipices from the snow saddle between the head of Scimitar and Tiedemann glaciers that previous plans to place a camp immediately in this saddle were postponed in favour of a climb on the morrow to get a comprehensive view of the mountain's whole northerly face. A series of impregnable ice-walls, some 500 feet thick, guarded the visible section, about two and a half miles long; from the saddle Scimitar glacier cascaded splendidly for 3000 feet. Dust clouds swallowed ice avalanches; snow rumbled from every height around; one peak discharged 4000 feet to Scimitar glacier.

Our supply of hardtack was limited, and bannock hardly practicable on my primus or Henry's excellent pumpless type of stove, but Phyl judged us fair subjects for what fortunately proved an epic experiment in camp cookery; the result being neither pancake nor bannock, we called

2 C.A.J., Vol. XXI, p. 108.

the product "pannock," then "panic." We crouched round the stove with even more anticipatory gleams in our eyes than cannibals watching a missionary stew.

We got away in bright moonlight at 2.45 a.m., mounting towards glacial slopes of Hickson over snow and moraine. Donald had been none too fit for several days and unfortunately soon turned back. From near the Combatant-Hickson col we circled downward round the head of the lesser of the two great Scimitar ice-falls, then under a sometimes active ice-cliff climbed to cross the glacial ridge separating us from the Waddington saddle, a little less than 10,000 feet.

Mt. Combatant presents a slender, fairly symmetrical form from Mt. Munday, the sharp twin peaks being each supported by a pair of reddish buttresses; a great couloir separates the peaks, and a slanting shelf interrupts the continuity of the higher eastern peak in its direct rise from the ice-fall at the head of Tiedemann glacier.

To gain the shelf we ascended steep snow, then cliffs frequently overlaid with snow and ice too thin for secure steps. Rock in this whole area generally is somewhat gneissic, tending to produce slabs pitched at high angles. Hans once took nearly 100 feet of rope before finding anchorage in an icy chimney. We ate on the shelf at 9.30 a.m., little thinking we should not eat again for ten hours!

We now commanded a view of the northeast face of Waddington, from Tiedemann glacier up—most forbidding of all, a 3000-foot rock precipice everywhere raked with avalanches from the ice-cap. I had said no Canadian mountain yet attempted possessed such a well-guarded summit; the statement seemed confirmed now.

Doubtless the upper reach of Tiedemann glacier will be adjudged the most magnificent valley in the Coast range, not simply because enclosed by the loftiest peaks, but for their outstanding character; on the north the noble rock architecture of Combatant, Tiedemann, Asperity and Serra; on the south the contrasting immensity of ice-falls attaining their maximum development, 5000 feet, on Mt. Munday; Waddington, dominant, incomparable, must alone make any valley notable.

The couloir between the buttresses of the east peak of Combatant really has only one well-defined wall, the western; on that side we first climbed the corner of the flat-faced buttress, being soon forced to cross by insecure snow on steep ice to the other rock face; presently this cliff drove us left to a shallow central chimney filled with the typical crumbling ice. Rocks then gave place to a small snow and ice gully, narrowing finally to an icy chimney which ended abruptly in an overhanging cliff.

Here Hans excelled himself, traversing without footholds and with scarcely detectable finger-holds along wet tilted slabs under obstructing overhangs. Crumbling away of the icy take-off made the passage worse progressively for each of us, resulting in temporary exhaustion. The two buttresses began to merge. We climbed over the western crest into welcome sunshine, but almost at once encountered another crack (all held ice), succeeded by a wet slab and a second crack to be squeezed through without a pack. This awkward sequence needed so much rope it forced unroping and waiting in strained positions while each mastered it.

"Like a boulevard to the peak now," Hans reported. Passing through a hole in the soaring arête, we emerged under fantastic overhanging crags. Moving together for the first time, we traversed upward beneath these, the "boulevard" being juts of rock with a 2000-foot precipice below, and so to the narrow summit at 7.30 p.m.

"Here we stay the night," announced Hans—though the height evidently was at least 12,400 feet! "And another way down in the morning," he proposed. We agreed more heartily to that part. Hans nursed his alcohol stove to make unsweetened chocolate.

I found joy in assurance of so much time for the great emotion of seeing so much at once. With both peaks now appearing almost equal in height, Waddington, a thousand feet above us, dominated the cloudless scene which extended at least 200 miles along the grandest and least known section of the Coast range, here 100 miles wide. Ice and snow preponderantly mantled mountains of the coastward areas, the more intense glacial erosion having advanced until mostly remnants of the peaks remain. Along a more inland belt from beyond Mt. Monarch to the region south of Tatlayoko lake a more jagged landscape prevails; the rather definite division between the two zones suggests that a difference in structure may govern as well as climatic conditions. Waddington is not, as is still often supposed, a lone giant in a range of minor mountains; from Klinaklini river to Chilko lake rises a goodly array of peaks over 10,000 feet, with many more little short of that; an 8000-foot summit here has an alpine zone at least equal to a 10,000-foot peak in the Selkirks.

I had thought we had seen Twist lake in 1928 from what our present party often conveniently termed the "Munday summit" of Waddington, but undoubtedly it was Middle lake. Part of Tatla lake now showed as well.We saw the head of Bute inlet and across the easterly ridge of Waddington a wide strip of Georgia strait, proving these big peaks visible from coastal steamer lanes. Vancouver island mountains stretched beyond it to the vicinity of Mt. Arrowsmith, 140 miles. In the opposite direction Rainbow (Tsi-Tsutl) mountains and Ilgachuz mountains loomed bluely out of the plateau region. Waddington blocked out almost the whole Franklin watershed.

Hiding Mt. Serra, Asperity showed beyond Tiedemann, both several hundred feet above us; we could well appraise the 1500-foot cliff Tiedemann presented towards us— sheer, smooth slabs alternated with plaques of ice and the insubstantial snow so characteristic above 9500 feet in this region.

West of Klinaklini river shone a high glacial area, arctic in aspect, 150 square miles or more, distinguished by long, flat glaciers in wide, shallow, high-level valleys between whale-back ridges.

Far beyond and almost in line with Mt. Bell's shapely pyramid bulked the massive form of Mt. Silverthorne, never seen to such advantage before and suggesting a height of at least 11,000 feet. In the extreme distance left of it an unknown snowy group stood up well on the horizon. From Mt. Jubilee a mountain of some height had seemed to exist far beyond Monarch, but now we saw nothing outstanding.[3]

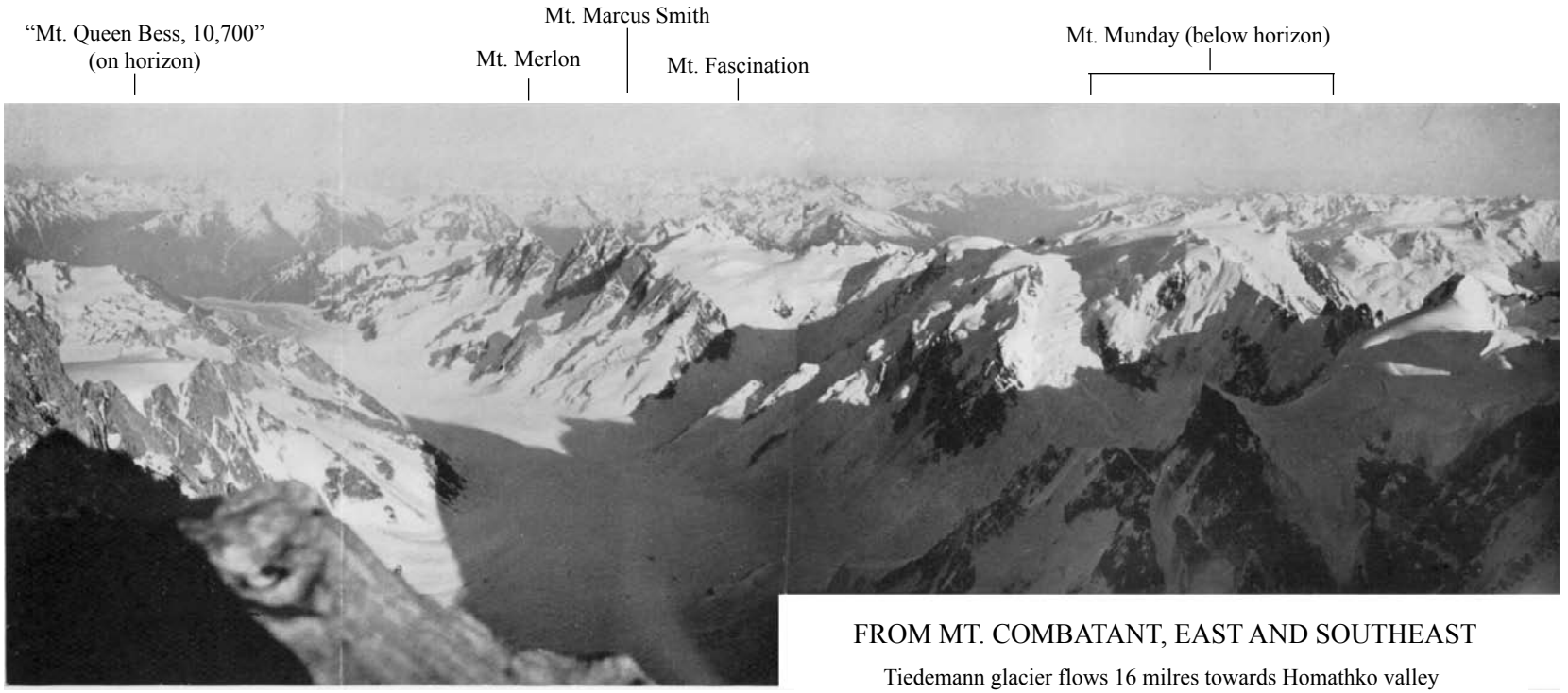
Mt. Combatant's purple spear of shadow lengthened from height to height in visible strides to the utmost horizon, the tip becoming a ball of intense violet before rising a short way to fade into the darkening southeastern sky. Monarch and a host of lesser spear-points quivered against the orange west, but no rich coloring spread over the mountain world.

For our bivouac we widened a shelf ten feet below the peak to about four feet square; three looped the rope round themselves, dangled their legs over the brink and tried to resist being slowly pushed off by the pair squeezed behind them. Somebody suggested shivering singly lest shivering unison shake our perch in down the precipice.

Daylight lingered faintly all night along the northern horizon. A waning moon drew an ethereal web over Waddington—to some of us more than mere mountain, a presence perceivable. When sunrise flashed on that lofty crest at 4 a.m. we and all the mountain world crouched awhile longer in deep lilac shadows almost like coloured mist.

We now thought that from above the main Scimitar ice-fall "Angel glacier" might be climbed without excessive risk to approach the "Munday summit" of Waddington and thence

3 *C.A.J.,* Vol. XX, p. 58.



FROM MT. COMBATANT, EAST AND SOUTHEAST

Tiedemann glacier flows 16 milres towards Homathko valley which dramins left to right.

SPECIAL NOTE FOR THE CAJ DIGITAL EDITION

An oversized photo, "Panorama From Mt. Combatant," by Henry S. Hall, Jr., showing the area from Spearman Peak to Mt. Cornelia, Scimitar and Parallel glacier valleys, was included in the hardcopy version of the 1933 *Canadian Alpine Journal*. It is not included in this digital version due to size restrictions.

The Scimitar Glacier Face of Mt. Waddington. *Photo W. A.D. Munday*

From right to left the summit ridge really rises nearly 3000 feet, being much foreshortened;
the N. W. summit, hidden in a smooth cloud-cap at left, is over 7000 feet above right foreground below Fury Gap.

On Cataract-Tellot Glacier Divide.
Photo W. A. Don Munday

Tellot glacier in foreground, Claw Mt. beyond;
in distance part of 5000-foot icefall on Mt.
Munday above Tiedemann glacier.

The Party. *Photo Alfred E. Roovers*

Front: A. E. Roovers, D. W. Brown, Hans Fuhrer.
Back: Pete McCormick, Pete Evjen, W. A. D. Munday, Mrs. Munday, H. S. Hall, Jr., H. T. Valleu.

Waddington Group. *Photo Alfred E. Roovers*

From left: Mt. Serra, Mt. Asperity, Mt. Tiedemann, Mt. Combatant, and Mt. Waddington (in cloud), with Mt. Hickson in front. Three branches of Chaos glacier left of Hickson. Parallel glacier in foreground. Valley of Scimitar glacier in middle distance.

perhaps reach the main summit—in answer an ice avalanche with a front of 250 yards thundered, lost in dust clouds, across the chosen corridor. Frequently throughout the night avalanches had broken the awe-inspiring silence.

Hans nobly brewed more chocolate while the great snow arête of Tiedemann continued to hide half the climbing sun. In its curtailed warmth we did "jerks" to limber up for the descent, begun along the difficult ridge leading to the western peak; we considered trying to cross over it. Fortunately perhaps, bad snow quite forbade descent of the 1000-foot slant of blue ice to the head of Chaos glacier between Tiedemann and Combatant. A deceptive gully, good rock at first, tempted us down the Scimitar side. For a time I kicked steps in hard snow, but soon we reversed our order, the icy slope forcing Hans to swing his father's great axe for most of the next three hours; much of the way we faced in, so steep was it.

We emerged at the bottom comfortably ahead of the first falling ice. Having eaten, we slept for an hour and a half while the growing heat removed need of at least an hour's step-cutting down to the bergschrund. The motto for such places evidently is "Women and children first," Phyl leading in jumping to the lower lip. Thereafter we toiled and broiled in ever softening snow, once having two of the party in crevasses at the same time. Hans set snow avalanching down a glacier slope on Hickson and we scurried down in its wake.

Alf hurried down to relieve Donald's anxiety while we four sat awhile by a rill to study the fascinating heights of Waddington. Nowhere in the gleaming armor could we discover a breach not entailing prohibitive risk of avalanches. Fury Gap likewise seemed too dangerous to ascend, either to repeat the 1927 and 1928 climbs along the summit ridge, or to establish a camp on the southerly side of the mountain for an attempt elsewhere; in any event the latter course would have been delayed till the arrival of more supplies from Bluff lake.

In any comparison with the Rockies it must be borne in mind that similar snow and ice conditions there would require Mt. Robson having an elevation of 17,000 or 18,000 feet—Scimitar, Tiedemann and Franklin glaciers descend respectively 10,000, 11,000 and 12,500 feet below the summit of Waddington.

Thawing had reduced the camp site to a mere shell of snow bridging cavernous holes among big rocks. Alf ventured far down a hole to salvage tins of Canadian boiled dinner for which Donald showed touching solicitude. Phyl and I moved our tent to a site levelled among boulders on firm ground. We now lacked shelter from the gusty wind common here, and early next morning had to rig a tarpaulin as windbreak to save worse damage when the tent ripped.

Grey cloud piled in Fury Gap, gradually enveloping Waddington while sites were levelled for the other two tents. Wind made pitching them difficult, even one in the lee of a rock eight feet high. Phyl and I moved our tent behind another big rock. Rounded rocks handicapped building walls high enough to give the tents much additional shelter. The 17th brought a few showers. Gusty wind continued to strain the tents. The big bannock Pete brought with him about noon from base camp inspired less than normal interest, our prolonged breakfast having just ended with an incredible number of Phyl's "panics" and strawberry jam.

Wisely, as it proved, Pete withstood our urging to stay the night, and left with instructions as to what food to bring up when Valleu and Ed returned. We thought his glacier trip alone was quite creditable.

I, at least, went to bed with fears for the tents. Phyl had sewn ours. It was merely a matter of time before the tents must chafe through where held down by rocks; the wind hardly impressed us as possessing extreme horizontal velocity; its blows seemed directed downward

like an invisible beast trampling the tents. We concluded that strong local wind is normal on this section of the glacier.

At 1 a.m. Phyl and I discovered an eighteen-inch slit in our tent. While we dressed and thrust things into our packs, two more opened. In hissing sleet we dropped the tent to avoid its complete destruction. We moved into the tent Hans occupied (cook tent by day). Though new, by 6 a.m. it split all up one end and rain steadily soaked everything. The other tent had to be pierced to drain an inch or two of water off its floor. With Waddington unapproachable and Tiedemann almost in the same class, there seemed little merit in continuing to occupy the camp.

Wind from :the not misnamed Fury Gap jostled us down the glacier. Not far from camp we crossed fresh wolf tracks, bigger than I had ever seen. Whitened peaks loomed dimly in flying clouds. With remarkable foresight Pete had prepared a mighty pot of soup to meet just such an emergency as our arrival at base camp created.

Three shots from across the creek about 7.30 p.m. signalled the return of Valleu and Ed with back-packs of grub. They had to go round by the glacier as the three horses were still in Pocket valley. Hans and I went to meet them, they not knowing the glacier. In the twilight Valleu dropped first his pipe, then a loaded revolver into a black hole in rocks on the glacier; when he just failed to reach it—it stuck muzzle upward and loaded—Ed hung down head first and took the risk of getting it.

An attempt was made next morning to bridge Scimitar creek with a tree to save Pete and Ed the long detour over the glacier on their way to Canyon camp for more grub. We finished drying clothes before clouds gathered in the afternoon. Somebody prevailed on Valleu to add doubtful dried eggs to soup made from resilient goat remnants.

Due perhaps to the potent soup the bright morrow found most of the party below normal fitness, and Alf remained behind when we started at 5.45 a.m. for Cataract glacier which Hall discovered in 1932 from the ridge north of Scimitar creek. We reached the glacier stream in 15 minutes down the valley and the snout, about 3700 feet, in an hour more over moraines of various ages.

Cataract glacier unites three cascading ice-falls, the westerly one fully 2000 feet high; six or seven bold rock peaks 9500 to perhaps 10,500 feet high form the imposing head-wall, altogether a splendid scene. The only real pass southward lay between two peaks wrongly identified by Hall in 1932 as Stiletto and Dentiform.[4]

With due haste we passed the 900-foot ice-fall. Wind-packed snow led steeply upward, and most crevasses were still well bridged. Back along the Homathko trench we sighted two lakes near Tatla lake, evidently Martin and Patterson lakes.

As often noted this season, clouds now hung over the plateau, leaving the main part of the range clear, a pleasant reversal of conditions too common in the Coast range.

We surmounted the snow pass at noon, then went up a few hundred feet eastward to a rocky shoulder, 9500 feet. Wonderful clarity of air revealed a scene of engrossing interest. From the point of view of exploration the chief achievement of the trip was discovery of the boundaries and extent of the Tellot creek glacier paralleling Tiedemann glacier on the north.

Tellot creek is named after an Indian hanged eventually for his share in the massacre of Waddington's men at Murderers bar on the Homathko river in 1864. A few days prior to the massacre he guided the English artist Frederick Whymper from the trail-builders' camp to the snout of Tiedemann glacier.

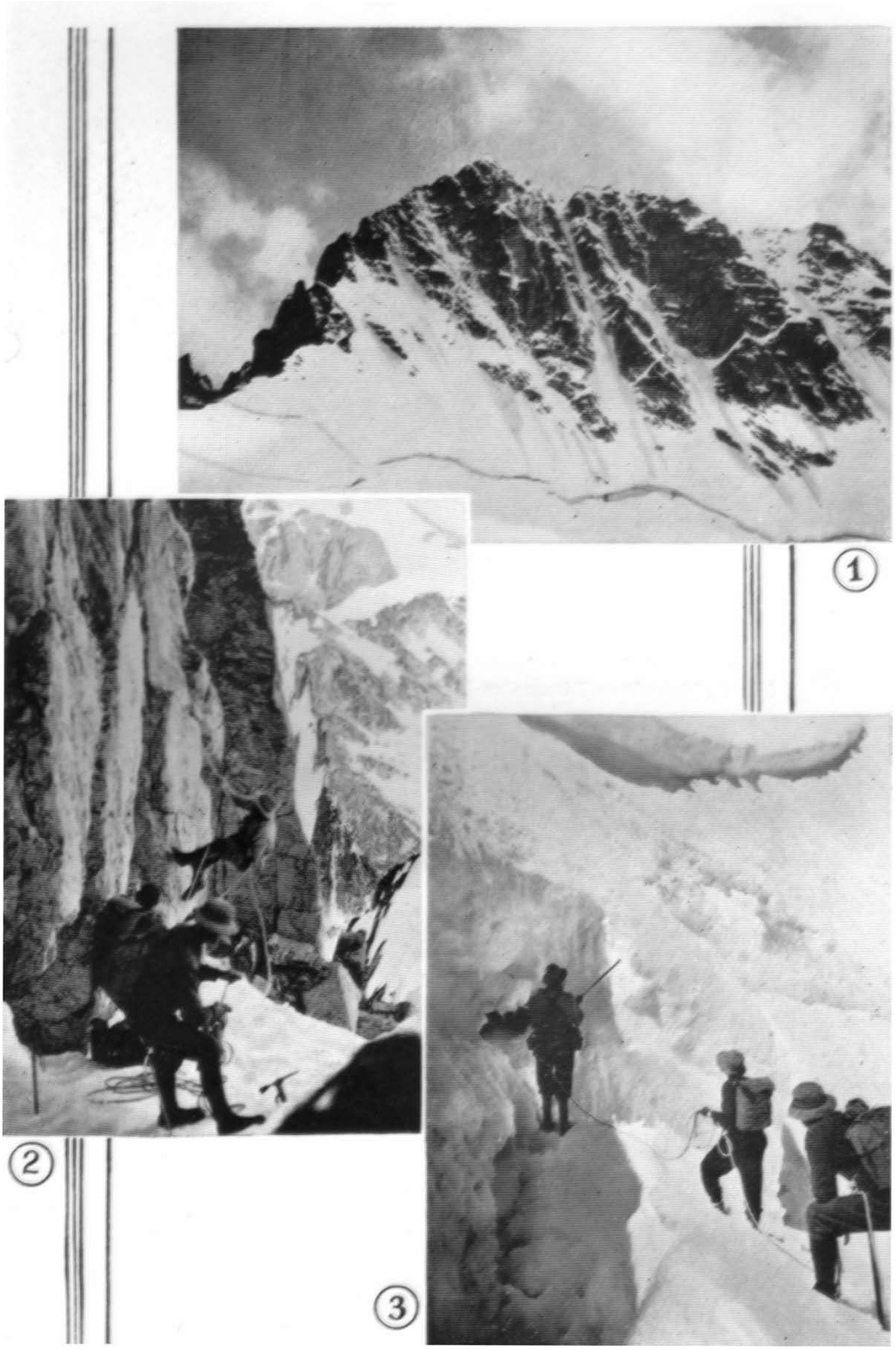
4 *C.A.J.,* Vol. XXI, panorama facing p. 109; Stiletto just shows left of the five peaks of Serra; Dentiform is not visible. Part of Mt. Munday shows between the two mistaken for Stiletto and Dentiform, and Mt. Marcus Smith is the dark mountain in the background farther left.

Pack Horses On Scimitar Glacier At 5000 Feet. *Photo Henry S. Hall, Jr.*

Mt. Geddes above Dissension Icefall, Threshold Peak left of it.

Unnamed Peaks 10,000-10,5000 Feet At Head Of Cataract Glacier. *Photo Henry S. Hall, Jr.*

Showing col crossed to Tellot glacier.



(1) North Face Of Mt. Geddes. *Photo Henry S. Hall, Jr.*

(2) Highest Point Reached On Mt. Geddes. Hans Attempts Overhanging Cliff. *Photo W. A. Don Munday*

(3) Hans Trying To Cut Thorugh Lip Of Bergschrund On Mt. Geddes. *Photo W. A. Don Munday*

The full length of Tellot glacier may be ten miles, but the lower part dipped steeply round a bend; its main reservoir is a snowfield slanting up to 11,000 feet; over the rim Mt. Tiedemann just showed; Serra, rising from the snowfield, hid Asperity. Peeping through the notch between Stiletto and Dentiform, Waddington's rock tower displayed those peculiar icy encrustations which adorn even the southern face throughout the best summer weather. This is not mere snow on the ledges but forms even on vertical rock.

We saw only the upper part of the huge ice-fall from Mt. Munday's broad ice-cap; some distance eastward the southern scarp of the Tiedemann glacier trench became more rocky, emerging boldly in the dark rock wedges of Mts. Merlon and Marcus Smith, both about 10,000 feet; behind them three loftier mountains stand on the rim of Waddington glacier. From Dentiform the divide between Tiedemann and Tellot glaciers descends eastward in a spiky ridge to part of which I had previously applied the name of Claw mountain; elevations here appear from 8500 to 9500. In the middle of the upper snowfield stands an eminence (Mt. Tellot) some 11,500 feet, not previously recognized as a separate summit and quite imposing from this side. Summits near this height form the head of Tellot glacier and connect the Tiedemann and Cataract group; Radiant glacier lies westward of Tellot.

With an average width of ten miles or more, and a length of twenty to twenty-five the Homathko snowfield looked less plain-like than from Mt. Combatant. Good Hope and Monmouth came and went in local clouds. The distinctive mountains between the East and West Homathko massed more confusedly than from more southerly viewpoints. South of the east branch the two outstanding mountains are Capt. R. P. Bishop's "Queen Bess," 10,700 feet, and one for which I suggested "Determination" when the Geographic Board assumed that Queen Bess was the Mt. Reliance of Waddington's map.[5] From the main Homathko four valleys radiate at the forks—the two forks, Tiedemann valley and an eastern valley believed to contain a long glacier related to the northern section of the Homathko snowfield; west of the snowfield the most prominent mountains are two fine serrated ridges, 9000 to 9500 feet. The lower one, Mt. Klattasine, rises above Waddington canyon and in our 1926 views suggested a structure of stratified rocks. The rock tusks of the Cataract group hid most of the attractive mountains northwest of Pocket valley.

Frost already crisped the snow in shadows below the pass when we started down about 3 p.m., but afternoon heat on the upper ice-fall counseled brisk passage down it. Descent along the left margin of the glacier involved following an airy goat trail for 200 yards along a crack where an unbroken, overhanging cliff met a steep glacis of rock planed smooth by ice, a fine example of glacial exploitation of lines of weakness in the rocks. We reached camp about 6.45 p.m. Pete and Ed arrived from Canyon camp about 8.00 p.m.

We prepared on the 21st to camp in Pocket valley. At 3 p.m. we transferred our heavy packs to the horses which Valleu and Ed brought down the glacier to about 400 feet above the snout. With Hans' help Pete succeeded in getting the horses down the Pocket valley moraine loaded.

Three reconnaissances were planned for July 22. Henry went up Parallel glacier to the foot of the first ice-fall, as far as advisable alone, to look for an approach to Geddes; he discovered that the western tributary fell for a thousand feet in an ice-fall, grand even in a region where glacial features assume colossal grandeur.

Phyl and I crossed Scimitar glacier and climbed east of Radiant ice-fall hoping to command a view of the whole northern face of Tiedemann. Its northwestern ridge descends in a great snow

5 A.J., Vol. XVIII, p. 102

arête, then rises again in a prominent peak about 11,500 feet; from this two ridges branch, one to terminate in two subsidiary peaks beside Scimitar glacier, the other to thrust a blade-like prow out into the Radiant cirque. The impending wall of a narrow ice-cap crowns the whole crest of this ridge, suggesting the name of Damocles for the mountain. Damocles hid part of the precipice of Tiedemann but left a general impression—later borne out by distant views—of its being impracticable.

Through some misunderstanding Donald, Hans and Ed went above the crest of the Radiant ice-fall and added little to the knowledge of Tiedemann we secured. It had been intended that they reconnoitre Chaos ice-fall as an approach to Tiedemann.

Phyl and I returned across the glacier to the moraine lake, a somewhat turbid green sheet of water about a quarter of a mile long at the foot of an avalanche-scarred slope. By a rough game trail we scrambled along the bluffs to camp, passing luxuriant flowers and noting plant occurrences which would be unusual nearer the coast—for instance, red elderberry, devil's club and cottonwood at 4500 feet.

At supper that evening Alf brought us to our feet with a shout of "Grizzly!" We had no rifle in this camp. The beast, really a huge one, halted across the stream, then moved off slowly, tossing his great head in reply to our shouts until Hans yodelled. Then he vanished in prodigious bounds, each time he hit the dusty willows raising a puff of dust such as a cartoonist loves to picture.

Rain fell during breakfast next morning but Henry, Phyl, Hans and I were away at 3 a.m. under a wild sky, bound for Mt. Geddes by way of Scimitar glacier and Dissension ice-fall. Tiedemann trailed a cloud streamer miles long. We thought the 5000-foot Chaos ice-fall dangerous as well as prohibitively difficult; later we saw that a great avalanche had swept the supposedly safer upper levels.

We made good progress for 2000 feet up the right margin of Dissension ice-fall. Exacting climbing among jumbled blocks brought us presently to a vast chasm fifty yards wide and nearly the width of the glacier. Increasing heat meant a certain amount of risk in a long descent to attempt the northern cliffs. Briefer but more definite hazard attended a traverse under a groaning" face of up-piled fragments impending over an obstructed gallery along the brink of a similarly insubstantial wall a hundred feet high.

Beyond this the upper basin of Parallel glacier offered no difficulty to the bergschrund east of Geddes. The corniced slope above the schrund looked none too secure; Hans twice found trying to cut through the upper lip too dangerous, thus forcing us to use the only bridge and leading up the longest part of the steep slope.

About 12.30 we started up the rocks, pleasant till we traversed left and descended a chimney; thereafter we climbed mostly on steeply-inclined slabs often overlaid with ice or snow which avalanched readily. Wet, steeper slabs repulsed us. Stiff climbing regained elevation, but at about 10,100 feet a long wall showed no possible route though Hans made a desperate effort. It was 5 p.m. The summit was probably at least 800 feet above.

Waddington, immense, glorious, now gleamed through the ominous cloud which had cloaked it all day. An expected reward of the ascent of Geddes would have been the sight of the big glacier certain to lie in the valley north of Bell. Spencer and Bell appeared somewhat less than the heights formerly estimated, 11,000 and 12,000 feet respectively. The narrow ridge bounding Scimitar glacier from Spencer to Dissension ice-fall breaks into six or seven spear-heads, 9000 to 10,000 feet, most of them promising climbing of a high order from either side.

As soon as possible we varied the descent (on the southerly face), traversing and descending, thigh-deep mostly, in snow of successive couloirs now in freezing shadows. The peak

lay somewhere near the far angle of this extensive face, but no favourable route was disclosed by the time we reached the level of the col, so we traversed back to it at 7 p.m. Rosy light glorified mountains to the northeast; two particularly handsome summits opposite the mouth of Scimitar valley attain about 10,000 feet, one rising directly from the Homathko valley.

Camp lay about eight miles distant. Breakable crust wearied us down the grand corridor of Parallel glacier in failing light; we outflanked the main ice-fall in darkness, down avalanche tracks a thousand feet. Northern lights flared brightly overhead. At midnight Pete fed us soup and bannock and tea.

In the morning we heard how unsafe snow conditions had prevented Donald and Alf from attempting another route when the unsuspectedly difficult summit ridge of Mt. Cornelia (named by Alf) barred advance not far below the peak. It closely approached 10,000 feet and was a prominent feature when looking from camp up Pocket valley. To north and west a score of peaks about this height invite exploration.

Though still fair, the weather held an indefinite threat. A 7000-foot snow pass south of Mt. Cornelia attracted on July 25, a cloudy morning. Bluish alpine marigolds outnumbered all other flowers above timberline on the west side of Parallel glacier. On the Klinaklini side a glacier two miles long occupied the pass, draining northwest to a big northeastern branch of the Bell valley. Grizzlies crossed this pass frequently and we thought horses might be got across. While we lunched, large avalanches fell from the handsome 10,000-foot mountain south of the pass. We saw little down the valley.

The trip's chief recompense lay in views behind us where Tiedemann, Combatant and Waddington clove through upward streaming clouds; considered artistically, perhaps the long eastern wall of Parallel glacier gorge marred the scene's composition although supplying the true impression of height, a full 9000 feet above the lowest part of the valley.

This day Pete and Ed brought down much needed supplies from the former camp site up Scimitar glacier. Valleu had gone down on the 23rd to guard supplies at Canyon camp which was beside a bear trail.

Sea-winds brought threatening clouds on the 26th. Alf and I set out for the pass opening northward from Pocket valley. We found that horses might readily reach the broad pass, 7200 feet, from Cornelia glacier and descend, as grizzlies commonly did, the gentle glacier beyond, about two miles long. It also joined the branch of Bell valley, but we found that the true head of the latter valley and not our pass connected with a long wooded valley seen from Combatant as draining northward to some tributary of the southward-flowing Klinaklini. We thus left one link unexamined in a conjectured alternative to the very difficult Homathko route into the Waddington group.

Cloud-framed and appearing surpassingly high, Combatant's splendour promised a sudden and unrivalled close view of the Waddington group to any traveller approaching by this pass. A challenging rock peak towers on each side of the pass, with another along the Crazy creek divide.

Henry, Phyl, Donald and Hans went up Parallel glacier to a col north of Geddes. Clouds unfortunately hid the summit of Bell and lofty mountains westward in the same range. The glacier from the north face of Bell is remarkable for being buried in rock debris discharged over a cliff by a hanging glacier, and the trunk glacier was similarly encumbered where visible for a short distance. The glacier impressed them as being an important one and descending to a very low level down a notable gorge towards the Klinaklini valley, seen ten to twelve miles away. Mt. Geddes presented its massive north face, streaked forbiddingly with glare ice. They returned to camp just ahead of rain. Snow fell nearly to timberline.

Excepting down the steep part of the tongue the horses took our packs back to base camp on July 27th. There Donald personally presided over preparing and serving chicken a la king for supper; though a festive inroad upon all remaining delicacies, for some of us the uppermost thought was that the homeward journey had already begun. We moved down to Canyon camp on the 28th. Heavy rain and wind that night again whitened the mountains down to timberline.

Search for the horses greatly delayed a start for the river. Pete, rarely so demonstrative, shouted with relief when he saw his horses safely across. We camped two miles up the valley so that we might cross the Homathko ford early next day.

Two ten-foot gaps in trees overhanging the river afforded the only landing places for the swimming horses in the return crossing. Bright weather made the day's ride delightful apart from the atrocious trail. Wolves yowled dismally behind us at Twist lake; we camped about an hour and a half north of it.

From Middle lake on the 31st we again looked down the valley at the great peaks; to grant us this view was a magnanimous gesture on the part of the Coast range— a view rounding out memories of days "golden, not for what they accomplished but for what they revealed."

Rain squalls from the plateau region soon invaded the mountains but spared us. Roses still bloomed and paintbrush flamed in the meadows. Even memory of lettuce, strawberries, carrots and turnips from Valleu's garden will dim before that of the moon flaring through a last scarf of storm-cloud behind Mt. Blackhorn.

Through the dust we rode to Graham's in five hours on Aug. 1. Valleu went home with his horses. On the 3rd Phyl and I, homeward bound on the mail stage, sadly parted from the party now bound for Monarch mountain. The stage made its fortnightly visit to Tatlayoko lake! We enjoyed overnight the hospitality of Ken Moore, one of the many settlers. The beautiful lake is fourteen miles long, lies just within the margin of the Coast range, and is drained south by the East Homathko; elevation is 2700 feet. Some of the nearby mountains look attractive and evidently exceed 9000 feet; the highest summit of Niut is said to be unclimbed; one dark pinnacle was pointed out as a squaw thus transformed for deserting her husband in Nemaia valley.

Clouds on the Coast range again prevented our noting if Waddington were visible from any part of the Tatla-Williams lake road. We enjoyed an evening at Tom Lee's at Alexis creek, and reached Williams lake after banking hours; there Mr. D. M. Sinclair in his capacity of bank manager and member of the A.C.C. kindly aided our departure on the night train for Vancouver.

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MT. WADDINGTON, 1934

By W. A. Don Munday

The decision of Henry S. Hall, Jr., to join my wife and myself in an attempt on Mt. Waddington in 1934 meant inclusion of Hans Fuhrer as guide and, as a supporting party, Philip H. G. Brock and Ronald N. R. Munro, both of Vancouver.

The main peak admits of only three lines of attack: the southerly face of the mountain, the southeast ridge, and the northwest ridge; since all three can be reached from Franklin glacier this obviously presents the most advantageous approach to the mountain (unless the Scimitar glacier—"Angel" glacier route be thought not too endangered by the mountain's biggest ice-wall).

Mrs. Munday, Brock, Munro and I left Vancouver July 11 on S.S. Venture, our start having been delayed a week through waiting to learn if our proffered help would be accepted in connection with giving more permanent burial to A. H. Dalgleish who had been killed on Mt. Waddington, June 26.

At Knight Inlet cannery, where Mr. and Mrs. P. King entertained us hospitably, James R. Stanton volunteered to take us 35 miles in his gas-boat to the mouth of Franklin river where, on the 13th, we found landing much simplified by silting up of a formerly troublesome river channel.

Franklin river had been unusually low, but rose rapidly with five days' rain, followed by bright weather; higher water meant more travel in bush, less on river bars, but the trail was better, some work having been done on it by the Lambert party, and a trapper had helped keep it open.

Measurement with a steel tape showed Franklin glacier had receded 1545 feet in seven years. The simplest route on to the glacier led through an ice tunnel about 60 feet long. During our two-years' absence the progressive smoothing down of the glacier's surface had speeded up, completing the disappearance of the first ice-fall; even the main ice-fall lacks much of its earlier grandeur.

Leaving the two "boys" to make another relay to the cache up the glacier, my wife and I returned down the valley and started down Knight inlet June 26 with rowboat and outboard motor to meet Mr. Hall and Hans. The engine failed us; we rowed against wind and tide until their increasing (and our decreasing) force defeated us at a rocky point. I tried to tow the boat past, perhaps having no happier time on wet limestone ledges hidden in seaweed than my wife did in her desperate fight to keep the boat from being smashed against the cliffs. Hall thought this an amusing variant of mountaineering when he sighted us, just before nightfall, from the gas-boat of Jean Spiers, a logger. From Spiers' logging camp Stanton took us the rest of our way next morning.

Hall, Hans, Mrs. Munday and I reached base camp at Saffron creek July 29, and we met the boys next day at the glacier cache. They told us that when they played jazz on tin plates to an aggressive-looking bear, which they met on the glacier, their audience "walked out on them." I reproached them for not first using their cameras, but feel I failed to convince them that self-preservation is not the first law of the really keen photographer.

South wind and rain persisted till Aug. 7. We set out with first loads for a climbing camp on the 8th. An hour's tramp up Franklin glacier took us to the base of Icefall point. We had rejected it as site for base camp because of scanty fuel and exposed position in bad weather. Being eight miles from Mt. Waddington and 8000 feet below the summit, it obviously could not serve successfully as a climbing camp.

We were equipped to place a camp high, which probably meant on snow. The southeast ridge is rather widely regarded as being difficult and dangerous to ascend to its ice-cap. My party's

difficulties in August, 1927 resulted from the condition of the bergschrund, the glaciers being abnormally open that season; one great ice avalanche had swept Buckler glacier full length—the foot of the ice-fall is virtually the foot of the mountain. We were not, of course, troubled by the Lambert party's fear of a notch in the southeast ridge. This uncertainty, a member of the party told me, decided them to attempt the unnecessarily difficult route and it took them about nine hours to gain roughly 2500 feet.[1]

At this time we did not know the Secord-Neave party had actually used the camp site we considered at 10,500 feet on the ridge crest. The shortcoming of the southeast ridge consists in limiting attack solely to the always icy cliffs of the northeast face of the main (or central) peak.

The southerly precipices of the main mass of Mt. Waddington fully equal the northerly ones in steepness, although the former are misleadingly masked in profile by the ridge running up from between Dais and Buckler glaciers; this really is a succession of sharp peaks, the final one being not far short of 13,000 feet (lowest of the three important summits).

The cliffs between this ridge and the central couloir seemed worth our attention first. To reconnoitre these we decided to camp on a bivouac site used by my party in 1927 at about 7300 feet near the junction of Dais glacier with Franklin glacier. We called it Little Alp camp, the alp being nearly thirty square yards of turf between a small pool and the brink of a cliff 500 feet above the glacier level. The whole party moved up on Aug. 9. Camp was about an hour's tramp from the base of the mountain as represented here by the bottom of Dais glacier's horseshoe of ice-fall. A glacial spur of Mts. Cavalier and Squire hid Mt. Waddington from camp, but morning sunshine thrust the giant's tusks of shadow beyond us far across the glacier.

We got away at 4.10 a.m. on the 10th, with Waddington's cloud streamers threatening a cloudy day. On crampons we mounted Dais glacier steadily, ate second breakfast at about 10,500 feet, and found the bergschrund not open widely. The huge ice-plumes of the summit towers showed from the base of the cliff. The clean-cut walls are camouflaged into an appearance of inviting ruggedness by their patchwork pattern of white, black, light and dark grey, which is fantastically arabesqued by innumerable pinkish aplitic dikes intruded into the old stratified rocks (thought to be lava flows older than the prevailing granite of the range).

The rocks were free of snow; ledges incline too steeply for much to cling for long. The main couloir evidently leads up only into an alcove without indication of egress. Various patches of snow and ice hung in niches in the face above us but blank cliffs forbade linking them into a practicable route. At about 11,500 feet we turned back at 11.30 a.m. To be caught in bad weather on this face would be desperate; there are no belays and everything shelves outward steeply.

Fragments of ice from the summit showered past us until we were well below the bergschrund. Softening crust, through which we sank thigh deep, made descent so laborious that we only reached camp at 5.15 p.m. Brock and Munro were just back from the first ascent of Mt. Cavalier, about 9000 feet, a handsome mountain across Dais glacier from Waddington.

The 11th dawned spitefully with some rain. The 12th mocked us unkindly in the early hours. The 13th drove rain squalls across the peaks. All six of us finally set off late for Fury Gap with some hope of climbing Mt. Chris Spencer but found rain-rotted snow pouring off it.

A sudden east wind thrust back the clouds so that we started under brilliant stars at 3.20 a.m. along Dais glacier to climb the northwest ridge at its junction with the westerly spur. Over the

1 Based on the statement prepared for the press by an officer of the Vancouver Section, A.C.C., and published verbatim, he assured me, in the Vancouver Province, July 3, 1934.

central peak gleamed a lone star—I wondered if both were equally unattainable. In chill shadow we slanted upward to an avalanche-planed couloir.

On the ridge crest, 11,500 feet, we joined the 1927-1928 route and traversed a snow dome to the basin of "Angel" glacier; here Mrs. Munday once more discovered a sérac carven to seraphic semblance. Snow now was loose and frosty. Absence of evidence of more than superficial thawing is remarkable above 12,000 feet.

Our object of course was to reach the central peak's northeast face, long known by us to have the most favourable rock formation. Our knowledge of the mountain during eight seasons indicated, however, that the rocks were always very icy. We thought it well to see this peak from the northwest one.

An incomplete bridge across the bergschrund crumbled when Hans thrust his hand into it. This forced a frontal attack on the steep face. We mounted cautiously. The tall upthrust dwindled suddenly to a nipple of ice "feathers" so fragile that blue light filtered up between one's feet. Time 1.50 p.m. Photographs prove it was somewhat higher than in 1928. We now believed the central summit to be higher than ours by much less than 100 feet.

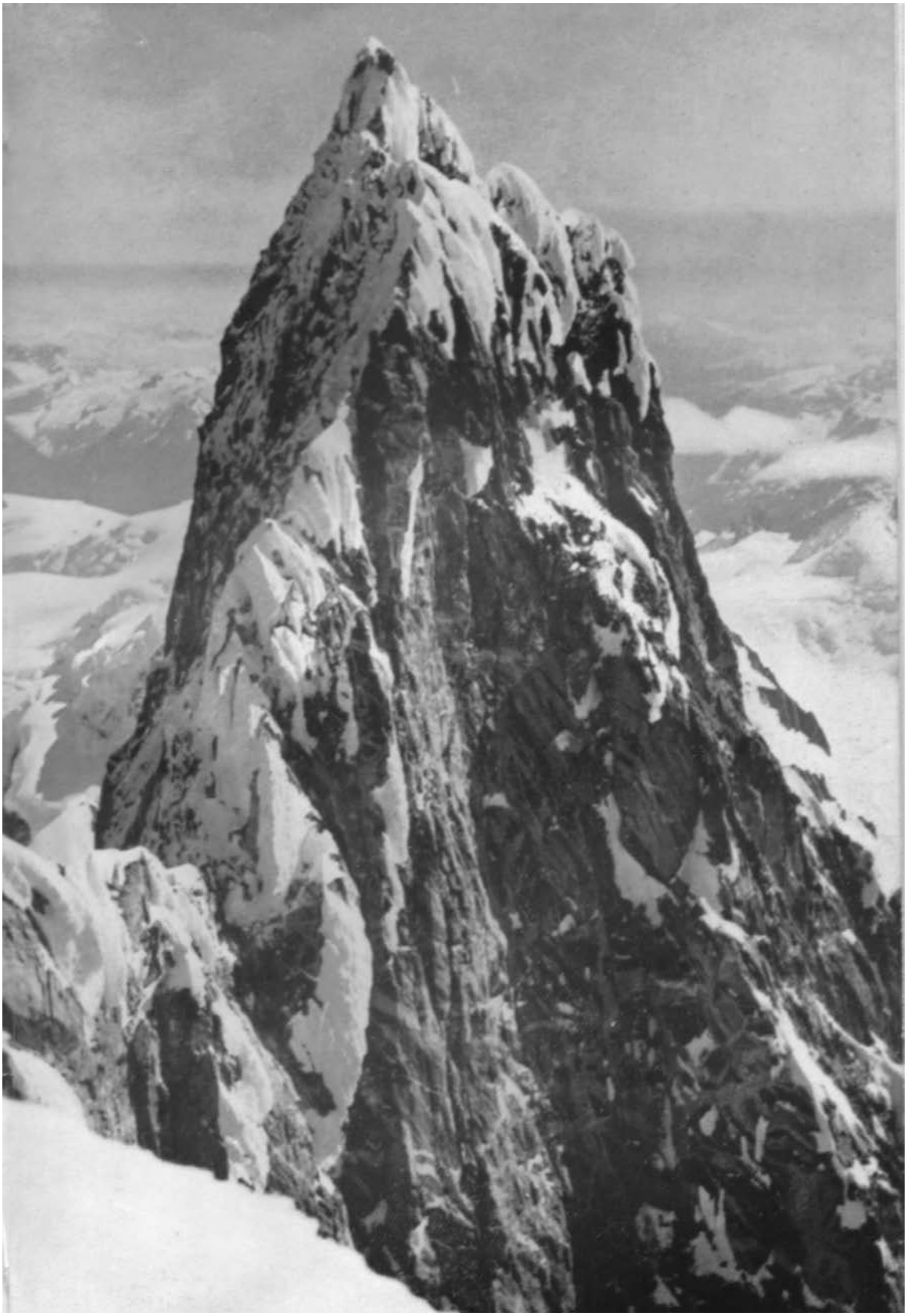
Only a few hundred feet distant, the great spire poised in the void, an incredible nightmarish thing that must be seen to be believed, and then is hard to 'believe; it is difficult to escape appearance of exaggeration when dealing with a thing which in itself is an exaggeration. The mountain was in good condition—by Waddington's standards. Plates and plumes and festoons of ice "feathers" many feet thick draped even vertical rocks. In eight seasons we have never seen the summit free of this crumbling comb which may easily spell defeat when a climber is within less than a hundred feet of the final crest. Despite less favourable rock structure, the more ice-free southerly face may hold more hope than the ice-coated northerly wall. The southeasterly ridge of the tower is hopeless; the northwesterly one belies its distant appearance.

Forest fire smoke had gradually dimmed the extreme distance somewhat. Here and there detached clouds and their purple shadows sought to hold a few fragments of the vast panorama inviolate from our all-commanding aerie. From Mt. Jubilee in 1931 we saw, or thought we saw, a dark lofty peak far in the shimmering northwest like a world-old secret straining for recognition by believing eyes. Now, perhaps nearly 70 miles away, we noted a range of nine or ten bold peaks. From near Monarch Mt., Hall had estimated the highest as about 11,000 feet, probably the mountain seen from Jubilee.

I had not looked for such a thrill in revisiting this summit of Waddington. On descending to the "Terrace" (about 12,800 feet), we skirted round to examine the route which our view from Mt. Combatant had convinced us existed to the northeast face of the main peak. A bergschrund, with a lip 50 feet high in places, guarded the peak, but we were well placed to traverse above the schrund although it was a particularly steep slant of snow which propped the grim monolith. By this route the rocks would be gained about 600 or 700 feet below the summit, but climbing would be so severe and of such an exposed nature that we thought it unjustifiable without a large number of pitons and we judged a camp ought to be placed on the "Terrace" (probably more sheltered than the southeast ridge).

At this time we did not know that the Secord-Neave party's splendid attempt confirmed our view of the severity of the climbing on the cliffs. One of the party told me their last 400 feet cost them nine hours;[2] I understand they thought that they turned back 800 feet from the top; I judge

2 See, however, p. 42. (Editor). (He is referring to the article *New Ways to Waddington* in this issue)



Summit Of Central Peak Of Mt. Waddington From N.W. Peak. *Photo Mrs Don Munday*

Mt. Waddington From Mt. Munday. *Photo Don Munday*

it was nearer 600 feet, but I am convinced the remaining section would be still more difficult. For the present Mt. Waddington deserves to be rated as verging on the impossible when all factors are taken into account.

The peak's northerly face is remarkably undissected; the central section of the peak is about the proportionate thickness of a masonry wall, but viewed endwise appears less slim owing to a supporting- buttress at each end on the southwesterly side.

Hans had brought his alcohol stove in expectation of a night on the mountain, so while he boiled "toddy" (a cocoa mixture) we gladly basked for an hour on the terrace. Purple wooded valleys appeared as mere slender pathways twisting timidly amid luminous arctic wildernesses of ice and snow.

At 4.45 p.m. we plunged down through the loose snow, but below the crest of the northwest ridge we toiled often hip-deep in sodden partly-crusted snow of Dais glacier till we reached its lower levels. At 9.15 p.m. the purr of the primus welcomed us as we plowed down the ridge in the dusk to camp.

On the 15th Brock and Munro started about 6.40 a.m. and climbed Mt. Squire, about 9000 feet, from the easterly side as the one toward camp presented mainly a massive wall of ice.

On the 16th the boys cooked breakfast and roused us in time to leave at 3.20 a.m. for the long tramp northwestward up Portal glacier to a pass, 8200 feet. Here the grand southern rock face of Mt. Bell confronted us just across a gorge which appeared 2000 feet deep, our side barred by an impressive ice-fall. Ascent of the mountain seemed to demand a camp on the far side of this trench. Our remaining time did not allow this.

This newly discovered glacier appeared to be nearly five miles long; we called it Dorothy for Dr. F. C. Bell's wife. It drains into Klinaklini canyon. Heavy moraines have protected it from extensive recession. Usually favourable lighting revealed much of the confused topography of the distant unexplored Klinaklini snowfields which sprawl half-way across the range and unite with the Talchako system to form a thousand square miles of closely linked glaciers.

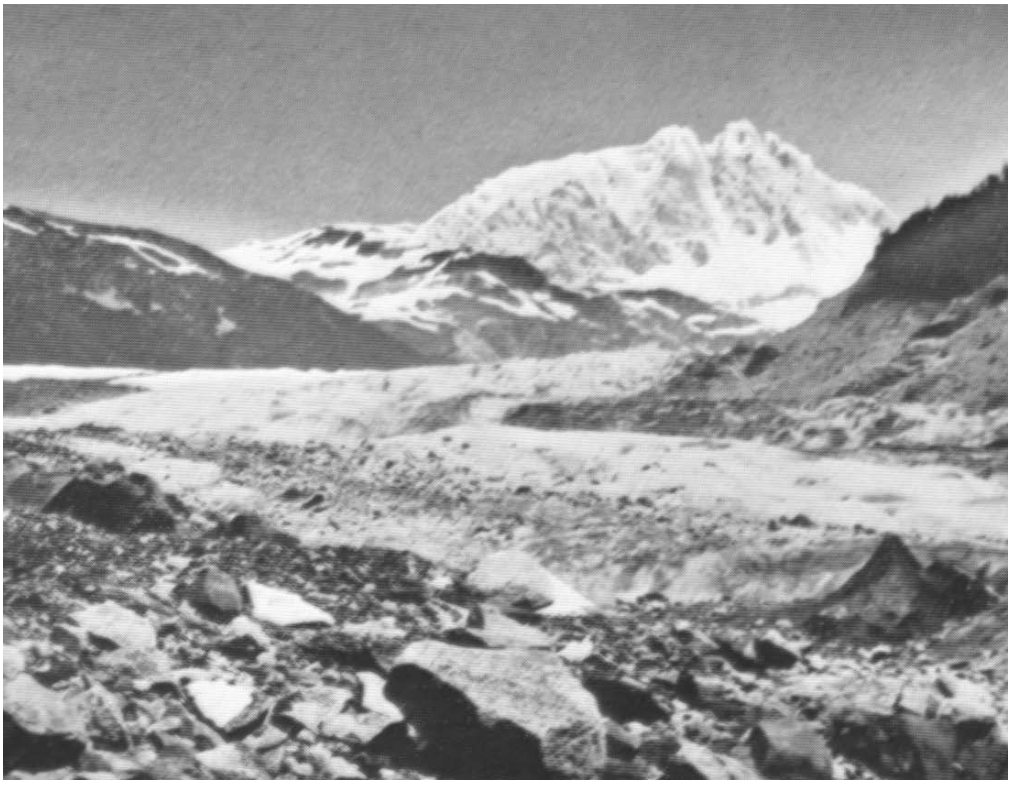
Sudden cloud wrapped Mt. Bell, then spread to the other big peaks. From the northern rim of Portal glacier we got our first sight of the upper part of the grand defile of Bell glacier; Mt. Chris Spencer stands at the head—this morning Brock and Munro were making the first ascent of Spencer, about 10,500 feet, in part by a not too innocent snow couloir, then up a shattered rock arête. Rock is loose on the mountain. The summit is a three-way divide to Franklin, Homathko and Klinaklini valleys.

Hans cooked breakfast on the 17th so Mrs. Munday Brock, Munro and I got away at 3.45 a.m. for Mt. Finality whose southerly glacier, a part of the southern branch of Portal glacier, forms the most remote source of the Franklin system. Cloud cleared and allowed us to find our peak. The north face fell sheer to an ice-fall tributary to Dorothy glacier. Westward between Dorothy and "Hoodoo" creeks the mountains dwindle in height toward the Klinaklini canyon, but the nearer ones send down several fine glaciers to, or toward, Dorothy glacier. Mt. Finality is about 9800 feet.

Across Dorothy glacier the mountains are lofty; beyond Mt. Bell and Dorothy peak towered three mountains with estimated heights of from 10,500 to 11,000 feet; although close to Klinaklini river, Mt. Bell and its alluring neighbours are singularly hard to get at because of the 13-mile long canyon. The Waddington region will probably supply worth while first ascents for some time to come.

Possibly the photographic side of our minds did not respond at sight of all-dominant Waddington dissolved to an ethereal shadow in pearly haze as though the mountain sought to reveal some spiritual self ordinarily hidden behind its gaunt savagery of outer form.

Mt. Bell And Dorthy Glacier From Mt. Finality. *Photo Mrs. Don Munday*



Mt. Waddington After July Storm. *Photo Mrs. Don Munday*

From 18 miles down Franklin glacier

The grand ski-ing slopes caused Mrs. Munday to lament her pre-dawn decision to leave skis in camp, so she shared in the usual penance of punching holes through softening crust—the normal snow conditions above about 8000 feet in this region. At Little Alp camp about 1 p.m. we found Hans apologizing in front of a pika's den; he had tried to rout the beastie out with blazing gasoline, believing it had stolen a hat which turned up in the foot of Hans' sleeping bag. The two biggest men shared the smallest tent. When the Pika somehow inserted itself between them at night we used to fear the ensuing struggle threatened least harm to the intruder.

On the 18th Hans added butter and other unrecorded oddments to the rice to fortify us for the morning's tramp down to base camp. The trip down to the snout showed the glacier to be much more open; opposite Confederation glacier the long interlocking crevasses now delayed us tediously.

Stanton took us down the inlet to the cannery. There Mr. and Mrs. P. King welcomed us with their unfailing hospitality, which included hot baths; inwardly and outwardly refreshed we boarded the S.S. Venture for home.

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NEW WAYS TO WADDINGTON

By Ferris Neave

"A blessing drawn from supernatural fountains! In night and dew to lie upon the -mountains."
—MEPHISTOPHELES in "FAUST."

For nearly a decade the souls of mountaineers in Canada and further afield have been stirred by tales of the great mountain in the Coast range, which, long undiscovered, has defied the climber to this day. Of these many who have warmed to the narratives of the Mundays and of Henry Hall, certain citizens of Winnipeg determined to see for themselves something of this mysterious land beyond the Chilcotin. So it came about that after a year's scheming and a week's hard driving Campbell Secord, my brother Roger, Arthur Davidson and myself stood at the end of the last hundred and fifty miles of roughish road and looked down Tatlayoko lake into one of the deep portals of the range.

Many factors had contributed to our advent. The initial stimulation to the adventure was supplied in great part by one A. A. McCoubrey and was supplemented frequently by his sage and much-sought advice. Campbell's patient and meticulous accumulation of data on the geography, meteorology and accessibility of the whole district, and the courtesy of the various officials and private individuals who attempted to satisfy his curiosity, were potent aids to our setting forth. To Campbell, too, fell most of the work of organising the material and equipment for our lengthy journey.

Two chief considerations had influenced him and the rest of us in attempting a new route to Mt. Waddington. Of the three tremendous glaciers which radiate from the mountain, two, the Franklin and Scimitar, had so far not permitted parties to gain a footing on the higher, south-east peak. Tiedemann glacier might provide access to the east ridge or north face of this part of the mountain. In the second place the mere fact that no man had yet attempted this tremendous approach was in itself a sufficient challenge to the exploratory instincts of the party. Accordingly we had laid our plans to travel down the Homathko valley from Tatlayoko lake to the point where Tiedemann creek enters the river. From here we hoped to make our way up the hitherto untrodden surface of the fifteen-mile glacier.

The skiff in which we rowed and sailed the length of Tatlayoko lake[1] just managed to accommodate ourselves and our supplies in one load. The mountains near the south end of the lake reach an altitude of over 10,000 feet and are very beautiful in form. The whole scenery is at least equal to some of the highly advertised lakes of the Canadian Rockies.

At this end of the lake on June 4 we met Jim Shields with four pack-horses. He had been engaged through the kindly interest of Ken Moore, pioneer rancher of Tatlayoko lake, to conduct us as far as possible down the Homathko river. Early next morning we started down the right bank. The first notable event was the crossing of a large tributary, officially designated the Ottarasko but known locally and appropriately as Feeney creek, from the kind, quiet-faced prospector who is developing claims on the hillside above. The horses forded at the mouth, the infantry crossed on a fallen cottonwood some distance upstream and the advance continued.

The first few miles below the lake proved splendid going. The valley here is not heavily timbered and provides attractive views of the nearer peaks. The trail winds frequently across open hillsides traversed by game trails and clothed with flowering shrubs. In the afternoon the expected

1 About 14 miles.

difficulties of thick bush and wet ground began to materialise. Under Jim's expert and cheerful handling, however, the horses performed miraculous feats in jumping down-timber and overcoming the other hazards of the diminishing trail. Some eight miles from the lake (though of course more than this by the trail) the old camp site of a survey party was reached and it was evident that the high level of the river would prevent the horses from going much further. Next morning (June 6), therefore, Jim started back with them—leaving us to contemplate well over six hundred pounds of equipment and supplies.

Very few men have followed the course of the Homathko from Tatlayoko lake to the forks since the Canadian Pacific surveyor Marcus Smith and his six Indian packers went through in 1875. A Provincial hydrographic survey party covered the route in 1928 and since then August Schnarr, late of Bute inlet, has trapped marten successfully in this part of the valley during the winter months. The blazes, and improvements which these travellers had left were a great help to our party in what is at best a very strenuous, though exceedingly interesting journey. The bush, though certainly bad in places, is less continuously obstructive than in certain valleys of the Selkirks, and at times allows good progress. If the Homathko shows any slight leniency in this respect, however, it is more than offset by the asperity of its rock slides, the height and frequency of the cliffs along its banks and the general roughness and steepness of the terrain. At the time of our passage the water in the main stream and its tributaries was very high and sometimes forced us off the route of our predecessors on to higher and rougher ground. Much relaying of course was necessary but even so, our packs frequently approached eighty pounds in weight.

On June 8 we passed through Shelter canyon. Here for a short distance the river is walled in on the west side by a vertical cliff. A rude ladder led down into the swirling water at its base. We climbed down and waded, with the water swishing about our knees, until logs and broken rocks gave access to the bank beyond the cliff.

On the evening of the 10th, after chopping our way through a solid phalanx of giant alders which had been uprooted by the flooding of the Homathko, we brought our first consignment to Nude creek. This is the largest tributary which the river receives on the northwest side between Tatlayoko lake and the forks and a glance at its seventy-five-foot width of white water showed that it would call for heroic efforts to get ourselves and our loads to the other side. Every now and again the continuous roar of the descending water was pierced by the menacing sound of boulders lumbering down its rocky bed.

Just above its mouth, Nude creek descends through an impressive canyon whose walls, sheer and even overhanging, rise several hundred feet on either side of the stream. To relay all our supplies to a possible crossing above this canyon was not to be considered except as a last resort, so we put in part of the next two days in constructing a bridge. The main piece was a long, slender spruce tree, braced and supported by an intricate arrangement of poles and ropes. Its appearance did not flatter the two engineers in our party, but at least it worked. A thin wire cable (a relic of the survey party) was added to form an overhead rail for sliding the packs along. Owing to the necessity of taking all our rope along with us, this wire alone remained after our crossing. (On the way home it fell to my lot to make the first passage and it proved a safe and delightfully spectacular carrier).

The ponderous nature of these operations was emphasised by the activity of the local bird life. Dippers flew past in their usual rapid and preoccupied manner and certain small, black and incredibly reckless ducks made dashing flights over the stream and plopped with wild abandon into the seething water.

Bellamy creek, a short distance down the valley, was already bridged, to our great advantage, by a large snow slide which had played havoc with the trees on both sides of the stream.

Further on, high water prevented us from skirting the stream below a rock bluff and we had to haul our loads up a sensational cliff route reconnoitred previously by Roger. Access to the upper part of the cliff was provided by chopping down a tree and using it as a ladder against the rock face. A couple of ancient poles suggested that Marcus Smith had been forced to adopt similar measures.

This part of the valley is so steep and rough that it is very difficult to find any place where a tent can be pitched. On one occasion the search continued until a late hour and left us at a point where the trail runs at some 800 feet above the river. Roger nobly made the long trip down and back to bring up water in our canvas pail.

Throughout this part of the journey we could not but be impressed by the masterly economy of material with which our predecessors had overcome the difficulties of the way. Here a couple of horizontal poles would carry us round a projecting corner of cliff, there a notched tree trunk would elevate us suddenly to a new line of progress.

After a descent to stream level, the line of blazes led us[2] up on a long climb among great cedars and firs, hoary with hanging lichens, to avoid the Great canyon of the Homathko. Fortunately throughout this ascent (of 2000 feet or more if our guess is anywhere near the mark) there is no underbrush or burned timber to impede the upward progress of the back-packer.

At the point where the evanescent trail starts to descend again, a rock mass had recently broken away, leaving a vertical drop of some twenty feet. We slid down a doubled rope and alighted on a very steep rocky slope, wooded in part, down which we made our way with a slowness born of doubt as to whether we were on our proper course. Just as we stopped to camp at the edge of a big rock slide, Lowwa lake came into sight far below.

Next morning we went down to the lake and part way along the south shore. A precipitous face then made us glad to use a small log raft, doubtless the property of August Schnarr, which lay on the shore. Campbell was deputed to ferry the packs to the lower end of the lake while the rest of us scrambled across the cliffs.

We had hoped to get a glimpse of Mt. Waddington from the shore, for Munday[3] had written of seeing Lowwa lake from the northwest peak in 1928. In this we were disappointed. Lowwa lake lies in a deep pocket and no part of Waddington is visible from this point.[4]

On reassembling at the west end of the lake, however, Arthur, who had taken a high line in crossing the cliffs, reported peaks visible in the direction of our objective, and we accordingly tore up the rocks with an excitement which had been nourished by two weeks in the defiles of the Homathko. We stopped, panting, on a ridge several hundred feet above Lowwa lake and looking toward the west had our first glimpse of the country we had come so far to see. We saw the huge mass of Tiedemann glacier curving gently to its snout and on the south side of it the beautiful ice-falls and black crags of Mounts Merlon and Marcus Smith. Beyond these were portions of Mt. Munday and, still further, Spearman Peak was easily recognised, though no mountaineer had seen it from this angle. Our gaze flashed instantly to the right, but Waddington was blotted out by

2 June 17.

3 *C.A.J.,* Vol. XVII, 1928.

4 Later, from the slopes of Waddington we saw two lakes in the general direction of the Homathko; one, a small lake known to the hydrographic survey party, lying south of Tiedemann creek; the other, of larger area situated at a high altitude between Mosley creek and Tiedemann glacier.

clouds. We waited long and had just turned to go when the clouds billowed upward and we saw a great black ridge that seemed to sweep up into the sky. It was never fully revealed but we had momentary glimpses of the great pinnacles on the southeast ridge and of the slopes of snow and ice that sweep down towards Tiedemann glacier.

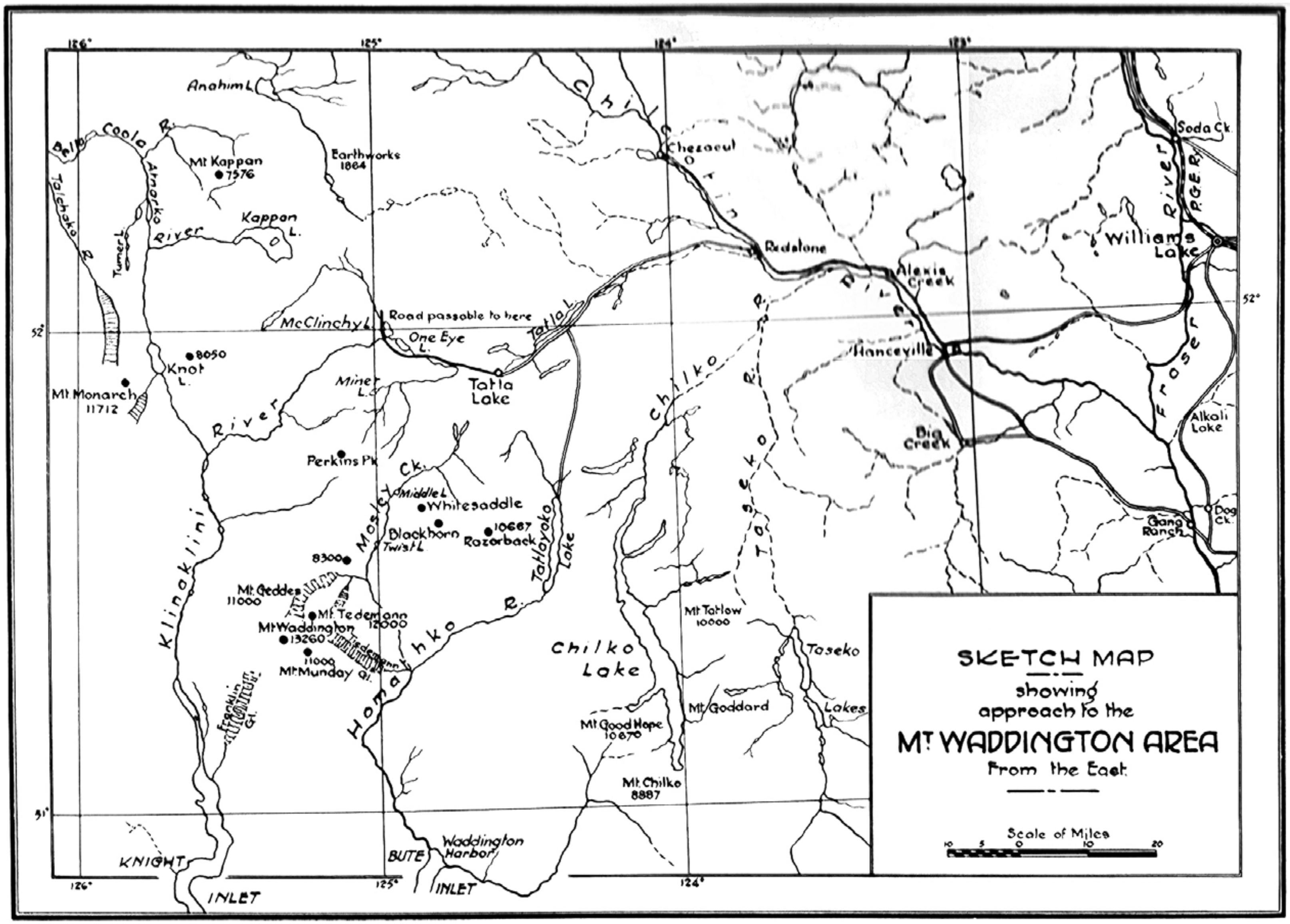
From Lowwa lake the way leads down through forest to the mouth of Mosley creek, commonly known as the west branch of the Homathko. We were very glad to find that the bridge constructed by the survey party still spanned the rocky gorge. It served our needs nobly, though in its present condition it does not inspire confidence in the mind of the timid, especially if the timid is heavily packed. We turned up Tiedemann creek and camped that night on its boulder-strewn flats. This is the place from which Frederick Whymper sketched in 1864 the "Great Glacier, Bute Inlet." It was evident at once that Whymper's "immense black mass" is not the snow-capped tower tentatively identified as such by the Mundays,[5] looking down from Spearman col, but a high shoulder on the ridge directly above this (see photograph) .

The snout of Tiedemann glacier is buried beneath a chaotic jumble of moraine. When, after a colossal relay, we advanced again, we avoided this in part by travelling up a lateral moraine which was a curiously thin dividing line between the sweet-smelling warmth of a thick spruce forest and the cold chaos of the great glacier. Once above the debris of the tongue, Tiedemann glacier provided us with a good surface and a very gentle slope. On June 23 we camped, with all our equipment on the great moraine which runs along the north side of the glacier. The evening before we had been given our first full view of Waddington, as the clouds slowly lifted and left the great peak silhouetted against the last light of the western sky. Its form from this side and distance is well-nigh perfect—massively buttressed at the base but with nothing of heaviness in its soaring height.

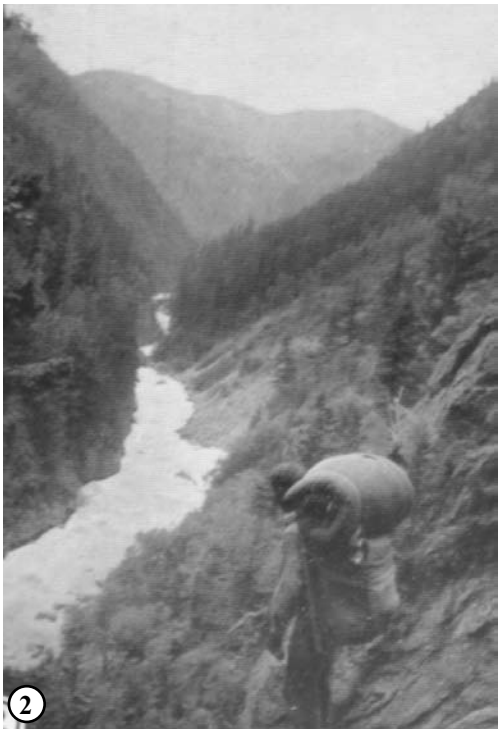
Arthur, whose new boots had ill withstood the roughnesses of the Homathko and whose mountain experience was small, cheerfully volunteered to stay here while Campbell, Roger and I pushed the attack on Waddington. From this point we carried no tent but relied entirely on a single waterproof sleeping sack which we had designed, and Campbell had executed, during winter evenings in Winnipeg. It just held the three of us and had enough room at the head end to allow us to sit up and still have a protecting head flap over us. It required no pitching beyond throwing it down and unrolling it. To say that it was always comfortable would be an exaggeration but it proved invaluable during the week which we spent continuously on snow.

On the 24th we went on up the broad, gently sloping neve, carrying in addition to our bag, food for eight days, climbing and photographic equipment and gasoline for the Primus stove. The whole glacier blazed in the sun and only the slightest of cloud streamers marked the highest summits. Waddington col could now be seen and the gaunt peaks of the Tiedemann group came one by one into view and gained in impressiveness throughout the day. We camped that night on the open glacier at the junction of a big tributary which owes its origin to the hanging glaciers of Mt. Munday, Spearman Peak and Mt. Waddington. Next morning we travelled up it, picking a devious route among the enormous crevasses which seam its massive body. I do not think the walls of this colossal cirque are less than three thousand feet high at any point. On Mt. Munday and below Spearman col they are relentlessly steep and the rock is plastered with ice. On the western side of the amphitheatre a wide glacier descends in a broken ice-fall from Spearman Peak and the east side of Waddington. Its front is divided by a prominent rock rib which we had seen first from

5 *C.A.J.,* Vol. XVIII, 1929, p. 103.


SKETCH MAP
showing
approach to the
MT WADDINGTON AREA
From the East
Scale of Miles
Anahim L.
Bella Coola R.
Mt Kappan
7576
Earthworks
1864
Kappan L.
Atnarko River
Talchako R.
Turner L.
McClinchy L.
Road passable to here
One Eye L.
Tatla L.
Tatla Lake
8050
Knot L.
Mt Monarch
11712
River
Miner L.
Perkins Pk
Mosley Ck.
Middle L
Whitesaddle
Blackhorn
Twist L
10667
Razorback
Tatlayoko Lake
8300
Mt Geddes
11000
Mt Tiedemann
12000
Mt Waddington
13260
11000
Mt Munday
Klinaklini
Franklin Gl.
Homathko R.
Waddington Harbor
KNIGHT
INLET
BUTE
INLET
Chilko R.
Chezacut
Redstone
Alexis Creek
Hanceyville
Big Creek
Chilko R.
Taseko R.
Chilko Lake
Mt Tatlow
10000
Mt Goddard
Mt Good Hope
10670
Mt Chilko
8887
Taseko Lakes
Williams Lake
River
P.G.E.R.
Soda Ck.
Fraser R.
Alkali Lake
Dog Ck.
Gang Ranch
52°
51°
126°
125°
124°
123°

Tiedemann Glacier And Peaks. *Photo F. Neave*



The Homathko. *Photo F. Neave*

N. Face Of Main Peak Of Mt. Waddington. *Photo Mrs. Don Munday*

From Base Of N.W. Peak.
The Cross Shows Approximately Point Reached.

above Lowwa lake. We considered the possibility of a route to the left of this landmark but it was evident that the whole of this part was swept at times by snow and ice avalanches from above. To the right of the rib the going looked safer but there was the possibility of trouble with a big bergschrund some two thousand feet above us.

We chose the latter alternative and early in the afternoon started up the ice-fall not far from the conspicuous rock faces that mark the extreme northeast angle of this side of Mt. Waddington. Throughout the morning the snow had presented for our disapproval a surface of breaking crust covering a soft interior into which we sank a long way at every step. This proved to be the general condition at all altitudes above the main floor of Tiedemann glacier and our rate of progress suffered accordingly. After climbing a few hundred feet our general course became an upward slant to the south. At first it was straightforward work but higher up we were forced to take a complicated route among the numerous large crevasses. One which remains in the memory was spanned by a thin snow-bridge pierced by two holes through which the prone occupant got a stimulating view of the depths below. It was crossed by faith, eked out by a wriggling motion of the buttocks.

Evening found us involved in a network of crevasses from which the only escape in an upward direction was by a direct assault on a very steep slope pounded hard by the passage of avalanches from above. We resolved not to tackle this till early morning. We threw down our bag, had supper in bed and waited until the first light showed over the peaks to the left of Tiedemann glacier. We strapped on our crampons and climbed fast. The claws bit splendidly and saved us hours of step-cutting. We traversed the steep slope high up and emerged on a level step below the bergschrund. Much to our relief the latter was bridged by a vertical mass of ice, up which Roger cut a way to the snow above. The slope of the latter was 48° from the bergschrund to the point, some 250 feet above, where we reached an irregular band of rock. The snow was now softening in the glare of another brilliant day and we traversed along the snow-covered rocks to the right. A few more feet of steep snow and we gained the crest of a knife-edged snow ridge, a continuation of the big rock rib, now far below us. It led to a broad snow slope up which we plodded slowly in burning sun. Just as we breasted the top we were confronted by an enormous crevasse which ran the whole width of the slope from the cliffs of Spearman Peak to the steep edge on our right. We walked along its narrow lower lip in this direction. Just where it ran over the edge it narrowed and was thinly bridged. I crawled cautiously across and in a few minutes (11.00 a.m.) we found ourselves on the broad snow saddle which lies at about 10,000 ft. between Spearman Peak and the prominent sharp shoulder which forms the northeast buttress of Mt. Waddington.

Throughout this long and exacting ascent from Tiedemann glacier we had carried forty-pound packs, for we were determined to establish a high camp from which to attack the upper part of the peak. We dried our socks, rested for several hours and in the evening carried our packs up the final slopes to the southeast ridge of Mt. Waddington, using Campbell's long legs to take the first soundings in the horribly-yielding snow. The crevasses here were few in number but of enormous size. As we climbed we saw the mountains on the far side of Waddington col. The Tiedemann peaks looked very near in the moonlight, Combatant taking pride of place for the beauty of its Gothic form. We camped in the snow just under the crest of the col—a spot we referred to as Spearman saddle. With a camp established at 10,500 feet and food for at least three days the prospects looked fair indeed. The weather was still good but patches of light fog at the col and a slight clouding in the east made us a little anxious.

Two o'clock! We started from our half-sleep and peered out into a changed world. There was fine snow on our tent-sack and we could see nothing beyond. Nevertheless Roger sent the

Primus roaring into action and we shiveringly pulled on the boots which we had taken to bed with us to prevent them from freezing solid. As we made our preparations a gleam of light showed on the side of Tiedemann valley far below and we hoped that all would yet be well. But the clouds closed down again thicker than ever and we could not see even the big séracs a few yards from our camp.

We lay all day in heavy cloud and light snow-fall. Late in the afternoon it cleared suddenly and we started at 4.45, determined to climb during the night if the weather improved, for there was a full moon in our favour.

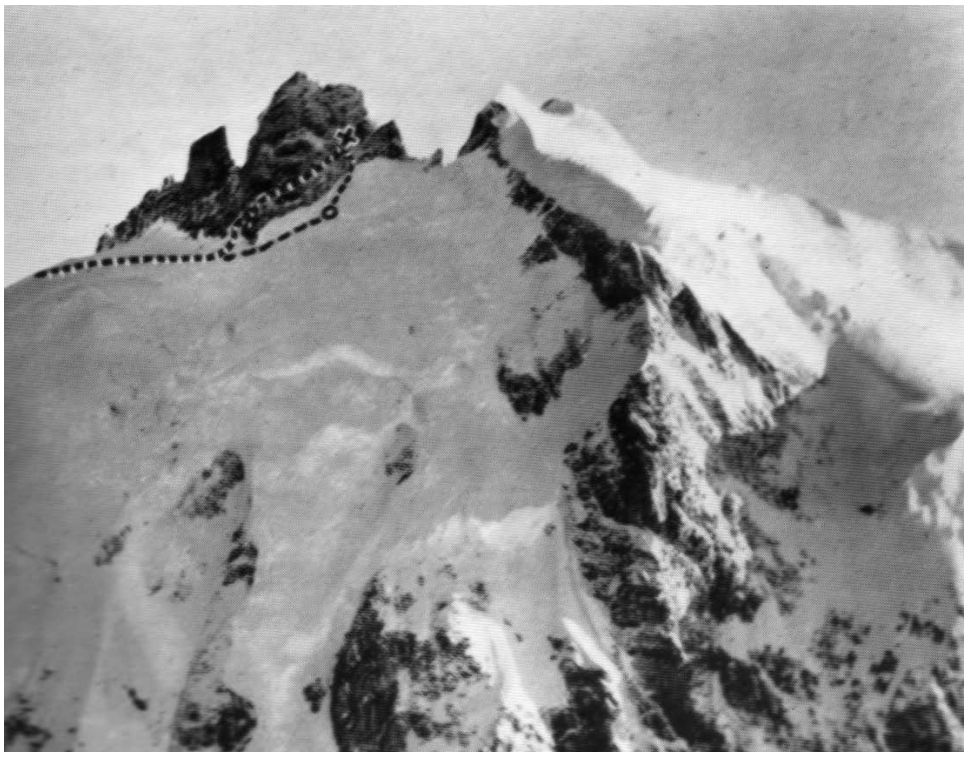
We stood for a moment on the wind-rippled snow of the col. Below we saw glaciers and peaks through tattered cloud-forms which made identification difficult. We turned up the snow-slopes on our right. The clinometer showed that we rose rapidly above the top of Spearman Peak, level with the nearer summit of Mt. Munday. Then the clouds came down again and visibility was limited to a few feet. We reached a snow shoulder and plodded along it to a point which was quite indeterminate at the time but proved later to be close to the base of the final tower. At 8.00 p.m., in driving snow, with darkness coming on and no sign of improvement in the weather we started back and reached our tent-sack in an hour.

Early morning of the 28th found us still enveloped in cloud with squalls of fine new snow sweeping across the col, but towards 8 o'clock it lightened somewhat overhead. With no very high hopes but because anything was better than the damp inaction of our sleeping bag, we started again. For a time we were encouraged by signs of improving weather. A sickly sun could be made out overhead and the pinnacles and final tower could be studied during our advance. Occasionally the clouds were rent completely and we had startlingly clear glimpses of the Tiedemann peaks across the valley. But as the day wore on these lucid moments failed to recur and we climbed under a grey pall and in light persistent snow-fall.

The upper part of the peak is cut off by an enormous bergschrund which runs across the north fade at about the 12,000-foot level. We traversed along its lower lip hoping to find a way onto the snow-slope which runs high on the northwest side of the tower. The only break in this part of the schrund, however, was a considerable distance to the west and to use it would have meant prolonged floundering through soft snow and then a long diagonal on the very steep slope above, of whose stability under the circumstances we were somewhat doubtful. On the other hand the bergschrund could evidently be crossed at the northeast base of the tower. We allowed these considerations to change our plans. In this we were probably wrong, but at least we have the satisfaction of believing that it made little difference on the day in question. Even here the passage of the bergschrund was by no means easy. Roger cut steps up the vertical upper lip and then for a hundred and fifty feet up a steep hard ice-slope before we could gain the rocks of the tower. This occupied an hour and a half and it was now 2.00 p.m. We doubled to the right on a snowy ledge and then up a vertical pitch to a white patch which is conspicuous in all views of the peak from the north. It proved to be hard ice covered with new snow and had to be crossed slowly and cautiously. From this point we worked slowly upward and westward about parallel with the edge of the snow-slope which lies on the northwest side of the rock tower. The latter is everywhere exceedingly steep and the small ledges were plastered with ice and piled with new snow—with more coming. Almost every hold had to be chipped out or scraped before use and only the painstaking work of our leader and great care on the part of all of us, prevented certain parts of the route from being unreasonably dangerous. We climbed throughout with mitts, ropes and straps frozen to the consistency of boards.

Spearman Peak, Mt. Waddington And Waddington Col. *Photo F. Neave*

From Tiedemann Glacier, showing route of ascent. Three campsites indicated by circles.



North Face Of Mt. Waddington From Mt. Combatant. *Photo Don Munday*

▪▪▪▪▪▪ Route Of Ascent ------ Route Of Descent **X** Highest Point Reached. **O** Ice Cave In Bergschrund

At six o'clock we realized that we could not hope to reach the summit under the conditions. We were then on the northwest face of the tower, some 400 feet higher than the point where we had gained the rocks and about level with the prominent shoulder on the west ridge of the tower—not more than 800 feet below the summit. Looking back along our line of ascent it now seemed frankly inconceivable that any human being would have attempted it. We resolved firmly that we would not use it on our descent. We retraced our route across the last awkward traverse and hammering in a piton doubled our 150-foot spare rope through the ring. It dangled cheerlessly against the relentless face below but we descended one by one and hung onto the end and onto sundry miserable bosses of ice and rock while Roger chipped his way slowly across another delicate traverse. At the end of this another piton was inserted and the doubled rope again came into play. Some semblance of joy pervaded our coagulated mentalities when we saw that its end reached the snow. The whole business took a long time, however, and it was 8.30[6] when I joined the others below.

We now found ourselves in wind and snow on a slope so steep and of such doubtful stability that we faced in during the descent. We knew that the big bergschrund was no great distance below but it was so dark that the first intimation of our arrival was when a piece of the upper lip broke off under my foot. The vibration which this disturbance set up in the snow was felt distinctly by Roger, who was now the last man on the rope, but nothing more fell. We held a short and melancholy conference, clinging to the anchorage of our axes in the windy darkness. The final touch of unpleasantness was the sound of avalanches growling at us from Mt. Tiedemann. At Roger's suggestion we lowered a rucksack into the void. To our surprise, for we knew that the schrund was about fifty feet high in most places, it came to rest about ten feet below the edge. Next we lowered Campbell, who showed no dismay at the uncertainties attending his descent. He reported that he and the rucksack were on a ledge which did not appear to be near the bottom of the schrund. Of more immediate importance was his discovery of a cave in the ice-wall. We crept in and by the light of a lantern saw that it was a great irregular cavern with fantastic pillars and friezes on the walls. Every few minutes a wild blast of air, laden with fine snow particles, swept in through the entrance. The accumulation of such deposits had formed a deep snow bank in which we dug out a hollow to accommodate ourselves for the night. Fortunately we had brought the Primus along with us and were able to produce a hot drink at intervals. That the temperature was fairly low was shown by the fact that the snow remained perfectly dry around us, even in the niche which we cut for our little stove.

Towards 3.00 a.m. it became light enough to move. The ledge which gave access to the cave proved to be an overhang and we could see only a vague white smother below. We lowered Campbell again. This time he ran out forty feet of rope before he touched bottom—or anything else. Roger and I doubled the rope round a pillar of snow and ice and joined him on the lower lip. As we regained our former route the snow-fall became a genuine blizzard and for a time we could scarcely see each other on the rope. In some mysterious manner Roger kept us right on our snowed-up tracks and we reached our camp site in an hour and a half from the bergschrund. As we approached the col the wind was so violent that we had to turn our faces in order to get some relief from the stinging snow particles. Our sack was completely covered but the projecting shoulder of a pack-board gave us the clue to its whereabouts.

We turned in for the rest of the day. The storm continued and the tent-sack became thoroughly soaked by the penetration of the wind-driven snow. We had some anxious thoughts about the snow

6 Probably later. On our return to civilization, nine days afterwards, our watches proved to be nearly 2 hours slow. All the times given are those recorded by my watch at the time.

conditions between us and Tiedemann glacier. About 5.00 p.m. we packed up, still in thoroughly bad weather, and laboured down through a foot of new snow. We decided to change our former route by keeping to the south of the rock rib. Though this line is undoubtedly exposed occasionally to ice avalanches from Spearman Peak, there was less likelihood of starting an avalanche ourselves in the new snow. The latter became wetter as we descended. We stopped for the night at 8.45 p.m. on a level place between crevasses and early next morning worked out a devious route through the lower part of the ice-fall, reaching the glacier below at half past six.

The weather was now improving rapidly and before we reached Arthur's camp in the afternoon Waddington was clear again, though whiter than we had yet seen it. Save for the ice- and snow-bound rock of the tower the moraine was the first dry land we had touched for seven days.

The general retreat started next day (July 1) and we reached Tatlayoko lake on the 6th.

"It is a Maxim pretty well received, that Success in Enterprises justifies all the Measures that have been taken in these Enterprises; on the Contrary, whatever is unsuccessful must be accounted for; it is on this Account that I have been so tedious, in detailing so minutely the trifling Occurrences of the above Journey."[7]

Would that I could attain these Standards of Modesty!

———

7 David Thompson's account of his first attempt to cross the Rockies, F. W. Howay, *Queen's Quarterly,* Aug. 1933.

THE FATAL ACCIDENT ON MT. WADDINGTON

By Neal M. Carter

The fatal accident which befell Alec Dalgleish while essaying the ascent of Mt. Waddington (13,260 ft.), highest peak in the Coast range of British Columbia, was one of those tragic happenings which take place with such despairing suddenness that little opportunity for ascertaining the causes presents itself. A brief resume of the events which occurred may, however, serve as a guide to future parties faced with a situation similar to that which arose while climbing the cliffs of Mt. Waddington.

In the summer of 1933, while climbing in the peaks surrounding the headwaters of the Toba river, Alec Dalgleish had discussed the desirability of making an attempt on Mt. Waddington the following summer. During the intervening winter, plans were formulated by himself and Alan Lambert of the B.C. Mountaineering Club; Eric Brooks and the writer, who with Dalgleish were members of the Alpine Club of Canada, were invited to participate in the attempt. The writer was to journey south from Prince Rupert to Knight inlet in order to join the other three proceeding by chartered launch from Vancouver.

The party met on June 18th at Glendale Cannery, Knight inlet, and continued to the beach just north of the mouth of the Franklin river near the head of the inlet. Eighteen days were to elapse before the boat was to expect the return of the party to the beach and since the weather was doubtful, it was decided to utilize the unsettled period by taking things easy and relaying the packs to the proposed base camp at Icefall point instead of attempting to making one through trip with very heavy loads.

The topography of the Franklin river and its source, the Franklin glacier, has been adequately described in previous articles in this Journal. The route up the northwest bank of the river is obvious and in June of this year long stretches of gravel bar were exposed. A rudimentary trail was of considerable assistance between bars and in avoiding the two short cut-banks which, magnified by the fatigue of the English ski party that descended this valley, were described as "canyons." The bush in general is quite open except for the first mile and a final quarter-mile of thickly covered slide and moraine encountered before emerging on the open fiats of the huge terminal moraine of the Franklin glacier at 500 feet above sea level, some six miles from tide water.

The left hand side of the wide glacier snout presented no difficulty whatever in gaining access to the ice and by following up medial moraines, gradually working across to the most southeasterly rib, an almost smooth highway of ice extended practically to the junction with the Confederation glacier at 3800 feet. Here a badly crevassed area of pressure ridges necessitated some deviation, but once past this section, the ice became quite smooth again until finally covered with sufficient snow for ski-ing. A few simple crevasses were encountered in descending from the central crest of the glacier to its edge below Icefall point at 5000 feet. The strong down-wind frequently mentioned in connection with this glacier was at all times absent.

One relay allowed the packs to be kept to a maximum weight of 50 pounds, frequently less on the second trip, and under the conditions prevailing this year, no untoward difficulty was experienced in bringing all the equipment to Icefall point with a minimum of fatigue. The schedule may be of interest:

June 18th—One load from beach (6 p.m.) to camp two miles up-river (8 p.m.).

June 19th—From above camp (7 a.m.) to foot of glacier (1 p.m.) and return to beach (8.45 p.m.).

June 20th—Second load from beach (9.30 a.m.) to foot of glacier (7.15 p.m.).

June 21st—From foot of glacier (10 a.m., 500 ft.) to cache on glacier opposite Confederation glacier (4 p.m., 3750 ft.) and return to foot (7 p.m.).

June 22nd—Second load from foot of glacier (9.30 a.m.) to camp on Franklin glacier one half-mile above junction with Confederation glacier (5 p.m., 3950 ft.), picking up cache en route.

June 23rd—From camp on glacier (4.30 a.m.) to Ice-fall point (7.20 a.m., 5000 ft.) on ski and trip back for second load, returning to Icefall point at 3 p.m.

A base camp at Icefall point was thus easily established and June 24th and 25th were spent around camp in making short excursions to the ridge above camp and to the pass at the head of the Repose glacier. The face of Mt. Waddington was carefully studied and discussed on these reconnoitring trips and since these two fine days had removed practically all the fresh snow which had fallen on the mountain during the preceding few days, it was decided to make the first attempt on the peak on the 26th.

Leaving Icefall point camp at 10 p.m. on the evening of June 25th just as the full moon was rising in a cloudless sky, the Franklin glacier was traversed above the point and the gentle slopes past Jester Mt. and the length of the Corridor glacier were negotiated without difficulty. The brief half-light period just before dawn was spent in partaking of hot chocolate and iron rations at 7150 feet near the foot of the ice-fall of the Buckler glacier that descends from the small amphitheatre between Spearman and Waddington peaks. The head of this ice-fall (9650 ft.) was reached at 6.30 a.m. after experiencing a little difficulty in finding the key to the maze of séracs. Fortunately the snow was very hard and crampons made climbing easy. During a rest and refreshments the various routes up the steep faces and buttresses leading to the main ridge below the peak were examined in detail in order to confirm or disprove their feasibility as suggested by previous observations through glasses from afar. A steep, 600-foot snow gully giving access to a buttress joining the main ridge about half-way between the peak and the Waddington-Spearman pass was selected for the first attempt.

The upper part of the gully proved to be very steep and petered out some distance above, so it was with relief that the first rays of the sun were welcomed on gaining the shoulder of the buttress at 9 a.m. from a steep, icy, lateral branch of the gully. The day continued perfect and former observation had indicated that should this buttress prove feasible to its junction with the main ridge, easy snow lay between that point and the base of the final rock peak. The buttress was very steep and the rock much shattered, but it was free from ice with only a very occasional patch of soft, recent snow showing. There was no wind.

Two regulation Alpine Club ropes, one practically new and one somewhat used, had been joined before commencing the ascent of the ice-fall and Dalgleish and Lambert had alternated in leading up to the present position. Lambert first assumed the lead up the rocks, later relieved by Dalgleish by reversing the rope. Progress was quite slow with only one person advancing at a time, secured by belaying or holding of the rope from above. Vantage points for assistance became less frequent and it became necessary (to change the spacing of the rope intervals in order to give Dalgleish more scope for upward exploration before advancing to the next stop. In originally roping up, Dalgleish had chosen the end of the slightly longer, used rope and its extra length now proved an advantage since a greater amount for exploration was available without the inconvenience of the knot wedging in a crack. Finally an apparent impasse was seen above by Dalgleish, and the writer unroped to give still more slack and freedom between Dalgleish and Brooks, who was tied in near the knot joining the two ropes. Lambert also unroped and went up past Dalgleish to have

a look at the situation. Dalgleish, still roped to Brooks who with the writer was secured at the last belaying point some 50 feet below, then moved a few feet up to Lambert and they both decided that further progress in this direction was unjustified. The steepness of the buttress had necessitated careful climbing and it was now a few minutes before noon. The altitude was slightly over 10,500 ft. The party still felt quite fresh and the perfect weather and climbing conditions fully justified the carrying out of the proposed plan of retreating to the junction of a different route which had been chosen the previous day as an alternative. Lambert therefore descended, still unroped, to a small ledge immediately above where Brooks and the writer were waiting.

Dalgleish then commenced to descend, over the same route just taken by Lambert, while Brooks and the writer took in the slack rope over the belay. He had descended to within about 30 feet of the others when a slight scratching of nailed boots on the rocks above caused Lambert to look up just in time to see him disappear over the angle between the steep face of the buttress and its almost perpendicular side cliff that formed one wall of the snow gully that had been ascended earlier in the day. No exclamation or sound was heard as he fell. Brooks made a commendable effort to pull in the rope over the belay but did not succeed in gathering in more than a few feet when a terrific jerk which almost upset him occurred. He retained his grip on the rope, however, but the sliding of the taut rope down the sharp edge of a frost-shattered rock forming the angle of the buttress severed it within a few feet of his grasp. The rope, although it was the older of the two, did not suddenly snap under the strain, and the parting took place some distance from both the belay and the knot joining the two ropes.

Dalgleish could not be seen from the time he disappeared over the edge until he landed in the snow of the upper part of the main snow gully that had been ascended. This gully extended upward, roughly parallel to the route up the buttress, and consequently was never far below the edge of the buttress; the snow by this time had been softened by the sun. He immediately began to roll and bounce down the steep snow until hidden from view behind a bend at the foot of the buttress.

Profuse blood stains in the snow and the obvious fact that no effort was being made to check his descent down the gully indicated the seriousness of the situation. No sound came from below after waiting for some minutes so a descent as rapid as consistent with safety was begun. Only the shorter rope was now available for the three men and over three hours elapsed before the foot of the gully could be reached at 3.25 p.m.

A brief examination showed without doubt that death must have been instantaneous, caused by forcibly striking rocks before the relatively harmless descent of the snow gully occurred. No evidence of any movement having been made after coming to rest could be detected.

Imminent small avalanches of snow down the gully necessitated removing the body from the avalanche fan to a more secure position, and plans were then discussed. The body lay at an elevation of 9700 feet at the top of the intricate, 1000-foot ice-fall of the Buckler glacier and base camp, even under normal conditions, was an eight-hour journey distant almost entirely over glacier. It was decided to wait until the sun sank behind the shoulder of Mt. Waddington to see if the soft snow would show signs of regaining a crust, in which case it might be possible to lower the body through the ice-fall, at the foot of which the skis were available for use as a sled as far as Icefall point. But as evening approached, the sky and aneroid forecast a change in weather and a light fog rose from the Corridor glacier blotting out the entire landscape at times. The mildness of the evening gave little promise of a resumption of the hard crust of the previous evening and the idea had to be abandoned since it would have been beyond the strength of the surviving members of the party to negotiate the ups and downs of the soft snow covering the ice-fall when thus impeded.

Little else remains to be told. A temporary burial in the névé snow was fittingly performed and a few personal effects of the deceased were collected. His pack, although separated, was intact except for the medical kit, but his ice-axe could not be found. The descent of the ice-fall proved very tiresome and somewhat dangerous in the fog and soft snow, but once the skis were reached progress was more rapid and after two halts for preparing hot drinks on the Primus, Icefall point was reached without incident at 2.30 on the morning of the 27th. The weather had broken and the snow never hardened again while in the region. Camp was broken that afternoon and the foot of the Franklin glacier reached the same evening. Next day Knight inlet was regained without incident, after a total travelling time of 16 hours from Icefall point with heavy packs. Shortly after noon on the 29th a boat was signalled by a smoke smudge and a transfer to the chartered boat waiting down the inlet effected. Every courtesy was shown by the manager of Glendale Cannery and by the Provincial Police in the matter of radio communication, and the party proceeded to Vancouver for instructions.

The slopes of Mt. Waddington were chosen as the last resting place of Alec Dalgleish. Two of the original party, Lambert and Brooks, accompanied by Frank Smith ‘ and Stan Henderson of the A.C.C. and two of Dalgleish’s associates in former telephone constructional work left Vancouver a week later for the purpose of effecting a more permanent burial and erecting a suitable memorial at Icefall point. The writer was unable to accompany them owing to a severe injury sustained on the boat while returning from Knight inlet. This second party had no intention of climbing the peak and succeeded in carrying out all that was necessary; a large cairn incorporating Dalgleish’s skis and a suitably protected scroll now stands on a prominent elevation above Icefall point, facing the scene of the last endeavour of a true mountaineer.

In analyzing the accident in an effort to ascertain its contributing factors, the following facts should be borne in mind:

(1) The party consisted of four climbers, all experienced in true alpine climbing on glacier, snow, ice and rock. Each had participated in climbs with at least two of the others on previous occasions and had full confidence in each other’s ability, although the four had not climbed as one party before.

(2) The attempt on the mountain was not in the nature of a “dash” since two weeks’ climbing time was available if the weather remained suitable, and it was planned to attempt various routes until success or non-success justified devoting the balance of the time to other peaks.

(3) The fact that an attempt on the peak was made from the base camp instead of from a subsidiary, higher camp had little bearing on the accident. The approach to the foot of Mt. Waddington from Icefall point proved simpler than had been anticipated and with the exception of the ice-fall of the Buckler glacier, the actual effort of climbing was hardly noticed. Until the buttress was encountered at approximately 10,000 feet, the climb was ahead of the estimated time schedule without undue fatigue; had normally difficult rock work been encountered as far as the main ridge, the base of the final tower (approx. 12,800 feet) would have been reached at 2 p.m., or 16 hours from camp. The time necessary for climbing the tower had not been estimated.

(4) The cause of the fall is still unknown. Dalgleish was wearing well nailed boots (tricouni and Swiss edge nails) and Lambert reported no extraordinary difficulty in descending over the spot where Dalgleish fell a few minutes later. Suppositions are that:

(a) Dalgleish, in varying Lambert’s route by a few feet, may have encountered a loose foot or handhold. It is certain that no large rock gave way since none was heard fall or was seen to land in the snow gully.

(b) A rock descending from above may have struck him. Unless hit on the head sufficiently hard by a small stone to have been rendered unconscious, some exclamation would have been expected. As stated above, no large rock was known to have fallen.

(c) The weight of rope below may have thrown him off balance when in a difficult position. Brooks and the writer are certain that no jerk from below occurred, since sufficient slack was always left after taking in over the belay, and no request for extra slack was made immediately before the accident.

(d) A sudden attack of vertigo induced by mountain sickness may have occurred. Dalgleish was known to have suffered from altitude on at least one other occasion, but no complaints had been heard on this trip and it is not likely that an attack came on too suddenly to have allowed some warning intimation.

(e) A straight slip while negotiating a smooth, outwardly sloping ledge reported by Lambert may have occurred. In an effort to regain a hold, it is possible that no warning would be given until it was too late.

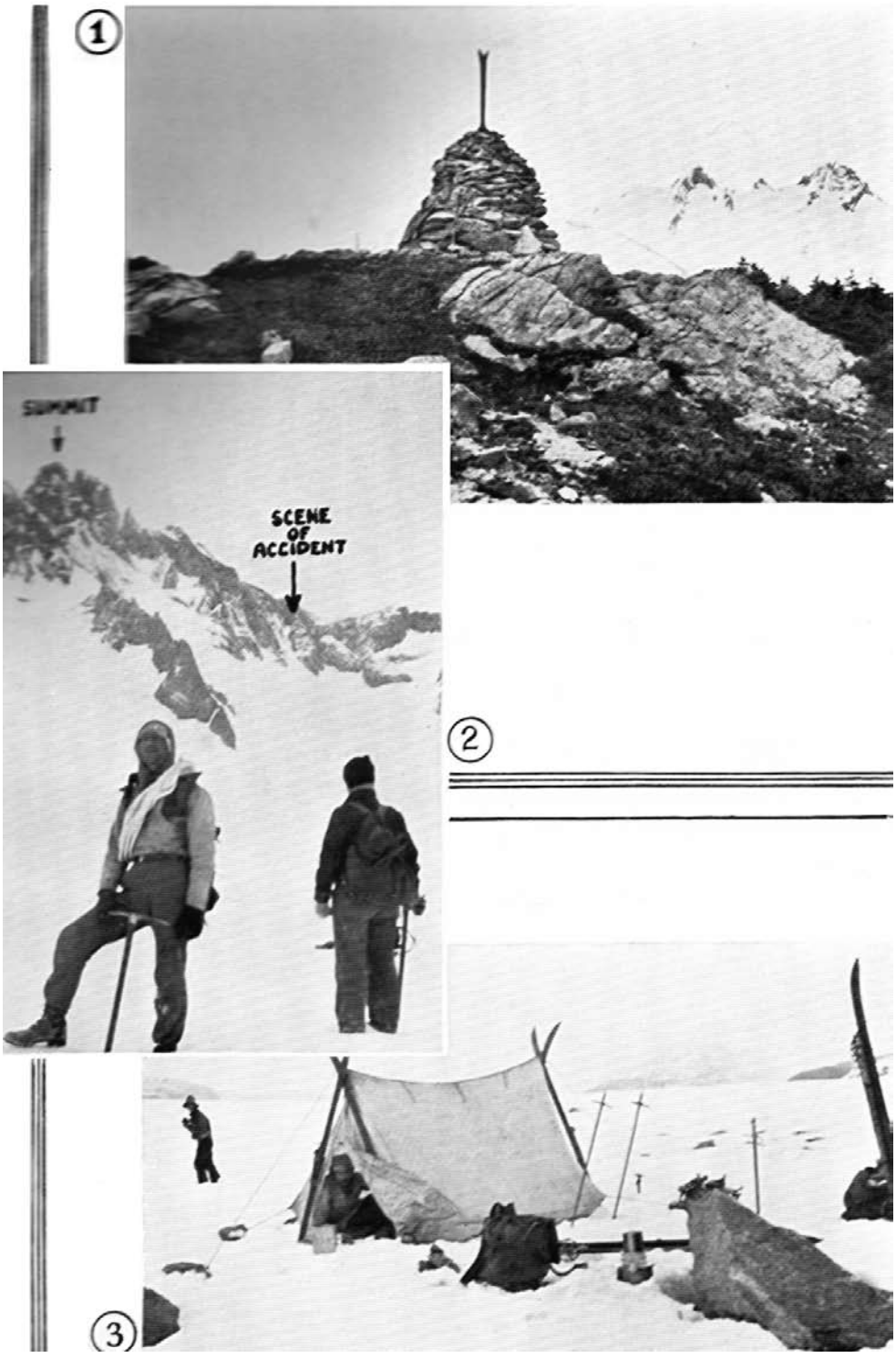
The last supposition is considered the most likely in view of the noise of nails scratching over rock that was heard.

Dalgleish was wearing a small rucksack containing perhaps 15 pounds of clothing and equipment, and had his ice-axe attached to his wrist presumably. One exasperating attempt to haul up the packs and ice-axes by rope had discouraged further attempts due to the rugged nature of the cliff. The impediment of the pack or ice-axe may have been a factor contributing to the accident.

Dalgleish's position as end man in descending threw a greater share of the responsibility for his safety on himself. Belaying had been a common occurrence on the ascent but it is not known whether he was attempting to belay himself as he might have done had he considered it advisable. The belay 30 feet below held by Brooks and the writer was of little assistance as events transpired. This uncertainty as to the precautions employed for the safety of the end man was a possible weakness in the technique of the party and could be traced to the rather indefinite allocation of the responsibility for dictating the technique to be used. Each of the party was experienced enough to handle difficulties as they arose and consequently some diffidence was felt in the self-assertion of leadership. Dalgleish was fully experienced in leading difficult climbs, however; he was extraordinarily well acquainted with the theory of mountaineering technique, and the other members of the party had every confidence in him during his periods of leading. It can only be assumed that the unforeseen happened.

One unfortunate aspect of the accident is that it might not have terminated fatally had Dalgleish not been roped. All evidence points to the supposition that he shot out free of the cliff and fell unimpeded from 30 feet above Brooks to 30 feet below, where he was presumably swung against the cliff by the tightening of the rope just before it frayed apart on the ledge above him; he then again fell unimpeded for about 100 feet into the snow gully. A straight fall into the snow would have been serious, but not extremely so—if stunned, the descent down the gully would not have ended disastrously judging from the course actually taken. The fact that Lambert had negotiated the scene of the accident un-roped, however, gives no justifiable reason for the general discarding of the rope in similar situations since its use, properly belayed or suspended from above, is the only safeguard to the last man coming down.

In conclusion, a few words concerning the mountain itself may not be amiss. Three failures to ascend the still virgin peak during the summer of 1934 have left an unfortunate impression in the minds of those who have had to rely on the newspaper accounts of the attempts. The summit



(1) The Cairn Erected On The High Knoll At The End Of Icefall Point. *Photo Eric Brooks*

(2) Scene Of Accident Taken On Second Trip. *Photo Eric Brooks*

The snow gully to the left of the butress is the one mentioned in the text. There was practically no snow on these rocks at the time of the ascent.

3) Camp On Waddington Glacier. *Photo Eric Brooks*

tower has been termed both “climbable” and “unclimbable.” One face (the southeast) of this tower yet remains to be inspected at close range, and its accessibility from this general direction was considered quite feasible by the present party once the main ridge was gained. The day after the accident, it was shown by the party from Winnipeg (which was climbing the opposite face of the mountain quite unknown to the present party) that the base of the tower can be reached from the Interior approach. There is every evidence that one of the alternate routes to this face, approachable from the Pacific side, can be utilized. The use of the adjective “killer” as applied to Mt. Waddington both in the press and on the radio is no more appropriate than when applied to other mountains on which fatal accidents have occurred, e.g., Mt. Robson or the Matterhorn. The adjective “unclimbable” as recently applied is certainly premature.

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SPECIAL NOTE FOR THE
CAJ DIGITAL EDITION

An oversized fold-out map, “Sketch Map of a portion of the Coast Mountains” by W. A. Don Munday, was included in the hardcopy version of the 1954 *Canadian Alpine Journal*. It is not included in this digital version due to size restrictions.

THE SOURCE OF THE TOBA RIVER[1]

By Alec Dalgleish

In the article on the Lillooet river watershed which appeared in last year's journal, Dr. Neal Carter describes how we sat on the summit of Meager mountain, a hitherto unclimbed peak of the B.C. Coast range and vainly endeavored to identify the snowy ranges which rose to the north and west.

The desire to view these peaks more intimately grew within us during the following winter and we finally decided to explore the source of the Toba river which we thought might lead us into them. Existing maps gave little information and showed, obviously, only the approximate course of the river.

We were fortunate in being able to muster the same party as in the previous year, namely: Tom Fyles, Dr. Neal Carter, Mills Winram and the writer. On Saturday, the 8th of July, we boarded the Union Steamship "Chelohsin" at Vancouver and at four a.m. the next morning unloaded at Redonda Bay, a tiny settlement on the rocky shore of Redonda island, which lies within the mouth of Toba inlet. Here we were met by Bill and Joe Barnes, sons of Walter Barnes, trapper and farmer of Toba inlet, and his Indian wife. We stowed our supplies in their dilapidated though dependable gas-boat and were soon chugging our way through the winding channels whose waters changed slowly from deepest blue to glacial green as we neared the head of the inlet.

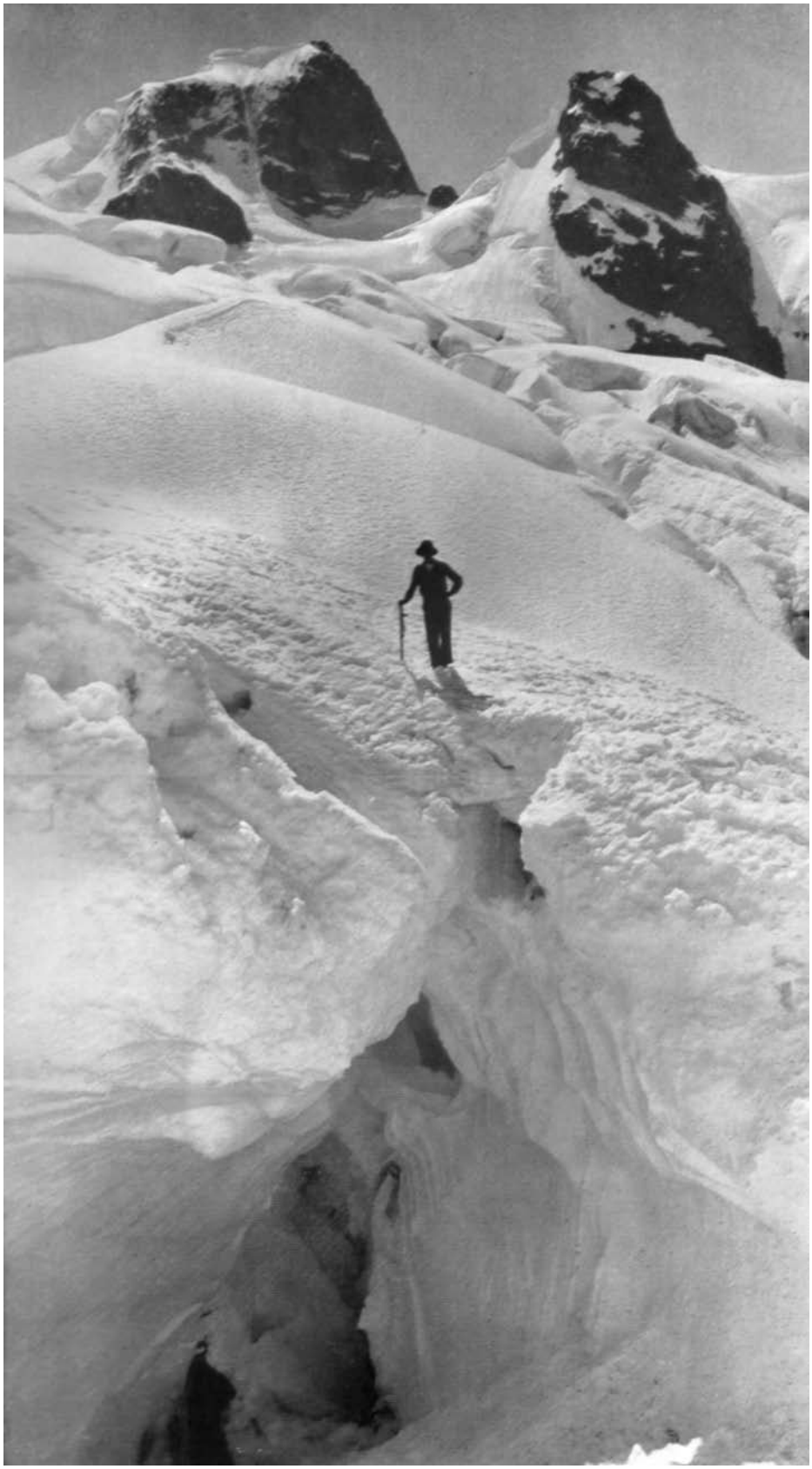
We arrived at 1.30 p.m., unfortunately too late for the high tide upon which it is necessary to start up the river. The remaining hours of the afternoon we spent in ascending a rocky peak of about six thousand feet which seemed to offer the possibility of a good view. On reaching the summit, however, we encountered a numbing wind and found the high peaks beyond the head of the river blanketed with clouds. Good views were obtained of two outstanding summits behind Salmon bay about half-way down the inlet and a very prominent rock tusk which dominated the horizon in the direction of Powell lake. We descended in darkness and rain to spend the last few hours of the night on the rough floor of Joe Barnes' shack among his numerous children.

With the high tide on Monday morning we started up the river and at 2.30 in the afternoon reached the first forks, sixteen miles from the inlet. Here we transferred from the gas-boat to a dugout canoe with outboard motor and continued on our way. With the weight of six men and our far from inconsiderable packs the canoe made slow headway against the rushing waters. Concealed snags were a constant menace to the fragile bottom of our craft but we escaped damage, thanks to the keen eyes of Bill and Joe.

After spending the night in a deserted logger's cabin we continued in the canoe on Tuesday. The river grew swifter and swifter and finally we took to the shore while Bill and Joe cajoled the canoe along with pole and kicker. At noon we came to a rapid and decided that the time to back-pack had come at last. We had travelled twenty-five miles of the river by boat. Unfortunately, so snake-like are the windings of the Toba that our air-line distance from the head of the inlet was only about fifteen miles.

After bidding farewell to Bill and Joe who were to meet us at this spot eleven days later, we divided our supplies into four packs, finding to our surprise that these weighed but fifty-five pounds

1 Owing to the tragic accident which befell the writer of this article the year following the expedition herein reported, it has been suggested that a revision of certain place names mentioned in the article and sketch map be made. It would seem appropriate that Julian peak be re-named MT. Dalgleish, and the name Julian peak be transferred to the peak marked "5" on the sketch map. -N.M.C.



Mt. Dalgleish

each. Surplus equipment was left in a trapper's cabin nearby, the last habitation on the Toba river. For the rest of the day we followed a sketchy trapper's trail along the river bank. Sometimes the trail was good but it had a disconcerting trick of petering out in the midst of almost impenetrable tangles of devil's club, vine maple and other exasperating Coast range vegetation.

We camped that night on a damp and foggy sand-bar and on Wednesday continued our bush-whacking. Late in the afternoon the river swung to the north and we found, to our joy, a wide gravel-bar which we followed for half a mile before camping.

Early on Thursday morning we came to a fork in the river. The two branches, one from the north, the other from the east, appeared to be almost equal and each descended rapidly from higher elevations, which convinced us that we were at last nearing the source of the river. We found ourselves in a quandary. Which branch should we follow? At our low elevation (two or three hundred feet above sea level) in such a narrow valley we could see little of the peaks beyond. We decided to reconnoitre before committing ourselves to either route. Accordingly a hurried ascent was made to a height of 4500 feet on the ridge west of the north branch. Another two or three thousand feet up an enticing snow-ridge would have won us the first ascent of a fairly respectable little peak but we chose rather to spend the precious daylight hours in studying the now much more extensive view.

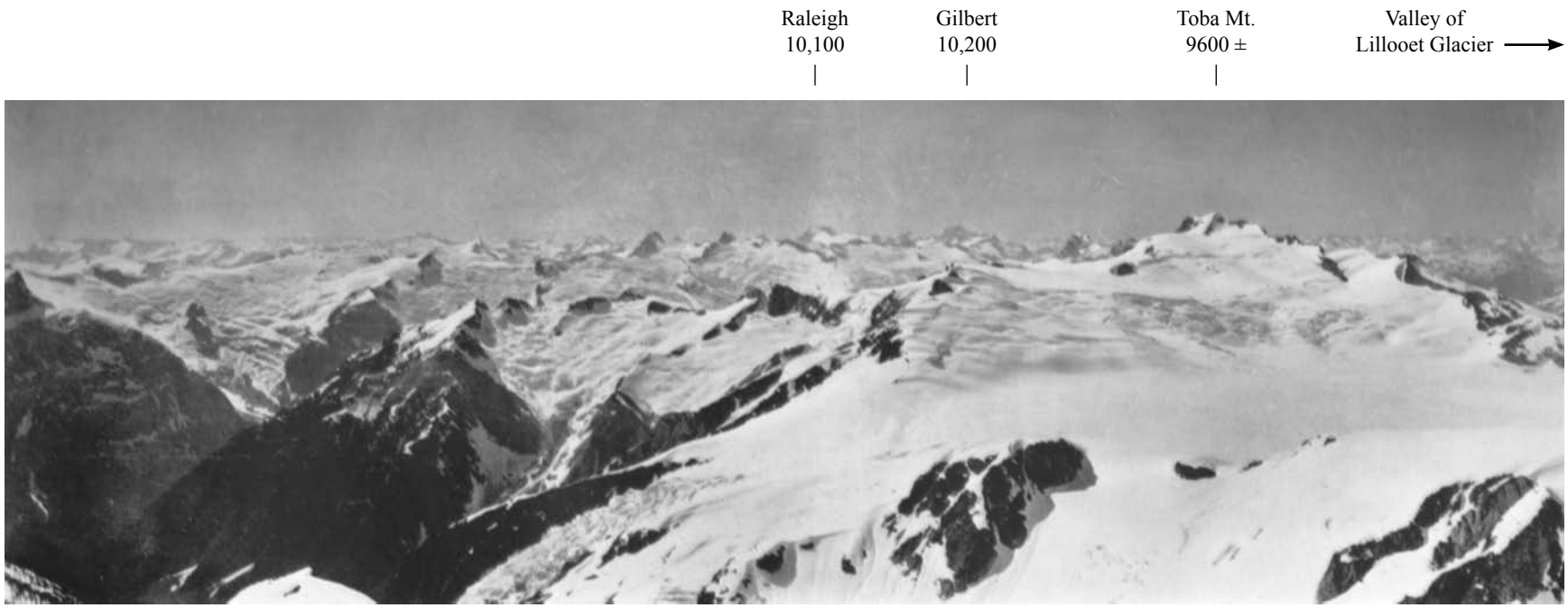
We could see that within a few miles of the forks each branch sprang from a parent glacier. The northern glacier appeared to descend to a very low level, possibly between one and two thousand feet; the terminus of the eastern glacier we estimated at 2500 feet, later proving it to be 2700. The day was clear and high, ice-clad peaks were visible in both directions. A massive peak whose clinging ice-falls cascaded clown into the east branch appeared to dominate all the others however and eventually the desire to climb it determined our course of action.

On the following day, Friday, we made up packs with five days supplies and started up the east fork. The bush proved to be slightly less dense but it was five p.m. before we reached the tongue of the glacier at 2700 feet. Due to the heavy snows of the previous winter we knew that the higher benches would be snow-clad and elected to camp on a more or less knobbly patch of sand beside the ice. During the following three days at this camp a new article of diet was added to our menu. We called it "citronella porridge" and it came into being through the proximity of these two substances in my pack and subsequent impact with the rocks of the moraine. After four breakfasts of the pungent but nourishing mixture we found ordinary porridge rather flat and tasteless.

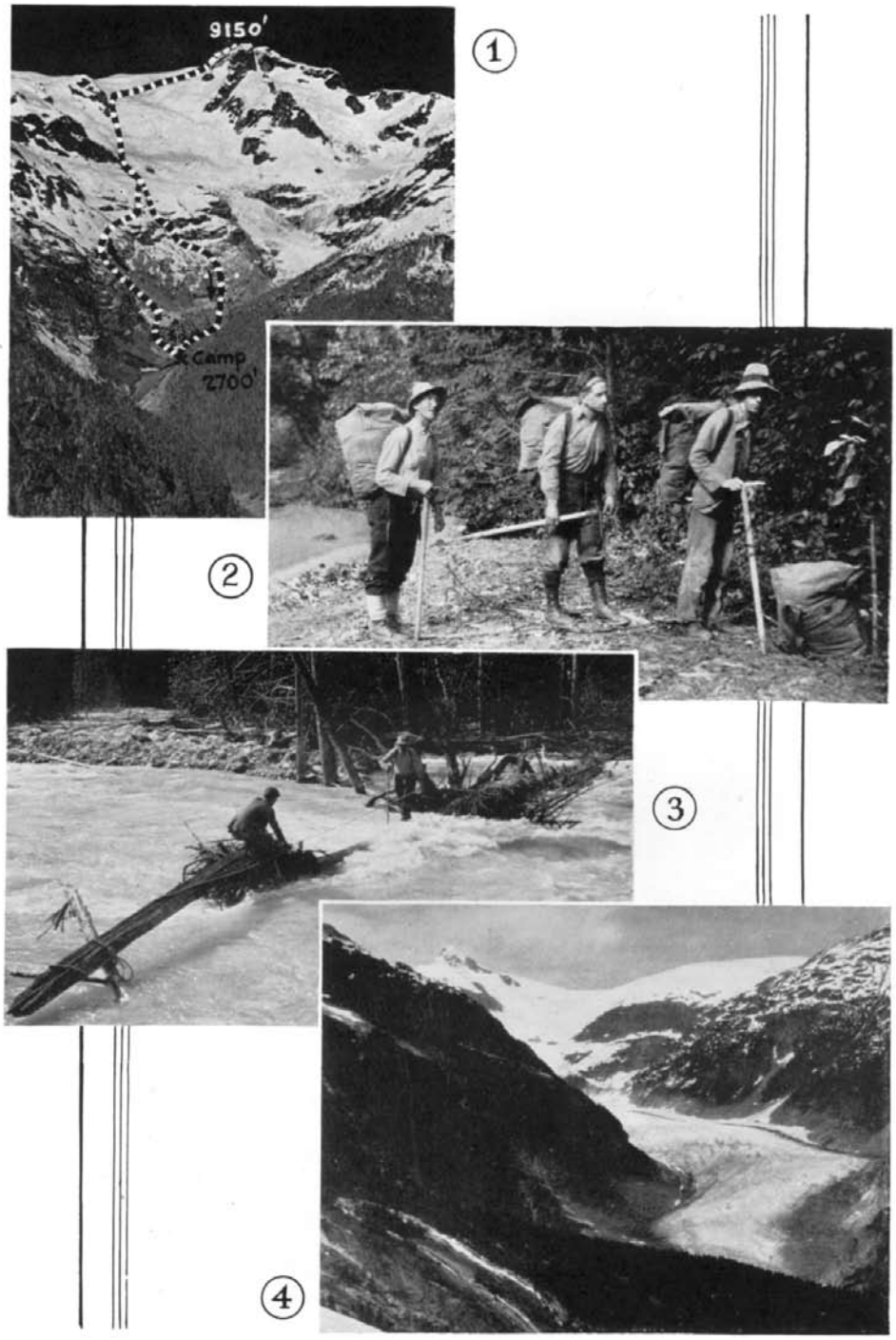
Leaving camp at 5.30 a.m. on Saturday, the 15th, we crossed the glacier tongue, scrambled up a rocky slope above the northern moraine and after a strenuous hour or so left a well-cursed band of slide alder behind us and emerged upon the upper snowfields. It was a perfect day and our peak looked magnificent with the sun glancing off the curving folds of ice which draped its sides. Our preliminary bush-whacking had brought us above the first and steepest ice-fall of the glacier. An hour's trudge on gradually rising snow-slopes brought us to the base of the second ice-fall where we roped up.

The abundance of snow facilitated our progress through the crevasses but it grew unpleasantly soft as the sun rose higher. At last we gained the north ridge of the mountain a few hundred feet below the top and there to the east lay the Lillooet river peaks. Neal produced a panorama taken from one of these in 1932 and for the first time we were able to identify the peak on which we stood.[2] Many previously unseen peaks were now visible to the north and west while

2 *Canadian Alpine Journal* XXI, 1932 opp. p, 16. "Panorama from Polychrome Ridge"; peak climbed in 1933 is seen in extreme distance directly above the "M" in "Polychrome".



View West From Summit Of Julian Peak. *Photo A. H. Dalgleish*



(1) Infra-Red Photograph Of Julian Peak (Mt. Dalgleish). *Photo A. H. Dalgleish*
From ridge west of N. Branch of Toba river. July 13.

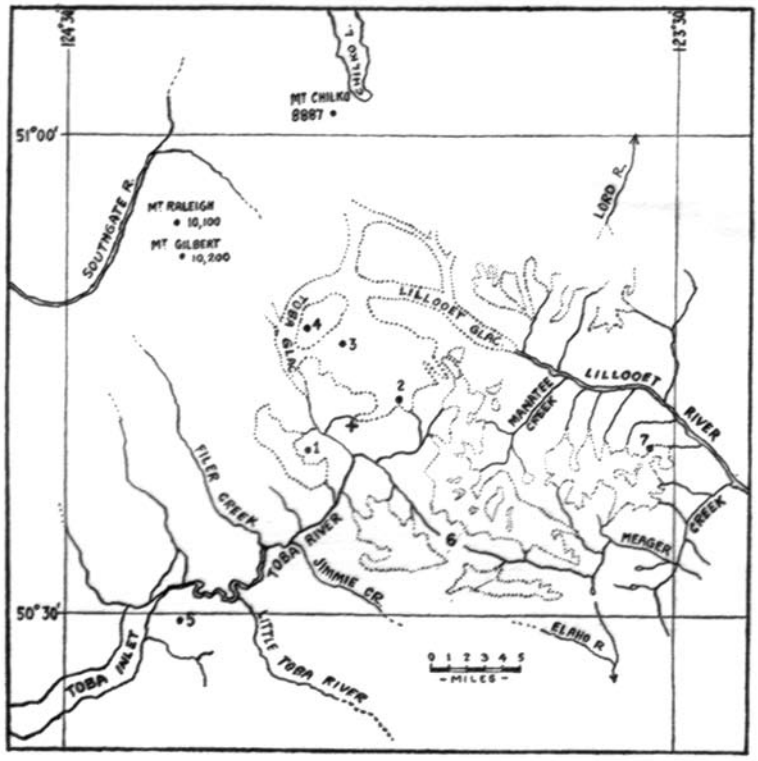
(2) All Set For Bushwhacking, Tom Fyles, Mills Winram, and Dr. Neal Carter. *Photo A. H. Dalgleish*

(3) Crossing The Toba River Just Below The Forks. *Photo A. H. Dalgleish*

(4) Toba Mt. And Source Of N. Branch Of Toba River. *Photo A. H. Dalgleish*
From ridge climbed July 13.

a few miles away, between us and the north branch of the Toba river rose a heavily glaciated summit, apparently higher than the one on which we stood. Much farther in the same direction (northwest) were two outstanding masses. These were probably Raleigh and Gilbert, 10,100 and 10,200 feet, shown on the recently published four-sheet map of B.C., and located on the watershed of the Bishop river, a tributary of the Southgate. Still farther to the northwest, Mts. Waddington and Tiedemann could be seen.

A little more snow-plugging on the ridge brought us to the summit at 2.00 p.m., 9150 feet by our aneroids. A couple of hours passed all too rapidly while Neal took a round of angles. Our vision embraced almost two hundred miles of the Coast range, from Garibaldi in the southeast to the Tiedemann peaks in the other direction; Mt. Waddington had coyly retreated behind a nearer mountain. The high range at the head of Manatee creek, a branch of the Lillooet river, presented



SKETCH MAP OF LILLOOET-TOBA WATERSHED AEEA

(CF. *C.A.J.,* VOL. XXI, 1932, MAP OPPOSITE PAGE 12).

1. Ridge, 4000 ft. Climbed for reconnoitring purposes.
2. Julian peak, 9150 feet. Climbed July 15, 1933.
3. Toba Mt.. on which unsuccessful attempt was made (approx. 96OO feet).
4. Un-named peak, approximately 9500 feet. Unclimbed
5. 6000-foot peak climbed for reconnoitring purposes by present party, and by writer and Dr. Carter a month previous, June, 1933.
6. Wooded pass (approx. 4500 ft.) between Toba and Lillooet rivers ystems,
7. Meager Mt., 8830 ft. Ascended in 1932 by same party.

from here an aspect even more enticing than that of last year. The existence of a low, timbered pass south of these peaks from a branch of the Toba into the south fork of the Lillooet river appeared to be verified. We had been told of it by Julian, the eighty-six year old chief of the Toba Indians. In

honor of this oldest inhabitant of Toba inlet we would like to suggest the name Julian for the peak we climbed. Toba mountain would seem appropriate for the higher peak (approximately 9600 feet) to the northwest, as it is the highest point on the Toba river drainage system.

Sunday was a day of rest, more, I am afraid, for the good of our bodies than our souls. Mills had a very sunburnt face due to his child-like faith in the anti-actinic properties of castor oil, and I was quite lame with an infected sliver in the calf of my right leg. Tom's hands were very sore from the effects of devil's club needles. The familiar spirits of the Toba river apparently resented our intrusion.

On Monday, Tom, Neal and Mills made an attempt upon Toba mountain. Attempting to follow a route which appeared feasible as seen from Mt. Julian, they found themselves in dense fog amidst a maze of crevasses. Crossing toward the southeast face to avoid these, they managed to ascend the east ridge to a height of 8400 feet where a combination of fog and general bewilderment as to the nature of intervening glacier-covered ridges forced them to turn back after spending over two hours huddled in a scooped-out hole waiting for the clouds to lift. On descending to the great snowfield which lay between Toba and Julian they got below the fog and decided to explore its northern extremity. Almost an hour and a half was required to reach this point but they were rewarded with a view of the upper reaches of the great Lillooet river glacier. These appeared to originate chiefly in the snowfield on which the party stood, though other tributaries came in from the north. The ice also sloped to the west and almost certainly curved around the west side of Toba mountain to feed the north branch of the Toba river.

Despite two days rest my leg was still worse on Tuesday morning and as we were to meet Bill and Joe on Friday we decided that we must start out at once. I forced a climbing boot upon my protesting limb and by evening we were back at the junction of the north and east branches. The next two days travelling I found anything but pleasant although I enjoyed all the privileges of an invalid, carried no pack and loafed in the sunshine while the others labored to fell a huge tree that we might effect a crossing of the river. On Thursday afternoon we regained the trapper's cabin, our pre-arranged meeting place with the boat.

On Friday, Tom and Neal ascended to a height of four thousand feet on a steep and bushy side-hill while Mills and I lay on a sand-bar and awaited the boatmen who duly appeared about 4 p.m. The same night we ran swiftly down the river as far as the first forks and by Sunday afternoon were once more upon the "Chelohsin" and headed for Vancouver.

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THE EREMITE AND BEYOND

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

Early in the summer of 1933 a group of "dyed-in-the-wool Tonquinites" assembled in an Alberta farmhouse for the purpose of formulating plans for a climbing expedition in—strange as it may seem—the Tonquin region. As nominal leader of the party, I was reading a provisional programme covering our day-by-day activities. Presently I came to the item "Sunday, August 6—Rest." There was a low moan from the others, and one of them said sarcastically: "What! Are you going to waste a whole day resting?"

The personnel of the 1933 expedition differed from that of former years in the fact that it was restricted to experienced climbers. Our principal objective was the exploration of the valley of Simon creek, hitherto unvisited by mountaineers. It was our intention to motor to Jasper, but the Jasper highway being as usual impassible for cars, we took the train on the morning of July 31, and early on August 1 we started up the too-familiar Portal creek trail, en route for the Memorial hut.

We were all members of the Club, three men and three ladies. Miss Olive Haw, Miss Watson ("Billy"), Miss Helen Burns, Rex Gibson, Robin Hind of Calgary (Bob) and C. G, Wates ("The Skipper"). On, the eve of our departure from Edmonton I received a most welcome telegram from New York, as the result of which our party was later enlarged and greatly strengthened by the addition of E. L. Woolf, who had been with us in 1931. Jack Hargreaves was, as usual, our outfitter.

We reached the Memorial hut in the late afternoon by devious routes. Rex and Bob elected to cross the summit of Mt. Maccarib, the Skipper played the lone wolf over the pass between Maccarib and Clitheroe, while the girls decided to brave the fly-infested shores of Amethyst lake with the pack-train. The strenuous members of the party were rewarded by one of the finest views of the Ramparts in our experience, which more than repaid the Skipper for the unexpected intensity of the glare on the little snow-slope below the pass, his goggles having been forgotten, or deemed unnecessary.

On August 2, while some of the party were engaged in the second ascent of Paragon Peak, the rest of us spent the day in surveying and photographing the Para glacier. While this glacier is small and relatively unimportant, it is the only glacier within reach of the hut which is suitable for annual measurements. The much larger Fraser glacier is, unfortunately, so masked by terminal moraines that accurate measurements of the tongue are impossible.

August 3 was spent in an abortive attempt on Alcove mountain, which ended in a rainstorm at "Arrowhead lake" near the snout of the Eremite glacier. The party inspected and enthusiastically approved the proposed site for a Club Camp which Sibbald and I had chosen in 1932. The spot is dry and well-timbered, affords magnificent views of the surrounding peaks and is comparatively free from the noxious insects which are the bane of climbers in the Tonquin valley proper.

On August 4, while the rest of the party were engaged in the ascent of Alcove, Helen and the Skipper walked up to the Warden's cabin on Maccarib creek in search of Olive's ice-axe, which had fallen from a pack-horse on the way in. On the return trip, the usual rain set in when we reached the Astoria crossing, so we built a fire in the lee of a big spruce and awaited the coming of Ned Woolf. At about ten o'clock we were cheered by the sound of voices in the darkness and soon we were slogging down the series of mud-holes which served for a trail, as it turned out for the last time. On our arrival at the hut, Ned was greeted in style by a "pajama party" and we were once more reunited.

August 5 was another day of rain, occupied by Rex, Ned and Bob in laying a cache on the Fraser glacier and by the others in cooking, loafing or cutting trail, according to our individual tastes. The weather remaining unchanged on August 6, we went up on the Para glacier. Some improved their ice-craft on the séracs while others crossed to the Fraser glacier and visited the site of our 1929 bivouac after the traverse of Simon and McDonell peaks.

On August 7, desperate with inaction, we took the bit in our teeth and back-packed over the glaciers to the head of Simon creek where we bivouacked for three nights. It was our first close acquaintance with the Simon valley and we were delighted with its pastoral beauty and by the varied grandeur of the peaks which assume an importance quite out of keeping with their actual height, owing to their heavy glaciation and the low altitude of the valley floor. The park-like lateral valley between Mts. Elephas and Blackrock is a particularly charming spot and will make an ideal site for a Club Camp in about 1950!

The natural bridge over Simon creek is a most interesting feature, since the river plunges into a spectacular little canyon immediately below it. There are four glaciers within easy distance of the valley head, all of which will lend themselves to annual study, as they can be reached from the Memorial hut in an easy day (round trip) and they are entirely free of surface debris. They are the Elephas, Mastodon, Simon and Fraser (south tongue) glaciers. I suggest that the last, for convenience, be called the McDonell glacier, it being fed almost entirely by snowfields on that peak.

On August 7, Mastodon was climbed, on August 8, Elephas and Blackrock, all first ascents. On August 9, the second ascent of Elephas was made and on the 10th the party returned to the hut, Bennington being climbed en route. Fine weather had favored us after we had entered the Simon valley and continued unbroken until we returned to Jasper.

August 11 was a day of rest which was spent in part on the shores of Outpost lake, a little sheet of water of exquisite beauty about ten minutes scramble from the hut. On the 12th the second ascent of Oubliette was made. On the same day Billy, Helen and I visited Thunderbolt lake, which although it is at tree line, proved to be surprisingly warm and tempted us all to swim. It will be an added attraction when the Club holds a Camp in the Eremite, as it is within fifteen minutes walk of the camp site.

That day we met a trail gang in the valley and were delighted to learn that they had completed a new trail from the south end of Amethyst lake to Chrome lake, so that it would no longer be necessary to brave the terrors of the old route. They also built a good bridge over Eremite creek, which will be a great convenience in reaching the head of the valley.

On the 13th, Helen, Billy, Olive and the Skipper returned to Jasper and civilization, leaving Rex, Ned and Bob to tackle Dungeon and Geikie.

PARAGON PEAK (ca. 10,000 ft.)

Second Ascent

Narrative by Gibson

As in 1931, our stay in the Tonquin this year began with a spell of bad weather, heavy rain at low altitudes and much fresh snow on the heights. In fact, as I got my first view of the Ramparts from the summit of Mt. Maccarib and saw Dungeon's mantle of white, glistening in the sun, I felt none too sanguine about our chances of success, on that peak at least.

However, we were up with the lark on Wednesday, August 2, and decided to attack Paragon and make a training climb of it. Paragon had then the double attraction of being the closest major peak to the hut and of being unclimbed since Howard Palmer made the first ascent in 1919. The party, consisting of Billy, Bob and myself left the hut at 6.15 and followed the well-known route up the Para glacier. We passed close under the cliffs of Parapet Peak and crossed the head of the

east lateral moraine to the small subsidiary glacier descending from Para pass.

From this glacier, a well-marked, steepish snow couloir ascends and makes connection with the big snow-slope which is such a prominent feature of Paragon's southeast face. We roped up at the foot of the couloir (7.55 a.m.), and reached the top in 55 minutes. We found the slope above decidedly steep, but in spite of fresh snow, we made good progress. About half-way up the slope, as the angle was becoming severe, we crossed over to the rocks of the southeast face and climbed them to within 200 feet of the summit. Here, again, we had to tackle very steep snow.

From this point we had a most spectacular view of Amethyst lake, some three thousand feet down and seemingly vertically below us. The angle of the snow was such that we resorted to climbing one at a time, which slowed up the party, so that the summit was not reached until 1.15 p.m. We spent an hour there and got a very fine view of the forbidding south ridge of Mt. Oubliette, which caused so much trouble to Dr. Strumia's party in 1932; but it was Dungeon's still virgin towers which held our gaze. With its covering of fresh snow it looked grim indeed and a tough proposition. The snow was not without its advantages however, for it revealed the presence of sundry ledges and also of a diagonal chimney in the summit mass, thus enabling us to pick out a tentative route on the west face, a reconnaisance which proved most valuable later.

We stayed one hour on the summit and then descended by a slightly different route. We reached the unroping place in four hours and were back at the hut at 7.10 p.m. Our times were slow, but conditions were poor and we had no knowledge of the route. Paragon is an interesting climb, though of no especial difficulty, and it serves excellently as a good training climb.

ALCOVE MOUNTAIN (ca. 9200 feet)

First Ascent and Traverse

Wates has already described our false start for Alcove mountain on August 3. The following day was still cloudy, but we left the hut at 8.10 a.m. and again headed up the Eremite valley. The party consisted of Billy, Olive, Bob and myself.

Alcove is an attractive little peak, with two summits, and is more of a snow than a rock climb. We made rapid time to the foot of the north ridge, which appeared to afford a good rock scramble, as a contrast to the monotony of the snow grind we had had up the glacier.

When, however, I attempted to climb the ridge, which at this point came to a knife-edge, I found the rock so disintegrated that it would have been madness to attempt to take a party of four up it. I do not remember ever having encountered such badly weathered rock, and it was quite a ticklish job descending the twenty feet or so up which I had climbed.

Forced to take another route, we had an interesting climb on the steep snow-slope, immediately above the bergschrund. No further difficulties intervened, and we reached the east or lower summit at 1.10 p.m. Bob set to work to build a cairn, and we dived into our nose-bags and enjoyed the lunch and the view. Traversing the ridge, we were on the true summit at 2.30 p.m., where another cairn had perforce to be built. The sun came out during the descent and we enjoyed a really fine glissade down about 500 feet of steep snow. We were back in the hut at 6.30 p.m. The rain came down in torrents again at nine o'clock.

There are still two unclimbed peaks in this valley, Angle (ca. 9500 ft.) which looks rather uninteresting, and "Anchorite" (ca. 9400 ft., formerly "Deseret"), which also looks easy, but a better climb than Angle. There is also a pretty little rock peak forming the south buttress of Eremite pass, which, although only about 8500 feet, should afford good practice in rock climbing.[1]

1 This estimate was verified at the 1934 A.C.C. Camp. Especially good rock work was found on the last named peak.

MT. MASTODON (ca. 9800 ft.)

First Ascent

With the Eremite peaks well explored, our thoughts turned to the unclimbed summits on, the Divide between Simon creek in Alberta, and the Fraser valley in B.C. On August 5, Ned, Bob and I laid a food cache at 7200 feet on the Fraser glacier. While up there we were much surprised to see the tracks of a large bear, which was apparently travelling towards the hut, and evidently knew as much about this glacial short cut between Simon creek and the Astoria as we did. It made us a bit doubtful about caching food, even at this altitude, but we argued that there was little chance of the bear retracing his steps in the near future, and we took the risk.

Sunday was another rainy day, and we did not start until Monday. Leaving the hut at 7.35, we reached the cache at 9.20. Here we added to our loads until we/had about 50 pounds apiece, and started off into the Unknown. The "advance guard", Billy, Ned, Bob and I, went ahead to locate a bivouac site. It speaks volumes for the attractions of the Tonquin district, when I record that Ned Woolf had come all the way from New York to join our party. We were more than delighted to renew the friendship begun in 1931.

Having located the bivouac about a mile and a half below the tongue of the "McDonell glacier", we dumped our loads and began to erect a shelter. It was only 11.30. The day was young and we were not much fatigued. I think we all had the brain wave at one and the same instant. "Why not attempt one of the unclimbed peaks today?" It did not take us long to throw a lunch into our rucksacks, and we were off again at five minutes after noon, August 7.

I am bound to admit that it is not strictly according to Hoyle to set out in the afternoon to make the first ascent of a peak involving 4000 feet of climbing, yet "fortune favors the brave" they say, and we quieted our consciences by pretending that we were only going to reconnoitre the approaches to Mastodon. We made good progress, however, and stood at the base of our peak at 3 p.m.

The south ridge looked to be a good line, and crossing the snow slope on the shoulder at about 9000 feet, we were on the summit at 4.10 p.m. where Bob built the cairn as usual. The views of the Fraser massif and the big snowfields beneath were extremely fine. Away to the north, Geikie's great bulk was perfectly framed in the deep notch of Scarp pass. We left the summit at 4.40 p.m. and took a much better line down the Elephas glacier, enjoying some excellent glissades on the way. The Mastodon moraines are numerous and wearisome, as the glacier is in rapid retreat, but we took a bee-line to the bivouac, where we could see the smoke of the camp fire, and were back there at 6.30 p.m.

The others had got the camp all shipshape, and when we informed the Skipper that we had made the first ascent of Mastodon, he looked rather incredulous. No wonder, for we had made fast time, especially after backpacking our share of the outfit over a high pass that same morning.

MT. BLACKROCK (9580 ft.)

First Ascent and Traverse

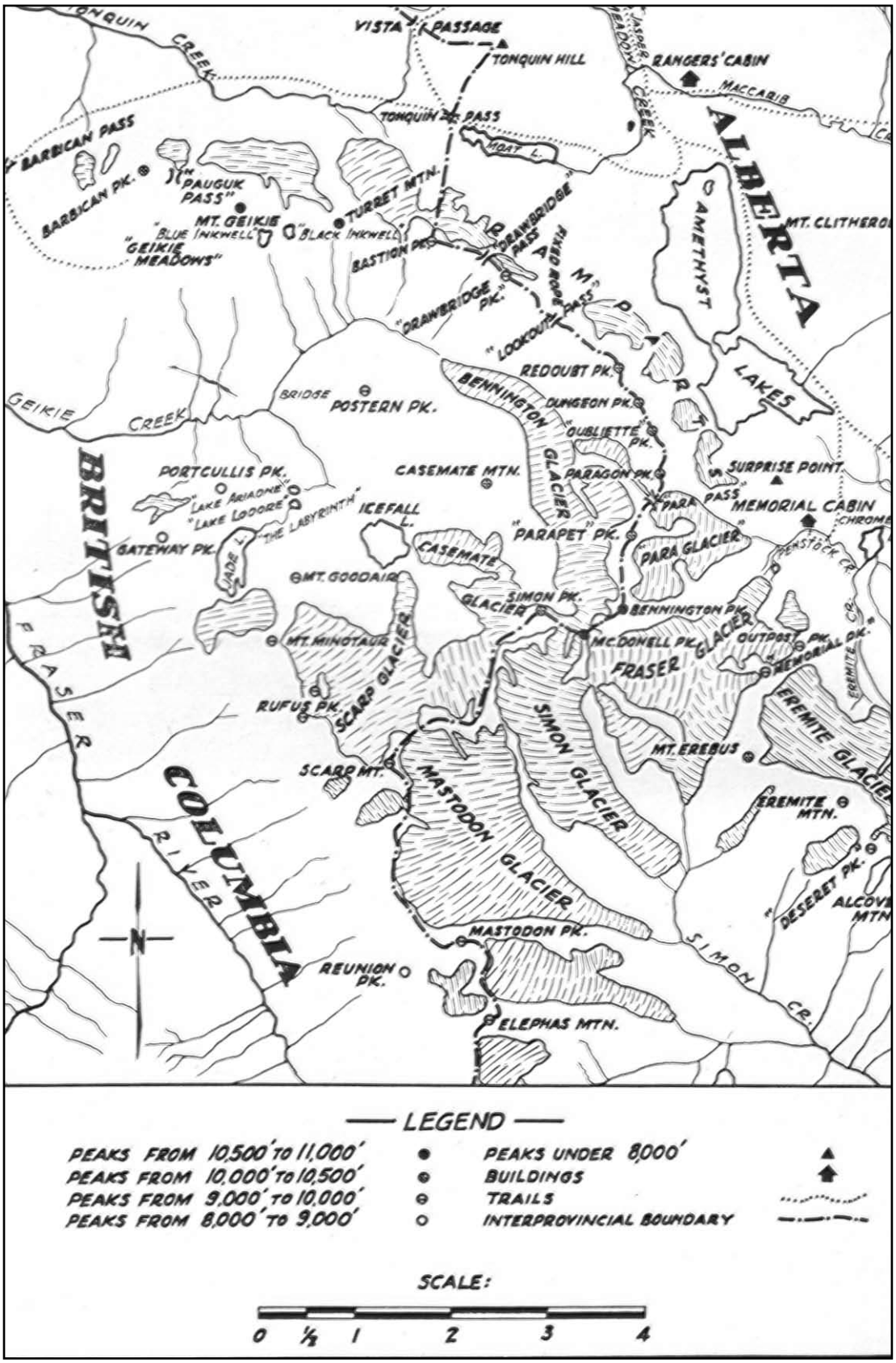
It was very considerate of the Interprovincial Boundary Survey in 1921 to leave the best peaks for us to climb, for within three miles of our bivouac, there are two fine mountains on the Divide just south of Mastodon, both of whose summits were as yet unadorned by cairns. Deciding to make a day of it, Wates elected to lead the ladies to the assault of Elephas, while Ned, Bob and I tackled Blackrock, which was a bit more difficult of access. For its height, this mountain possesses a very fine glacier with a steep ice-fall so, having this in mind, we took our crampons along.

Simon Valley From Mt. Elephas. *Photo R. Hind*

Left to right, Beacon Peak, Whitecrow Peak, Ermine Peak, Blackrock Pk.

Mt. Elephas From Black Rock Lake. *Photo R. Hind*

Route of traverse follows skyline from right to left.



Map Of Eremite Region

Leaving the bivouac at 7.55 a.m., we bush-whacked through fairly easy country without much deadfall, and came out a little above the snout of the glacier at 11.15 a.m. Strapping on our crampons, we climbed about 1000 feet of steep ice, threading quite a maze of crevasses, and emerged on the snowfield 65 minutes later. On our left was a beautiful little snow peak, a perfect pyramid 8700 feet in height, which to our hungry eyes looked like a gigantic iced cake. Ned jokingly christened it "Creampuff"![2]

We gained the col to the east of Blackrock and two hours of good rock scrambling took us to the summit (3.10 to 4.00 p.m.). Descending by the northwest ridge, we saw the other party on the summit of Elephas, and were glad to know that they too had been successful, as the aspect of Elephas from Blackrock was most forbidding. We came down into the valley between Elephas and Blackrock, reaching camp at 7.30 p.m. by a slightly easier route, keeping above timberline and crossing the snouts of the Elephas and Mastodon glaciers. We were made rather anxious as night fell, by the non-appearance of the other party, and we kept the fire going until midnight on the chance of their coming in late.

MOUNT ELEPHAS (9810 feet)

First Ascent and Traverse

Narrative by Wates

Although there is no doubt that this peak was named by the Boundary Survey from the fact that it is adjacent to Mt. Mastodon, and not from any actual resemblance to the animal in question, it is a singular coincidence that as seen from our bivouac the mountain forms a perfect elephant, trunk, ears and eye complete.

Billy Watson, Helen Burns, Olive Haw and myself were the party for the attack on Elephas. We left the bivouac at 8.15 a.m. and crossed the natural bridge over Simon creek. A short tramp brought us to the tongue of the Mastodon glacier, which we crossed and then ascended a very steep and slippery lateral moraine to the level of the extensive névé between Mastodon and Elephas. Seen from this point it was obvious that the only practicable route lay up the east arête. Everywhere else the cliffs descend sheer to the glacier and near the west end, which is the true summit, they actually overhang.

The only point at which the arête could be gained was a notch about 400 feet above the glacier, from which a broad, snow-filled gully led to the ridge. From a distance this gully looked as though the presiding deity of the peak had been emptying his tea-pot down the snow, so we christened it "Tea-leaf Couloir" and kept a respectful distance from its stone-swept centre. About half-way up we stepped from steep snow into the rottenest chimney I have ever encountered in my climbing career.

We left our ice-axes at the foot of the chimney and devoted nearly an hour to climbing three hundred feet of easy rock, our style resembling the proverbial gait of a cat on hot bricks. When we reached the little col, we ate some lunch and surveyed our route. The ridge seemed to be divided into three sections: the lowest easy, the topmost difficult and the centre impossible, being composed of an immense slab without visible holds. However, we started up in the cheerful belief that difficulties commonly disappear when one approaches them.

Our only check between the col and the slab took the form of a narrow, almost vertical gully on the south side, filled with hard snow and crested with a cornice which had started to break

2 The name "Ermine Peak" is suggested for this lovely unclimbed peak. C. G. W.

away. Closer inspection, however, revealed the fact that the supposed cornice was merely a part of the gully itself, separated from it by a miniature bergschrund, so we gaily walked across and resumed our rock climbing.

The "impossible" slab proved to be the simplest part of the climb. It was appallingly steep and smooth, but a faint line that was just visible from the col turned out to be a perfect foot-path; a ledge fully ten inches wide and sweeping up the face from right to left. Above the slab the arête loses itself in the summit mass, and here we had the best climbing of the day, in the form of a series of pitches where rubber soles would have been most welcome.

The peak was ours, and a long tramp over broken rock brought us to the true summit, where the customary cairn was built. The weather was perfect and we had magnificent views of the whole Tonquin area from Geikie and Turret, to Edith Cavell, but our eyes were drawn again and again to the southeast where, apparently blocking the mouth of the Simon valley, the castellated mass of Needle Peak loomed dramatically through a thin veil of haze, its culminating tower a challenge to the climber.

Ambition would be satisfied by nothing less than a traverse, so after descending the scree slopes of the west face for a short distance, we gained the southwest arête and proceeded down it directly towards Mt. Blackrock. About half-way down the ridge there occurred one of those rarest of mountaineering events—an unavoidable accident, due, in this instance, "solely" to defective nailing of a boot. While the results were nothing more serious than lacerated hands and a broken finger, we were considerably delayed by the necessity of re-roping, as the leader doubted his ability to handle the rope. Billy Watson was voted into the responsible position of last man, and she filled it like a veteran.

The climbing was more difficult than we had anticipated, but as the Skipper looked up after nursing his painful palms down each pitch, he was always greeted by "Bill's" cheerful grin, as she belayed her charges from above. At last, just as the light failed, we set foot on the snow. It was out of the question to cross the col and regain our axes, so we ran down into the valley between Elephas and Blackrock, and followed the bank of the stream towards our bivouac.

By eleven o'clock we had all had enough, so we camped in luxury by a big fire until dawn, when we returned to the bivouac where breakfast, splints and bandages and a sleeping bag topped off a most enjoyable expedition.

MT. ELEPHAS

Second Ascent

Narrative by Gibson

On August 9, Bob and I made the second ascent of Elephas, with the primary intention of recovering the ice-axes and rucksacks of the other party. Acting on their advice we took sneakers along, and in consequence made much faster time. We followed the east ridge, both in ascent and descent. Aside from the apparently difficult slab, which is bisected diagonally by a ledge like a goat trail, we turned the other difficult places by traversing to the left.

From the small col above the glacier our times were 2 hours up and 1% hours down. We were back at the bivouac by 5 p.m.

BENNINGTON PEAK (10,726 feet)

Second Ascent and Traverse

When we got back from Elephas, we found the others well rested, and we held a council of war as to what was to be done on the morrow. Time was getting short and we had to return to the hut. But why not climb something en route? There were two possibilities, Erebus or Bennington_

both would be second ascents—but from our bivouac we could see that Erebus was no terror; it was only an easy scramble, whereas we knew that Bennington would not yield without a struggle. Another reason for going after Bennington was that the Bennington-Parapet traverse was on our original programme, so Bennington it had to be.

Ned, Bob and I were to be the storming party, and we left the bivouac at 7.10 a.m. with heavy packs. Two and a half hours saw us at the top of the pass between the Fraser and McDonell glaciers.

We cached our loads there and left a note for the others, saying that we would pick them up, if we were unable to complete the traverse. I gave Bob the job of leading the rope, and we had an interesting climb up the south face to the McDonell-Bennington col, a broad snow-ridge, corniced on both sides. As the face was exposed to a hot sun, there was quite a bit of danger from snow slides. One avalanche did come down and obliterate our tracks made five minutes previously.

Gaining the summit at 1.45 p.m., we found the records of the first ascent in 1926. The cairn had evidently been struck by lightning, for the metal film box in which the record had been placed was full of holes, and the paper was badly charred.

One look at the very narrow ridge connecting Bennington and Parapet convinced us that the completion of this traverse was not for us. Cornices would make it a long and very trying climb, with quite an element of risk. To return the way we had come was also risky, as the afternoon sun was very hot and the snow was still avalanching. There remained the east ridge, of which we could see only the first 200 feet, but it looked like a really good rock climb, and when in doubt, I had rather tackle a ridge than a face or gully. One is at least safe from stonefalls and snow slides, and can always rope off from overhanging pitches.

We started down at 2.50 p.m. and had a splendid climb down some 2000 feet of this ridge until we came to the head of a 1000-foot snow gully, leading straight to the Fraser glacier, and about in line with our cache. During the descent, I chose the route, while Ned came last, and we all voted it the best climb we had had this summer. At the cache, a pleasant surprise awaited us, for we found that "the cupboard was bare", the others having taken our loads in addition to their own, making packs of nearly 75 pounds apiece. Accordingly we ran down to the hut in forty minutes, to find a bountiful supper awaiting us. After four days spent in a bivouac, the comforts of the hut were most welcome, and it was with thankful hearts that we took our last look at Bennington's soaring spire, so well seen from the door of the hut, and turned in to our well-earned night's repose.[3]

MT. OUBLIETTE (ca. 10,200 ft.)

Second Ascent

After a day's rest, we were once more "rarin' to go" and as it was to be the last climb for some of the party, we determined to make it a good one. We were still Rampart "conscious", and we turned our eyes to the next in line, namely Oubliette, the first ascent of which by Strumia and Hainsworth, with Hans Fuhrer was described in the 1932 *Canadian Alpine Journal.*

Olive, Ned, Bob and I left the hut at 5.30 a.m. on August 12. Reaching Para pass at 8.10, we found the well known ledge across Paragon in good condition and kept along it until we were almost across the west face of Oubliette. At 12.10 we halted and put on sneakers, and started up the cliffs. The climbing was everywhere steep and we moved mostly one at a time. We only encountered one pitch which offered real difficulty—a smooth cliff face with few holds, ending on

3 Gibson, Woolf and Hind are an exceptionally strong and fast combination. At least twenty-five per cent should be added to their recorded times for average parties, on this and other climbs. C.G.W.

the left in a pronounced overhang, and on the right in a vertical pitch, where water was trickling down and the rocks were black with slime, a bad place for rubber soles.

Straight up the middle was the best course, and it entailed some careful balance climbing for me, as the holds were few and sloped downwards just enough to destroy that feeling of confidence that every rock climber likes to enjoy in a tight place. Above this was a steep gully ending in the col between the two summits. There was much loose rock everywhere and the whole pitch required very careful negotiation. I reached the col at 12.30 p.m. and turned to take in the slack of the rope as Ned came up. Just as he emerged from the gully a large rock, weighing some 150 pounds, suddenly keeled over. Ned promptly grabbed it in a vain endeavor to stop it falling down the gully, as the others were immediately below, he could not hold it, however, and with a warning shout he let it go. We were greatly relieved to hear a cheery hail from them, telling us that they were safe. How serious the consequences might have been, had they not been under cover, I realized with a shock as I pulled up the slack of the rope and found it hanging by one strand only, the other two having been neatly severed, as though cut by a razor.

Hanging from the cliff below the small north summit we saw the rope sling left by Dr. Strumia's party, from which we concluded that we had taken a different route up from the ledge, as they had come out considerably farther north. We then turned our attention to the main summit mass, and here again we took another line, and enjoyed a fascinating 60 feet of very steep and exposed face climbing, where the holds were splendid, and this landed us on the final summit ridge. This portion of the climb was most spectacular, as it was on the east face, high above Amethyst lake. It reminded us very much of the steep pitches on Uto.

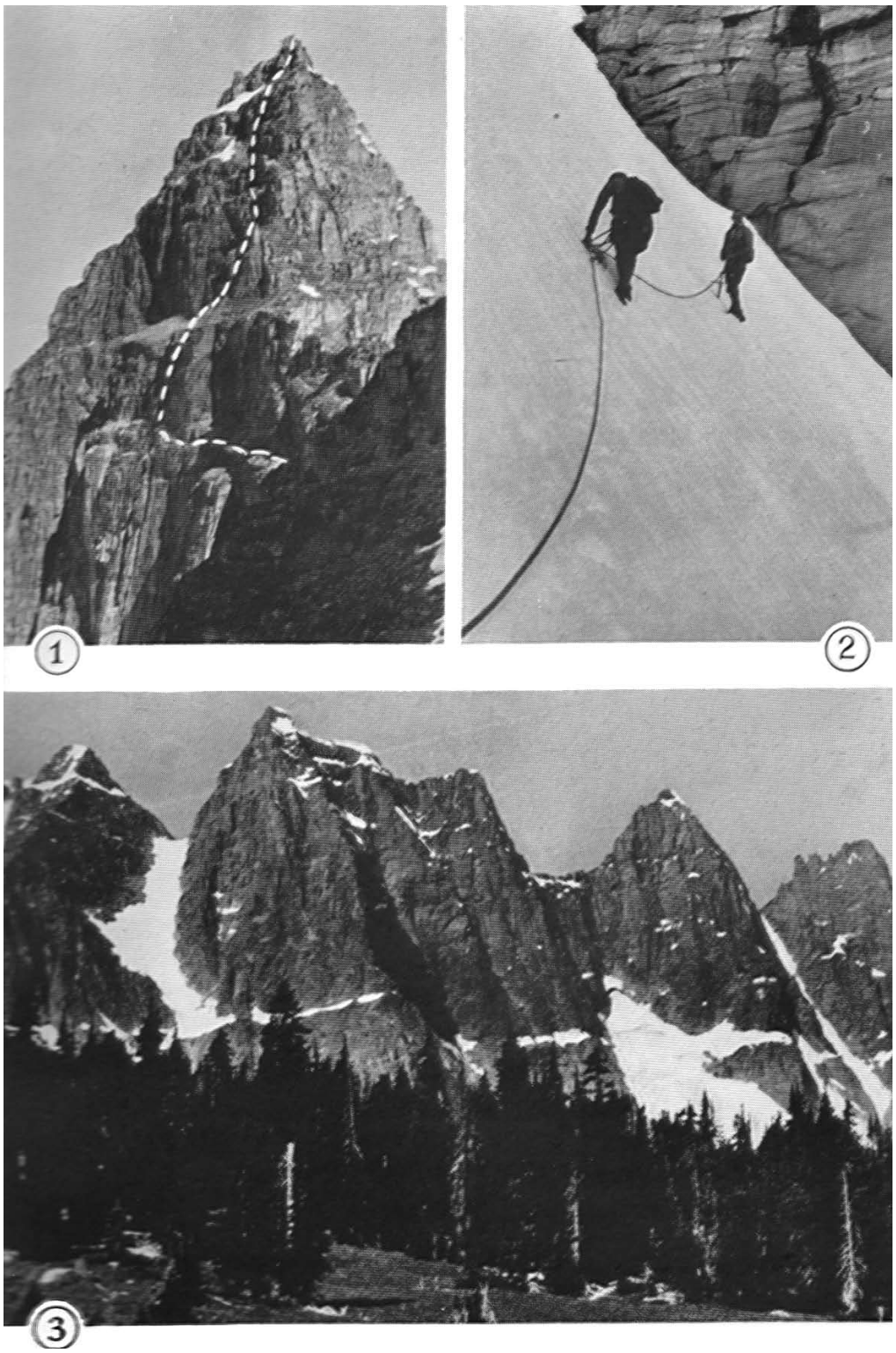
At 1.30 p.m. we were at the summit cairn, reading Dr. Strumia's record of the first ascent. We spent an enjoyable hour revelling in the magnificent views of the Fraser group, and studying the cliffs of Dungeon. We decided to return by the same route, and took just two and a half hours to climb down to the ledge. As a precaution, we used a piton to protect the last man down at the bad pitch. Oubliette must have almost a record number of pitons for a Rocky Mountain peak, as the other party left two or three beside the rope sling.

The rest of the descent was without incident, and we were back at the hut at 9.10 p.m., a total elapsed time of 14 hours 40 minutes. Thanks to being able to profit by the experience of the first party, and to excellent weather conditions, we made fast time, and Olive has every reason to be proud of being the first lady to scale Oubliette's grim walls.

DUNGEON PEAK (ca. 10,400 ft.)

First Ascent and Traverse

Successful as our trip had been, we still had two peaks on the programme, Dungeon and Geikie, on both of which Ned and I had made unsuccessful attempts in 1931. These we now determined to try again. With much regret we said good-bye to the Edmonton party, which left Ned, Bob and myself to carry on the good work. The weather was still perfect and we judged that our peaks should now be in first class shape. August 14, at 5.50 a.m., we left the hut and tramped up the Para glacier, whose steep snout was more slippery than usual, due to a hard frost the night before. We reached the summit of Para pass at 8.05 and left at 8.10 to traverse the ledge across Paragon and Oubliette. At the Dungeon-Oubliette col we struck a snag; more of the cliff seemed to have fallen away since 1931, and we were obliged to climb about 40 feet up the north ridge of Oubliette, and descend a similar distance, in order to reach the narrow and precipitous ledge forming the true col. Sacks and ice-axes had to be hauled up and lowered again on the rope. This passage took half an hour and we reached the col at 11.10 a.m.

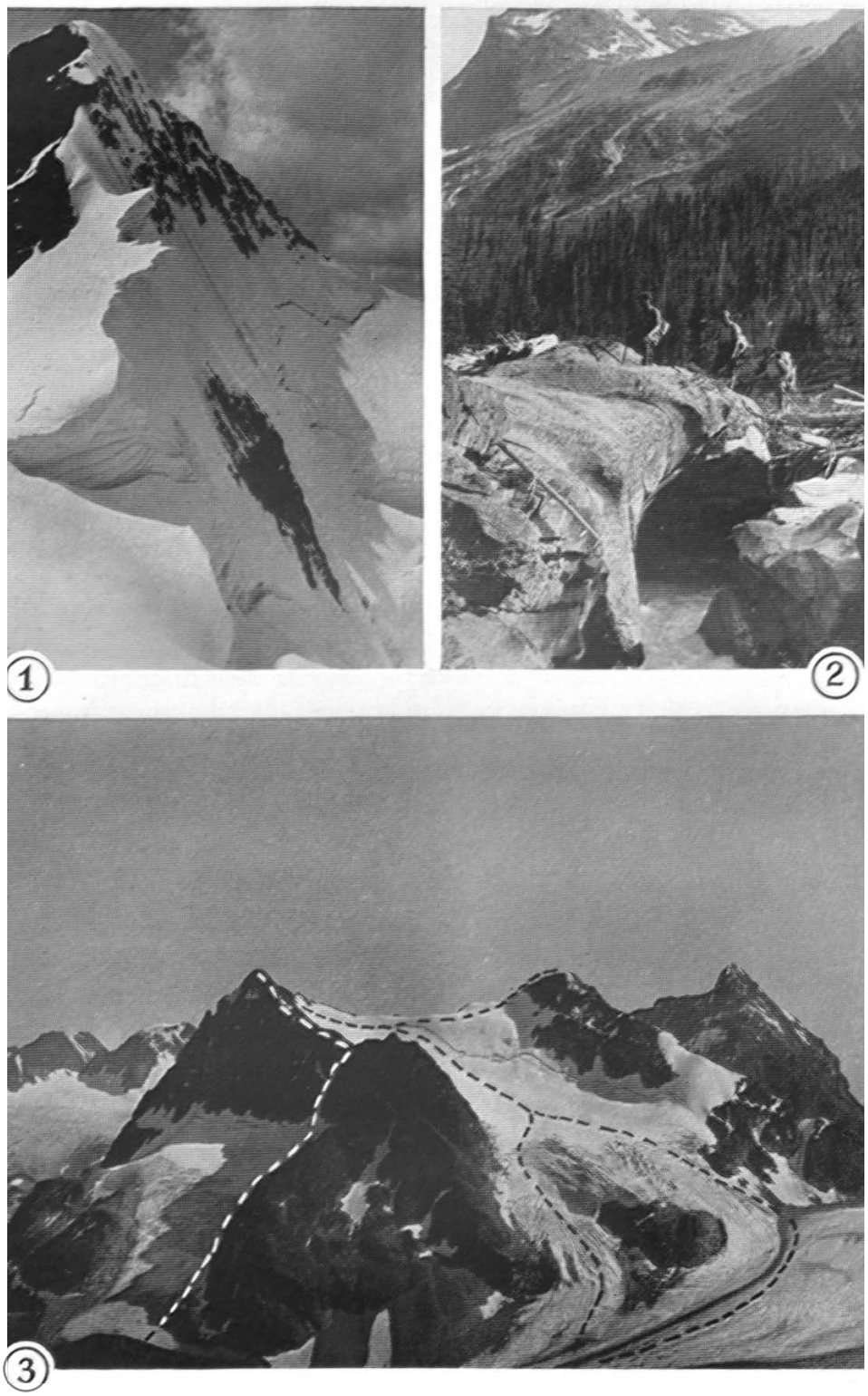


(1) Summit Mass Of Dungeon Pk. From The Col. *Photo E.R. Gibson*

(2) Rex Gibson And Billy Watson On Paragon Peak. *Photo R. Hind*

(3) The Southern Ramparts From Tonquin Valley. *Photo R. Hind*

Left to right, Paragon Pk., Oubliette Pk., Dungeon Pk., Mt. Redoubt.



(1) Summit Of McDonell Pk., From Summit Of Mt. Bennington. *Photo R. Hind*

(2) The Natural Bridge Over Simon Creek. *Photo C.G. Wates*

(3) View South From Summit Of Paragon Pk. *Photo E.L. Wood*

Left to right, Eremite Valley, Outpost Pk., Memorial Pk., Mt. Erebus, Fraser Glacier.

Proceeding along the col, we came to a halt before the same cliff that had stopped our attempt in 1931. It had to be turned, so before resigning myself to a descent of 100 feet, in order to reach a prominent ledge on the west face, a proceeding to which I have a conscientious objection, I decided to explore the possibilities of the east face. Donning sneakers and running out about 100 feet of rope, I got well out on this face, a very exposed cliff, and tried to reach two small chimneys that looked as if they would go. The way was barred by smooth and holdless slabs, and it was the sort of place where a slip meant disaster. Ned looked it over too, and we decided that it was too risky, so we returned to Bob, who had been taking a quiet snooze, for our reconnaissance had taken about 45 minutes.

There was no alternative but to climb down the west face to the second ledge below the col, and follow this along until we were about midway across the summit mass. On our way, the ledge petered out against the cliff-face, and we had to protect the leader by threading his rope through a piton, the only handhold being a crack into which one could thrust one's forearm. Once past this bad place we found a fairly easy lead up to the broad, debris-covered ledge at the foot of the summit mass, and well above the vertical cliff-band which had defeated us two years before. We rested here and had a meal, (1.40 to 2.00 p.m.), feeling tolerably sure that the peak was ours.

The remaining 500 feet was interesting but not difficult. We followed a diagonal chimney and a series of short, steep snow-slopes, and eventually stepped out on the summit ridge, a few feet from the highest point, which we reached at 3.20 p.m.—or nine and a half hours from the hut. Here a real surprise awaited us, for we discovered that Dungeon is the highest of the four peaks in the southern Ramparts, and must be fully 10,400 feet.

We only spent 20 minutes on the summit, long enough to build a cairn and take some photos, for we had decided to attempt a traverse and we had, at most, only five hours of daylight left, and an unexplored ridge below us. The first part was easy climbing until we reached the last big tower above the Dungeon-Redoubt col. This tower looked steep and uninviting, and we decided to turn it on the west face, by descending about 150 feet to a convenient ledge. This traverse brought us out at the head of a very steep ice and snow-filled gully, descending from the col for some 2000 feet. It seemed to be the only way down, but the upper portion was bare ice, and most repellent. I decided to keep out of the gully as long as possible, and started to climb down on the Dungeon side. The gully-wall, which faces north, consists of a mass of ledges, from 8 to 12 inches wide, separated by vertical bands about four feet high. All these ledges were moss-covered and treacherous. A lot of gardening was necessary. We descended about 300 feet before a vertical pitch forced us off into the gully, where I had to cut about a dozen steps in hard ice before reaching sufficient snow to give me a footing. Even here there was not enough snow to stop a slip, and the utmost caution had to be exercised.

Half-way down, the couloir turned at an obtuse angle to the left, and went on down another thousand feet to the scree. This we were devoutly thankful to reach at 8.10 p.m. Then came a wearisome boulder crawl over the slopes below Redoubt peak. We came out on the top of Lookout pass at 9.05 p.m. and looked down into the Tonquin valley. Yet another steep snow gully of 500 feet yawned below us in the gathering gloom, and I faced the task of kicking steps in the hard snow, down, down into the darkness. Fortunately, from the base of this gully there was only about 200 yards of boulders to cross, for as we reached the heathery slopes above Amethyst lake the last vestige of daylight faded from the sky, and the inevitable reaction that darkness brings, settled over us. Ned favored a bivouac, but Bob and I voted for making the Warden's cabin and a hot meal.

The majority carried the day. Helped by Ned's torch and guided by Cassiopeia's shining stars, we stumbled into the cabin at 11.40 p.m., to find both bunks occupied and someone sleeping

on the floor. Warden Curren, a kindly soul, did not seem to resent us spoiling his beauty sleep, and we soon had the stove going. A bowl of steaming soup, washed down by some strong tea of the variety known in the army as "Sergeant Major's Brew" soon relegated our fatigue to oblivion. What did we care that we had to sleep on the floor? Dungeon's proud battlements were surmounted by one of Bob's well-built cairns, and the last of the mighty Ramparts had been conquered.

MT. GEIKIE (10,854 ft.)

After spending Tuesday between the Cabin and the Memorial hut, we went round to Geikie meadows via Barbican pass on August 16, and on the 17th we had a most successful climb on Mt. Geikie by the Drinnan-Grassi route, following the exact line by which we had brought Dr. Bulyea down two years before. We found the small ledge where he and Helen Burns spent the night, marked by the ashes of the fire on which we had cooked them a hot meal, and we also found an Oxo and a brandy bottle— both empty, alas!

From the ledge to the lesser summit we took 1¾ hours. We rested there and had lunch (11.45 to 12.30), and were on the true summit at 1.00 p.m. We made fast time on the descent, which was without incident except for a slip by me as I came last down the couloir, due to a broken step. This slip I easily checked with my ice-axe, but not before I had cannoned into Bob and knocked him out of his steps; however, Ned held firm and we were all quickly on our feet again.

We were back on Geikie meadow at 6.20 p.m., making a total elapsed time of 12 hours 40 minutes for the climb, a record for this mountain, I believe. Next day we tramped twenty-six miles to Geikie station, having lunch at the Warden's cabin en route, whence we phoned in to Jasper to arrange for a car to meet us. It was a great relief to see Mrs. Hargreaves and the faithful Chev. come round the bend on the old railway grade, and we were soon on the way into Jasper and the comforts of civilization.

As we drove in, the rain came down in torrents, and the weather showed every sign of breaking. But the summits were ours and, as one of the party put it—"I don't care now if it snows ink!"

Now that the last of the Ramparts has been conquered it may not be out of place to call attention to the unique character of this range from the climber's standpoint. The distance from Barbican pass to Para pass is approximately seven miles, between which points there are eight major peaks. Roughly they may be graded as follows:-

Barbican—Easy but interesting.
Geikie—Long and fairly difficult.
Turret—Difficult.
Bastion—Fairly difficult.
Redoubt—Long and difficult.
Dungeon—Long and difficult.
Oubliette—Difficult.
Paragon—Fairly difficult.

I know of no compact and continuous range in the Canadian Rockies which can show such an array of difficult peaks, and it must be remembered that in every case the easiest route has been taken. Indeed, on most of the Rampart peaks, there seems to be no possible alternative.—C.G.W.

THE FIRST ASCENT OF NEEDLE PEAK

By W. H. Cleveland

Edmonton climbers have looked longingly on the beetling cliffs of Needle Peak for several years. It must have been too much for them, for their enthusiasm resulted directly in the formation of a party at the Chrome lake camp of the Alpine Club of Canada for an assault on the mountain. That the expedition should be under the guidance of one of Edmonton's most competent climbers — Captain Rex Gibson — was a stroke of fortune.

If one asked you where can Needle Peak be? you might answer — three miles east of the Alberta-British Columbia interprovincial boundary and about 25 miles (airline) southwest of Jasper; or you might say that Needle Peak lifted its finger-like rock tower up from the southern bank of the verdant, coniferous flats of the Simon creek valley, in such a fashion, that, if you were to stand upon its tiny summit and gaze west, the lovely peaks of Beacon, Whitecrow, and Blackrock mountains would cast their images on your mind's eye.

One cannot dispute that the impression one gathers of Needle Peak when he studies it from such adjacent summits as Alcove, Angle, and Simon Peak is an imposing one. This is due to the formation of the peak as a sheer rock finger projecting upward from a narrow base into a small summit. Study with high-power glasses reveals two possible routes, either an attack on the north-east ridge which appears more broken up than any other portion of the peak and the least steep, or one by the south ridge which reaches a point within 500 feet of the summit by an easy ascent, and from that point on is hidden from view from these observation points, and the feasibility of which thus lies in doubt.

A party of five departed from the main camp on Eremite creek (altitude circa 6100) after lunch on July 27 — in good spirits despite the depressing influence of an exceedingly warm and humid day, and the burden of the back-pack. The route led up Eremite creek and glacier to the pass between Angle and Alcove Peaks (8400 feet), and down into the Simon creek valley (5100 feet). This rugged and rough valley floor, with windfall and bush enough to tax the spirit of the most intrepid, offered considerable obstacle to the weary party which crossed Simon creek by a log thrown across it as the stream dashed impetuously through a narrow gorge. The course was downstream for about two miles (4900 feet). At the point where the stream joins Simon creek whose source is the drainage waters of Whitecrow, Needle, and Beacon Mts. and Beacon lake, the valley floor was left, and 'this stream was ascended about a mile, where it was forded and a bivouac (5200 feet) at the northwest corner of the base of Needle Peak made just as it was getting dark.

But a few hours were spent endeavoring to rest out in the daylight brilliance of that moonlight night before Gibson gave the call to breakfast about four in the morning of July 28. A speedy breakfast was packed away and the long arduous ascent up the west ridge made to the base of the snow patch lying at the foot of the northwest corner of the final rock tower (8200 feet). As altitude was being overcome, studies with glasses from nearby disclosed the following facts: the west wall of Needle Peak had a decided overhang in its projection upward; the promising south ridge terminated in an impasse of vertical rock walls with no hope of traverse on the west face, and if the contour map was accurate, even less so on the east face; the north face while broken up in spots offered no promise. Thus we were forced to make the attempt on the northeast ridge—a route that offered encouragement when studied from distant peaks as the ridge appeared to be broken

and its angle of steepness less severe. Ropes were donned at the base of the snowfield underlying the summit tower at the northwest corner. In accordance with the wishes of the leader of the expedition two ropes were arranged with Roger Neave leader of the first, Alex Corry middleman, and Rex Gibson end man; the writer, leader of the second, with Dr. Beattie end man. The first rope was leading the second by perhaps a hundred yards up the slope to the rock ridge at the northeast corner, when, as though it were symbolism of hatred and scorn at our intrusion on its privacy, an avalanche of rock came hurtling off the north wall of Needle from hundreds of feet above. The awesome noise that objects make flying through space with the speed of the wind, caused us to glance hastily upward, only to see the rocks coming directly toward the first rope. Quite fortunately and with artful dodging the rocks fell on all sides of the rope. This event caused both parties to accelerate their pace until the comparative safety of the northeast ridge was attained some minutes later (8500 feet).

At last we were at the point where we would begin the actual climb, and to reach which so much energy had been expended. Roger Neave with the ease and assurance that experience alone effects, started off not too rapidly due to the rotten nature of the rock and the uncertainty of the holds till a halt on a ledge about 100 feet up was made (8600 feet). A cache consisting of nailed boots, extra clothing, and all but two rucksacks lightened the party considerably, especially since the weather was still clear, hot and humid.

With the lightness of the rubber-soled shoes, and the lack of encumbrance with ice-axes, progress upwards was much more efficient. The route, which could not be studied far ahead due to the steepness, was picked as we went along. In general the northeast ridge was followed until advance became impossible, when traverses left (on the east face) were made.

About 250 feet above our cache the first severe bit of climbing was encountered. Here a very slight overhang of about three feet was met with unsatisfactory holds on the treacherous rock, and an extremely awkward take off. It was a dangerous spot, but successfully overcome by Roger Neave leading rope one, even if it did take considerable time, and by Dr. Beattie who was at this time leading the second rope. Without the assurance of a rope ahead the author will never climb such spots as this unless optimum rock conditions are present such as one sees in the Selkirks for example. Thus to Dr. Beattie must go the credit of getting the second rope on the Needle. What's the fun of climbing for sport, for the gorgeous beauty of the surroundings, for the nectar-sweet air, when life is in jeopardy. By the time Dr. Beattie with cajoles and entreaties had nursed his end man up this difficult pitch, Roger and his rope were out of sight and hearing. Beattie relinquished his lead at this time. Though he was never asked why, there is some reason to suspect that he did not want the responsibility of another pitch such as that, at least right away.

About fifty feet above this an impasse presented itself and a traverse left, into a sort of rotten rock couloir, led upward to a ridge on the right which was climbed until it became impossible to gain more altitude on this. A delicate bit of work was then in store for, to gain the northeast ridge again, which seemed necessary at this point, the problem of crossing an ice couloir about five feet wide and quite steep had to be solved. The anchorage was perfect and after climbing down about fifteen feet we made the crossing on a nice footing on a stone in the middle of it. The rock on the other side of the couloir presented no particular difficulties, and nailed shoes and axes were not greatly missed. A short distance following this the final summit ridge was gained by two steep pitches with adequate holds. It was upon arriving on this ridge that Roger Neave dislodged a large rock which set in motion a terrific avalanche of rock down the west face of the mountain. It should be stated that so rotten and decayed was the rock of this ridge that it was almost impossible to

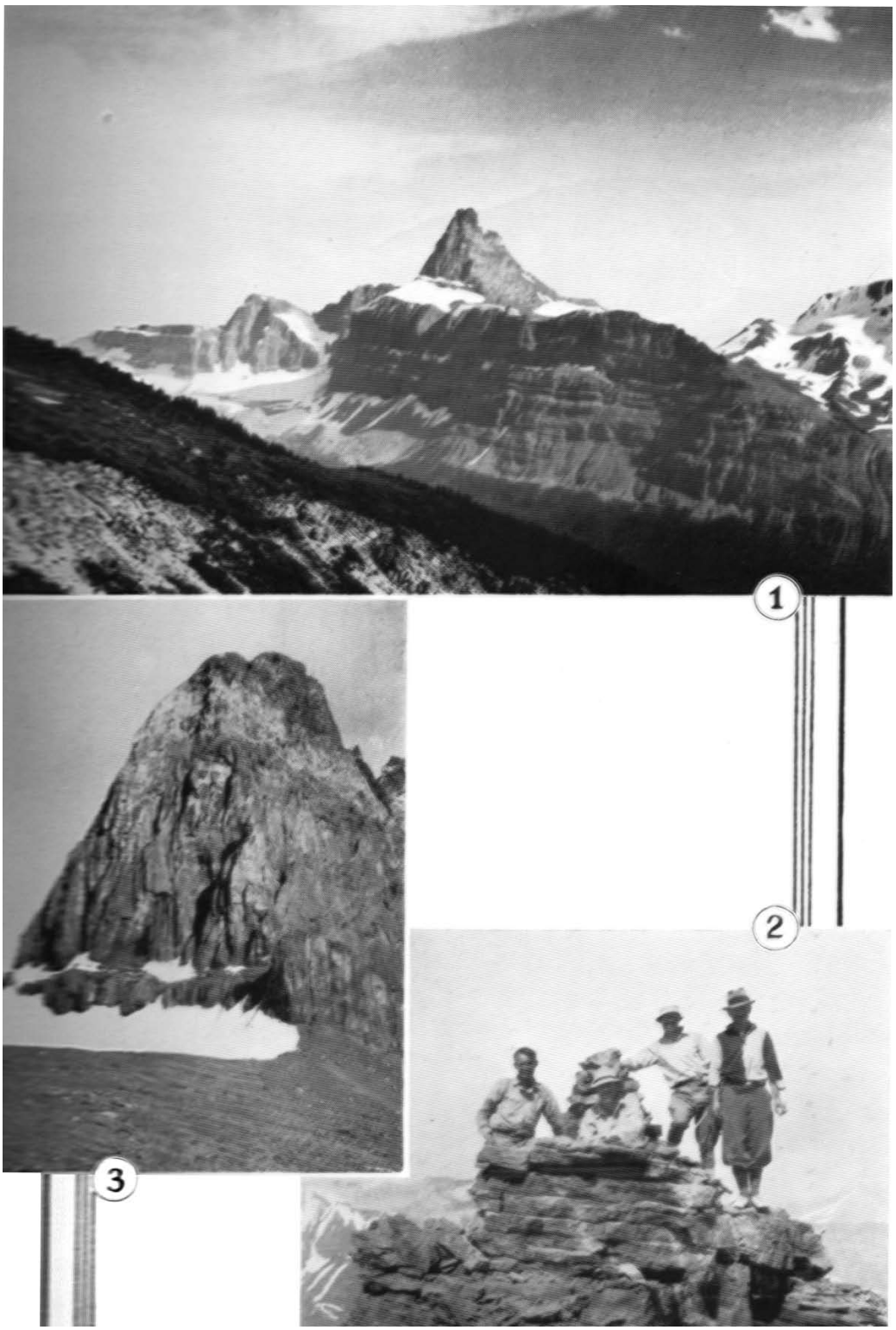
move without wrecking the mountain and freeing rocks that a strong wind might also blow off. After mounting a pinnacle on this ridge which was about thirty feet high, and after dropping down the south side of it, the summit (alt. 9668) was gained by the first rope some fifteen minutes before the second arrived. The time on the rock for the approximately 1168-foot climb was about three and one-half hours.

After building a suitable cairn, eating, resting, and looking about especially at the great Simon peak group and the Columbia Icefield group to the south, the descent was begun with great caution. Beattie started off with the writer last on rope one, and Gibson started the second rope of three with Neave coming down last. The descent was exactly as the ascent until about 150 feet above the very difficult pitch of the upstretch. Here it was felt that either there must be a rope off, or a new route found. The latter course was adopted. Neave directed his rope down a sort of ridge till he could not go any further due to a perpendicular drop off. Cleveland a bit to his left (north) directed his rope down a wet couloir where rocks might be expected to serenade one's presence. One cannot be guilty of keeping one's self in an exposed position too long so a traverse right was begun in order to gain the comparative safety of Neave's position, just as a piece of ice from high above came falling down and struck Neave a glancing blow in the shoulder. This and numerous rock avalanches which we hardly noticed due to our extreme concentration serve to illustrate the natural hazards that an ascent of this peak entails. Having gained Neave's ridge without accident, though a couple of miniature rock falls came down, a corner was turned to the right (south) at the perpendicular drop-off of Neave's ridge and the most difficult pitch of the down stretch began.

Starting from a narrow ledge one had to swing off with the body facing in towards the rock. Next the left hand directed itself into a three finger crack which was the sole support except the slightly downward facing ledge from which the take off began where the right hand took the weight until the feet could be placed some seven feet straight down upon a ridge which itself slanted outwards and downwards at about a forty degree angle to the horizontal. Friction with the toes of the tennis shoes became an absolute necessity, for while the left hand could balance the body with its three fingers it could not support it. Next the left hand had to be released while the feet held, and they had to be placed on the ridge where the feet were resting—a feat requiring quite a measure of good balance. The way down from here was uncomplicated steep rock work in a direction back towards the northeast ridge of the Needle. In accomplishing this pitch it was convenient to turn the party into a rope of five, and though we strongly urged Roger Neave to rope off as last man he felt the pitch would go satisfactorily, but we all breathed more freely when he was safely down. Our cache was soon reached after swinging over to the northeast ridge, and changing back to nailed boots and collecting our baggage, we were soon off the mountain. (Summit to the base of the rock cliff summit —about four hours).

Our bivouac was reached at about eight o'clock in the evening—after a fifteen-hour day approximately. Though somewhat tired the party felt as though the energy they had expended getting there was to some extent rewarded.

With an early start after breakfast on Sunday, July 29, we made our way down caribou trails to the flats of Simon creek. An icy ford here was the cause of painful expressions as well as merriment. Ascending to the pass to the east of Angle peak (8200 feet) we dropped down with a series of snow glissades into the valley which lies just east of Eremite pass (circa 7400), climbed to the summit of the pass (7800 feet) dropped down on the Eremite glacier, and after taking the familiar caribou trail arrived in camp just forty-eight hours after our departure—early Sunday afternoon.



(1) Needle Peak. *Photo Dr. C. Beattie*
From The First Resting Place After Crossing Angle-Alcove Pass

(2) Party On Summit; R. Neave, Dr. Beattie, W.H. Cleveland, J.A. Corry. *Photo E.R. Gibson*

(3) Summit Mass. About 1200 Feet From The Snow Slope To Summit. *Photo E.R. Gibson*

Because the peak will always be dangerous to climb with its unavoidable avalanche hazard, its several extremely difficult rock pitches, its discouragingly rotten rock formation, and because it is so inaccessible, and because such care in technique is essential to protect each other on every move of the 1200 foot ascent and descent, it would not be amiss for the Edmonton section to make a trip there for the sole purpose of tacking on its base such a sign of warning for those who trespass on its environs as—cave canem.

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CLIMBS IN THE ROCKIES AND SELKIRKS DURING THE SUMMER OF 1933

By Katie Gardiner

After nearly two years absence, it was delightful to come back to Canada in the spring of 1933, and see the dear familiar mountains once more as the train sped on past Glacier, Field and Lake Louise to Banff. Arriving at the Alpine Club House was like coming home, and I felt myself lucky to have such comfortable headquarters for the summer.

I had been fortunate to get Walter Feuz again as guide. He joined me for some climbing on June 27 and after a few days scrambling, we set out for the Vermilion range, the ascent of Mt. Foster being our principal objective.

Walter very kindly lent me his car to drive over to Marble canyon and accompanied by Ken Jones, a boy from Golden who was coming with us as cook, we set out on the morning of July 3, taking with us two silk tents and some stores. We had hoped to pitch our climbing camp near Floe lake, but on reaching Marble canyon found to our dismay that the bridge over Vermilion river had been washed out. However the game warden informed us that there was another bridge higher up the stream leading to Numa creek valley through which we could reach a pass just above the lake.

The Vermilion mountains lie parallel to the Banff Windermere road, behind a low line of undulating hills, which dips down into Numa valley at the foot of this magnificent rock range with its three outstanding peaks of over 10,000 ft. Mt. Foster (10,511 ft.) is named for Col. Foster, the well-known climber and explorer. It lies to the south and with the other more northerly peak (10,240 ft.) had as yet not been climbed; the centre peak (10,060 ft.) had already been ascended by a survey party.

We spent the night at Marble canyon auto camp and the following morning, leaving Walter's car in a sheltered spot down the woodland track to the river, we crossed the Numa creek bridge with the water swirling below. The old trail which the game-warden had advised us to take on the left side of the creek scarcely existed, except for the blazes, and as we were heavily laden, we found it strenuous going. We had to ford the stream at one place and cross it in others on fallen logs and a very frail snow-bridge and then from time to time were forced to make our way through thick underscrub. The woods were full of aromatic flowering bushes and lovely flowers were blooming everywhere, one variety of white orchis having a delightful perfume like that of lily of the valley. About four o'clock we came to a glade which was blue with forget-me-nots and larkspur. There we camped for the night, getting a good view of the centre peak up the valley.

The following morning the ground was white with frost although the altitude was only 4500 ft. The day was perfect, however, and after breaking camp we went on to the fork of the river, enjoying en route lovely views of Mt. Foster. At this point we reached a good trail which went winding through the valley between the trees to the summit of Wolverine pass under Mt. Foster. Here a view of Floe lake was obtained with all its ice and snow and a fine cliff-like mountain in the background. As the day was sultry and as steep banks of snow still covered the trail in places, our uphill grind wearied us and it was a relief to reach the pass.

The range stretched away before us, a sheer wall of rock with the three peaks towering rather formidably above it. After looking round, Walter decided that it would not be advisable to attempt Mt. Foster from the lake; but that it would be better to camp at timberline at about 7800 ft.

below the pass on the south side of Numa valley where some larches were just coming into leaf on knolls which formed little islands in the surrounding snow.

As it was nine o'clock by the time we had pitched camp, we decided to make a late start next day on a reconnaissance trip to the centre peak in order to spy out a good route for Mt. Foster. Accompanied by Ken, we set out at 8.45 and descending rippled banks of snow below our camp climbed over snow and bare patches up to a saddle between Mt. Foster and the centre peak, thus gaining the main ridge of the range. By traversing on the south side on shelving rocks we reached the southeast ridge. Here we lunched and enjoyed the magnificent view. The air was crystal-clear and the mountains looked unspeakably beautiful glittering in the sunlight. From this point we had some good climbing. On the summit Walter got out his field-glasses and had soon worked out a suitable route of ascent for our expedition on the morrow. The top of the mountain was covered with snow and as this continued down on the southeast side we descended through it, noting that it would have made a good route of ascent. Then we climbed to our pass again, over ledges and rock pitches, getting quite near to a fine mountain goat as we crossed over towards Numa valley and were soon sliding down over the snow towards our camp.

After three such strenuous days we rested .on the 7th until the shadows were beginning to lengthen and only set out on our expedition at 5 o'clock. We first climbed to the saddle again and, dropping down into a large gully on the Kootenay side of the range, we descended over ledges on our right and then part way down crossed over to the far side to another snow-filled gully running up in the Mt. Foster direction. Here swarms of mosquitos beset us. We made a fire among the trees at timberline and as the night grew colder they all disappeared. It hardly became dark throughout the night but was so chilly that we were glad of the warmth and cheerful blaze by which to sit and doze.

The morning of July 8 soon came and we were off again by 4 a.m., up the gully to a plateau and a half-frozen snow-surrounded lake. Ascending a steep hill on the far side of this we came on a fine view of our mountain, but found it necessary to descend to the snow on the other side of the hill to gain the main face of the peak up which Walter had planned our route of ascent. We soon scrambled down and climbing up by a waterfall, followed a central rock rib which ran up to the main ridge of Mt. Foster, to within fifteen minutes of the top, over shelving ledges and rock pitches with intervals of very rotten snow. The ridge was narrow but we went along it without much difficulty and were soon, to our great joy, on the much coveted summit, Ken's first un-climbed peak.

From the snow-covered top the view was superb. One could see most of the great peaks of the Rockies and Selkirks, range after range fading away into the blue distance. After enjoying the beauty of it all for some time, we descended by the same route, with the utmost caution because of the precarious state of the snow. We tried to avoid some height by skirting round the steep hill which separated us from the lake, but in that way came in for some rather difficult climbing. However, we finally got to the plateau and down the gully again to our bivouac and having rested there, made our way back to camp over the pass. Unfortunately a heavy shower en route made the rock somewhat slippery.

We had a fine day for our return to Marble canyon. As the snow bridge had gone, we had to cross the much swollen river on a log and in another place wade knee deep into the swift current. Walter found a much better trail however below the forks on the opposite side of the river. From the bridge we motored back to Marble canyon where we enjoyed the comfort of the Bungalow camp after a day's strenuous back-packing.

The weather was too unsettled for us to climb again for the time being, so the following morning Walter drove us through Radium Hot Springs and the beautiful Columbia valley, with its

woods, rugged peaks and picturesque farms, to Golden. Mrs. Feuz entertained me that evening with some very good homemade stout at their pretty house in the Swiss village. On July 11 Walter and I climbed Storm mountain, bivouacking by a fire at timberline en route. From the summit we were able to spy out a route of ascent for the other unclimbed peak in the Vermilion range.

I then spent a very pleasant fortnight in the usual friendly atmosphere of the Club House and Annual Camp at Paradise valley and was fortunate enough to climb Pinnacle from there and several other peaks. Also I had a delightful hiking trip over the five passes to O'Hara before setting off once more with Walter and Ken for another trip to Numa valley.

On July 29 we camped in the woods near the bridge. There was a great deal of fresh snow on the mountains and it rained during the night but cleared on the morning of the 30th, when with the help of two friendly roadmen we carried our belongings up to the forks. We pitched camp there near the river, which had fallen considerably.

We set off about 9 o'clock on Monday, July 31, hoping to ascend the other unclimbed peak in the Vermilion range. After crossing the right fork of the river and following the Wolverine pass trail for a short distance, we struck straight up the very steep hillside through the big timber below the mountain. It was very hot and the scrub and fallen logs made going slow and difficult. When at last we got up to timberline it was about 12.30 and too late to consider going further that day. Before us lay a lovely lake surrounded by open flowery slopes. A big hill beyond it hid the pass we wished to cross to make our ascent. We bivouacked just below the lake, among trees and large rocks and made a fire on a ledge in front of one of these which was slightly overhanging, with small trees growing on the top. This gave us some badly needed shelter during the night, when we had a thunderstorm.

Walter and Ken had made a reconnaissance trip the previous evening to spy out a route and as the morning of August 1 was again fine, we were able to set out to attempt our peak. We went past the lake, up over the hill and found that the pass on the south side of the mountain was quite easy to ascend and that it sloped gently down on the far side. The ridge of the peak towered above us on the right with quite impossible cliffs. We worked round on the western side, first on grass and then over ledges and scree until we came to- a snow face which we ascended for some distance. Then, as the snow was bad, we climbed up over steep rock ledges to the south ridge which we followed, arriving at the summit at noon. The rising and falling mist had rather hindered our ascent, but it lifted while we were on the summit and we were able to get excellent views of Tumbling glacier and the nearby peaks.

It was too cold to enjoy this for long and we soon moved on towards the lower snow top of the mountain. We dropped down along a snow and rock ridge to a saddle from which the second summit seemed quite a separate peak. As it was bitterly cold on the top of this peak, we soon started our descent, coming down from the col mainly in rotten, sliding snow on the top of ice, through which Walter had cut large steps. In one place we were on rock for a short time and then descended through the thick new snow of the previous day which had avalanched from above. When we came to a place a little below where we wished to recross the ridge, we struck over to our left along the ledges and were soon on our way up the slope to the pass again. From there it did not take us long to return to our bivouac rock, where Ken boiled the billy and, after a refreshing cup of tea, we went on down the hillside and through the forest, making camp by 7 o'clock.

On the morning of August 2, we were starting out about 10 o'clock to photograph some peaks from the heights on the Wolverine pass side of Numa valley, when much to our astonishment four college boys suddenly appeared down the trail on their way to the Banff Windermere road

from O'Hara. They had intended to go on through Numa valley and strike the road over the Floe lake bridge. Fortunately we were able to tell them to follow the creek leading to the other bridge instead. After they had left we set out once more on the trail by which they had come and spent a most enjoyable day going through beautiful country. We obtained wonderful views of Mt. Foster and the whole range from the hillside opposite the peak we had just ascended, and were able to photograph the remarkable three tiers of Tumbling glacier on its steep side.

The sky was overcast the following morning and we just managed to take down our tents before the rain fell.

Earlier in the summer Lillian Gest had very kindly asked Walter and me to join Christian Hasler and herself on a climbing trip to the Ice river valley and by the appointed day, August 8, the weather had fortunately cleared again. Jim Boyce came with us as packer and cook and with him Bill Harrison to look after the fourteen horses. We met at Leanchoil that evening, where Jim, who had already made camp some miles out by the Kicking Horse river, was waiting for us with his outfit.

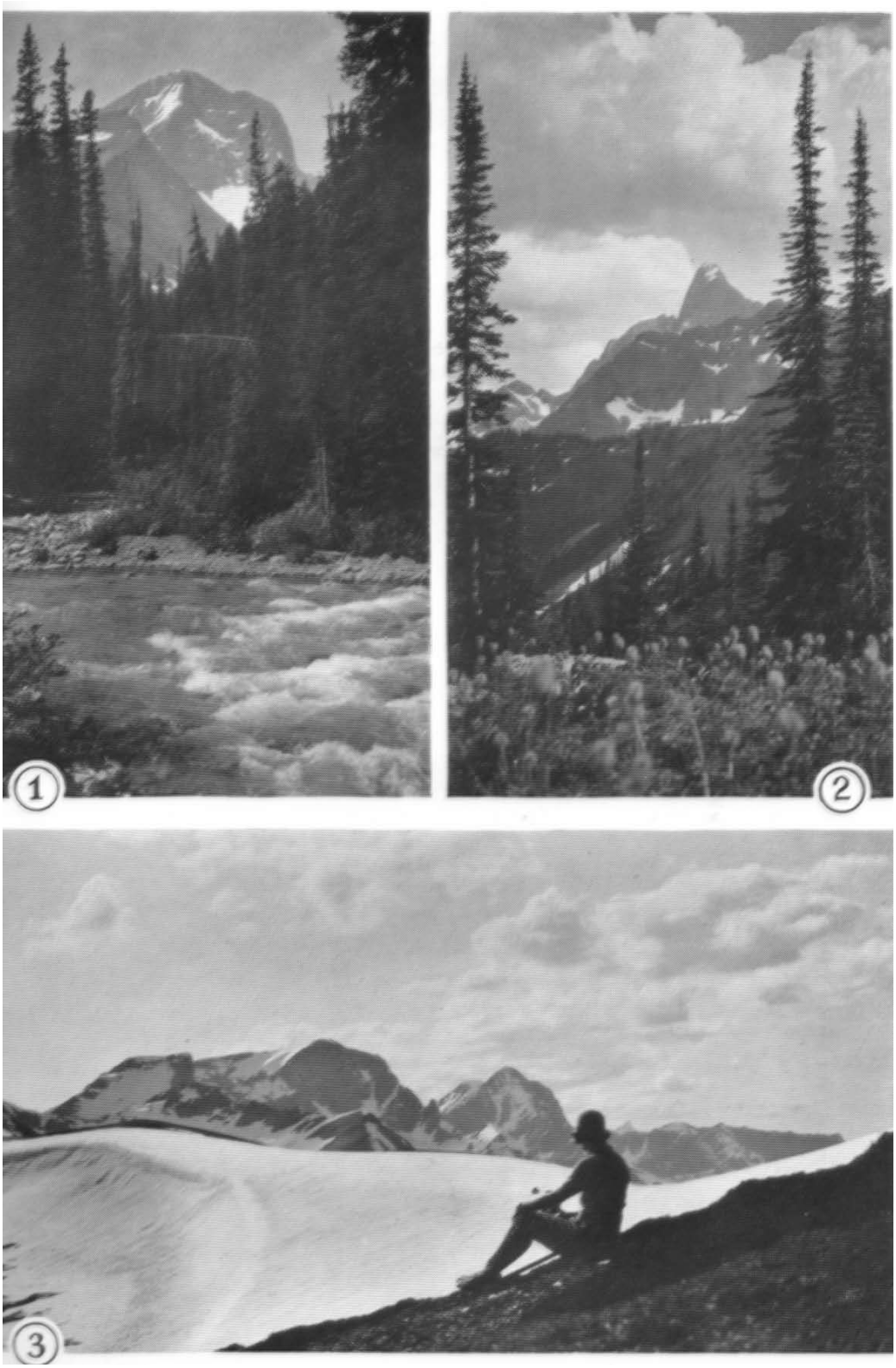
On the evening of the 8th, we had motored to our camping place partly along a woodland track and on the following morning rode on along this for some miles and then over about three miles of trail before coming to the junction of the Kootenay trail. Farther on we passed an old mining camp and a little later pitched our tents at the foot of Zinc gulch in the Ice river valley itself. When wandering in the surrounding woods after supper, Lillian and I surprised a magnificent moose feeding nearby. As we approached, he dashed right through the camp giving the others quite a fright.

On August 10 we rode on along the trail which became rougher and had to be cleared a little. Soon we reached the river flats and finally a beautiful wide meadow at the foot of the majestical North Tower of the Goodsirs. Our camp consisted of two tepees and a supply tent. Jim did the cooking himself and gave us excellent meals.

The South Tower of the Goodsirs (11,686 ft.) was our first objective. On August 11 we started off at 3.30 a.m. Going straight up through the forest undergrowth to grassy and shingle slopes on the face of the mountain and keeping to our left, we mounted over steep stone-covered ledges with a downward slope, until we came to a rib of rock leading up to the northwest ridge. This rib was narrow and of rotten rock slightly corniced towards the top. Here and there we traversed over to the face of the mountain to avoid a perpendicular bluff and also to gain time. In one place we had to rope off down a difficult pitch, after which the final summit rose steeply with an overhanging edge and a sheer drop below it. We gained the top in 9¾ hours and there found a cairn and records of previous ascents; Lillian and I were fortunate enough to be the first women to stand on the summit.

Dr. Hickson made the traverse of this peak with Edward Feuz up the southwest ridge in the opposite direction to that by which we had come. We in our turn descended in that direction, over a narrow, shaky, rock ridge, traversing to the eastern side of this on to a face of shelving stone-covered ledges and finally, over steep scree and grass slopes, came down by the usual route through the forest in Zinc gulch to the valley again. Here we followed an old mining trail, its overgrown condition impeding our progress somewhat. The horses were awaiting us beside the river and we were back in camp by 9 o'clock.

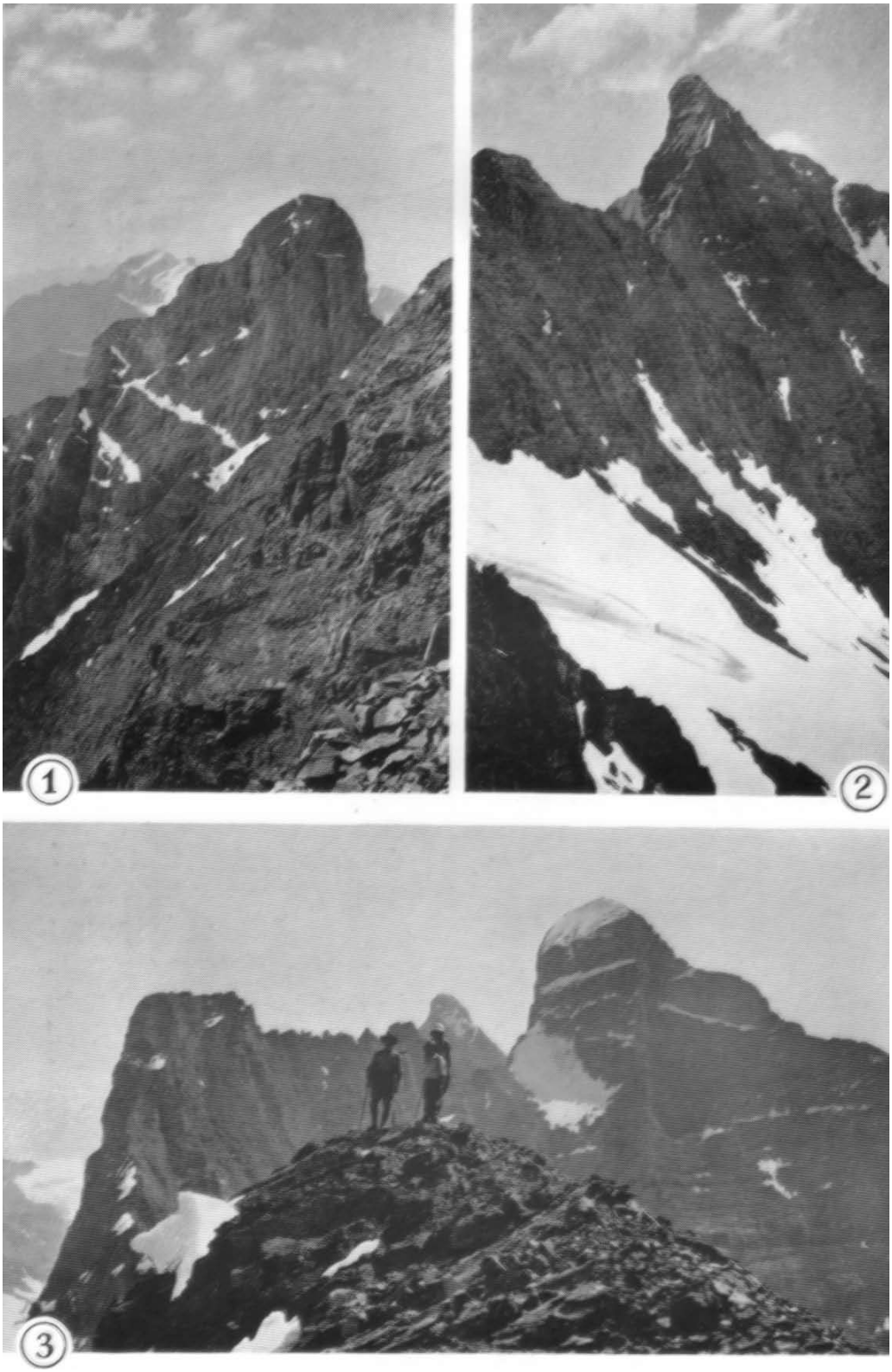
We rested on the 12th, bathing and watching for moose, elk, deer and goats which abound in the district. At the end of the valley beyond a high cliff and extensive glacier rises a fine rock peak called Mt. Hanbury (10,267 ft.) which to our joy we found was as yet un-climbed.



(1) Peak 10,240 From Forks Of Numa Creek. *Photo Walter Feuz*

(2) Foster Peak. *Photo Walter Feuz*

(3) Peaks 10,600 And 10,240 From Floe Lake Summit. *Photo Walter Feuz*



(1) Mt. Goodsir, North Tower. South Face (Route Of Ascent). *Photo Walter Feuz*

(2) Mt. Goodsir, South Tower From Northwest (Route Of Ascent). *Photo Walter Feuz*

(3) Mt. Goodsir, South And North Tower. Teepee Peak In Foreground. *Photo Walter Feuz*

On August 13 at 5.10 a.m. we set out on horseback for the head of the valley. Dismounting at the end of the track, we made our way through the scrub and trees up to the open rock face below the Vaux glacier. This is very steep and spectacular, with beautiful waterfalls which form the beginning of the Ice river. The glacier stretching away towards Mt. Vaux was mainly snow-covered with small crevasses showing here and there. Crossing this white expanse, we worked our way up the south face of the mountain over steep shelves with one or two small rock pitches, gaining the summit at 1.15, in 2 1/4 hours. It was Lillian's first unclimbed peak and we built a large cairn on the top to commemorate the event.

The view was indistinct on account of forest fires. We descended by an easy route along the north ridge to the glacier, which we recrossed, and then went on down the cliff-like sides of the waterfalls to the horses awaiting us in the valley below. We were back in camp by 7.15.

After another lazy day we set out on the morning of August 15 at 5.15 to climb Goodsir North Peak (11,565 ft.). Avoiding the bush we ascended through one of the steep meadows which run up from the river towards the mountain, and were soon on the grass and scree slopes and up on the southwest ridge which we followed to the height of over 10,000 feet. Here we found the relics of an earlier party in the form of a sardine tin and meat can. We then traversed over a scree band to the south face reaching a dangerous ice-blocked couloir up which Walter cut steps. From there we zigzagged from one to the other by steep rock pitches and reached the summit in 9 hours at 1.30.

On the descent we followed practically the same route, Walter being obliged to cut even larger steps in the ice of the couloir as it was in a most dangerous condition. Coming off the ridge we descended by way of a meadow rather lower down the valley where the going was somewhat better and then got into the main trail and were in camp by 8 o'clock.

Two days later we left the camp at 5.30 a.m. to attempt the ascent of an unclimbed, unnamed peak on the northern side of the Goodsirs. This mountain was tent-shaped and although a good climb, apparently presented no great difficulties. The guides laughingly suggested that Lillian and I should change places with them, leading alternately. It was decided that, if we succeeded in taking them to the top, the mountain should be called Tepee Peak. We rode as far as a creek coming down from a little glacier on the northwest side of the Goodsir North Tower and dismounted at 6.10. Then after ascending the course of the stream through some scrub by way of steep slopes and ledges, over which waterfalls were coming, we came out onto the glacier up which we made our way to a gully. This gully led in a southerly direction towards a ridge which we reached after climbing over some steep ledges. The easy, gently ascending ridge soon led us to the double summit which we reached by 12.15 in 6 hours.

After spending about two hours on top we descended by the same route, keeping as much as possible on the scree and soft snow and avoiding the glacier which was very slippery, by descending over the moraine. The horses met us at 5.30 and we were back in camp by six o'clock.

We rested on the 19th and that evening we had a thunderstorm, the weather not clearing again until the 21st.

We then attempted the ascent of Mt. Chancellor; unfortunately when we reached the ridge a series of gendarmes presented such difficult climbing that we saw we should be benighted on the mountain if we pushed on to the summit. After climbing a lower peak on the same range, we reluctantly retraced our steps to Ice river valley.

That was the last day of our enjoyable stay in that lovely spot and the following morning we rode back to our first camping place near the Kicking Horse river. Our party then broke up, Lillian going to Lake Louise and I, after a short interlude in Golden, to camp near the old hotel

site at Glacier with Walter and Ken. Mr. Binnie joined us for a few days and we were fortunate enough to get the traverse of Mt. Sir Donald and some other good climbing before the weather again broke.

For me at any rate that put an end to the season's climbing and a week later, after visiting Banff once more, I was on my way to Vancouver and another summer's climbing in New Zealand, carrying with me many pleasant memories of two very happy months in those beautiful surroundings and of the unfailing kindness and hospitality of the Canadian mountain people.

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THE FIRST ASCENT OF MOLAR TOWER

By Roger Neave

Arriving at Lake Louise at the end of June, 1933, and having two weeks on our hands before attending the A.C.C. Camp at Paradise valley, three of us, Alec McCoubrey Jr., Grahame Cairns and myself, decided to turn our attention to Molar Tower, one of the few un-conquered rock climbs remaining in this district.[1] With fairly heavy packs, we left Lake Louise station late in the afternoon of July 2, travelled by easy stages up the Pipestone, and camped below the Tower on the evening of July 5.

That afternoon we looked at the peak through glasses, but received little encouragement from our inspection of the south face and southeast ridge, the latter a wild looking arête guarded with a series of gendarmes. Even in our then optimistic state of mind it drew forth the remark, "We won't try that way, except as a last resort," little thinking that this was going to be the eventual approach.

The morning of July 5 was fine and frosty and leaving camp at seven a.m. we had pleasant going up flower-covered slopes to the bench at timberline. Then a diagonal traverse up bad scree brought us to the lower band of cliffs just on the east side of the gully that separates the Tower from Molar mountain. After a short halt here for second breakfast, we roped up (9.15) and had sixty or seventy feet of excellent rockwork to more scree slopes above. At a quarter past ten we were at the col and gazing down the sheer wall on the far side. A few minutes brought us to the base of the Tower and face to face with the most impossible cliffs, rising vertically or overhanging, for hundreds of feet above us.

Traversing along the base of these cliffs and passing a shallow couloir that seemed to offer slight possibilities, we reached the rib at the southwest corner of the tower. From here the south face was visible, but as it gave no hope of a direct ascent we returned to the couloir and indulged in about a hundred feet of difficult and exposed rockwork. After climbing a crack just large enough to get one leg in, and going out the length of the rope it was found that the rocks steepened too much to be practicable. Retracing our steps we returned to the rib already mentioned.

We were now at the west end of the highest of the three ledges that run across the south face. There seemed at this point no alternative left but to traverse the south face and at least try the southeast arête.

The first part of the way was easy and we all moved along together, but about the middle of the face it narrowed down, and for a distance of twenty-five feet consisted of nothing but two ledges each about six inches wide. After these had been "gardened" they proved to be quite solid. The rock bulged out directly over our heads and then rose sheer above. Below ?—well, the debris cleared from the ledges did not even bounce for over a thousand feet! Fortunately there were good "underneath" hand holds about waist high. After this spectacular place the ledge broadened out again and we soon reached the base of a thirty-foot chimney. Here we were sheltered from the cold wind, and as it was nearly one p.m. we stopped for lunch.

After our meal, we left our ice-axes behind and ascending the chimney on good rock found ourselves on the ridge at the base of one of the gendarmes. Climbing part way up this and making an exposed traverse on the far side we dropped down a little to the base of the largest gendarme,

1 See *C.A.J.,* Vol. XIX, p. 39, for Dr. Hickson's interesting account of his attempt on the tower. (Editor).

which is such a prominent feature of the ridge. Direct progress seemed barred. The base of the pinnacle presented a smooth face some fifty feet high, and overhung the ridge on both sides. This was surmounted by a delicately balanced column of rock rising as high again, and the general appearance of insecurity was enhanced by an immense boulder poised on the top.

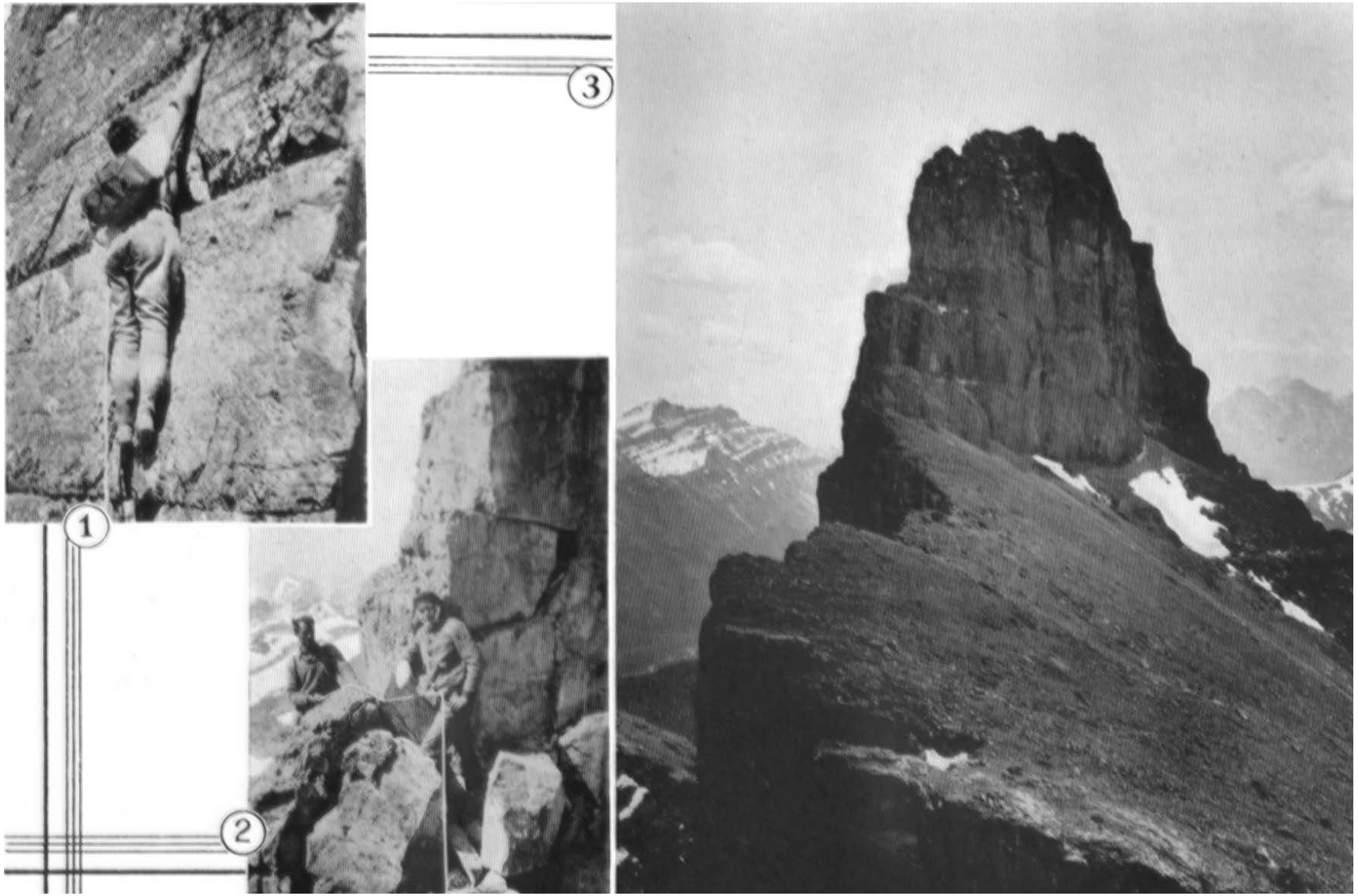
A little below us on the north side was a broad scree-covered ledge to which we descended and which we followed for a short distance. If now we could only gain the ridge above, our chances of success appeared good, as the climbing beyond was obviously less difficult. But to reach the ridge seemed impossible. Everywhere the rock overhung the ledge slightly. Changing to rubber shoes, we spent the next two hours in trying to make this thirty or forty feet go. In several places I was within a few feet of the top, but each time the last bit proved impossible or else fingers became too tired and I was forced to retreat. Finally, by traversing to the end of the ledge, squeezing around a corner and going out the full 140 feet of rope, it was possible to see the whole of the north face, right back to the col. The Tower's defences seemed impregnable!

It was now 3.15 and, before starting down, we turned back to have another look at the face at the base of the gendarme. Closer inspection raised our hopes. The holds were few and far between and often not more than half an inch wide, but the rock was so rough that they could be used to full advantage. Alec and Grahame sat on top of the next gendarme and while holding the rope cheered my efforts. Reaching the top of the face it was possible to traverse the pinnacle on the north side and gain the knife-edge ridge beyond. The next gendarme was turned by descending to a ledge and crawling along on hands and knees to reach the ridge again at the point where it runs into the face of the final tower. From this point on, the route looked quite feasible, so returning to the others, I donned climbing boots and at five o'clock we started the descent by the same route that we had come up. We unroped below the lower cliffs (6.15) and were back at camp just twelve hours after leaving it.

Next morning, July 6, we were away by seven o'clock. At the beginning of the traverse (11.00) we left our ice-axes and changed to rubber shoes and in half an hour were again at the gendarme. There the rope was doubled and fastened around a belay at the top of the face so that half of it could be used as a fixed rope. Just as Alec was starting to come up, the rope dislodged some stones, one of which hit him on the head and inflicted a bad cut. We rendered first aid, but had difficulty stopping the bleeding. After lunch we asked Alec if he felt ready to start down and his reply was "We're going to climb the peak before we start down." So by one o'clock we were assembled and reroped at the top of the face.

From the farthest point reached the previous day a short V-shaped crack, with an awkward chock-stone at the top, led to easier going. The rocks were still fairly steep and every ledge and hold was loaded with scree. Fortunately there was room to choose a zigzag course and so avoid being directly one above the other. After this spell of rather more rapid progress we reached a chimney some thirty feet high which led, as we fondly believed, to the summit. On reaching the top, however, we saw another summit a short distance away and obviously a few feet higher. The two were connected by a narrow arête in the last stage of disintegration. We picked our way cautiously along it while tons of rock went crashing down on both sides and then we crawled along the top of a thin slab set on edge. With bowed heads (due to the usual overhang) we made the approach to the summit along a ledge and then squeezing up through a crack above us, emerged right at the highest point (3.15).

The day was very clear and the view magnificent, but as it was late we stayed only three-quarters of an hour. The descent by the same route was uneventful.



(1) And (2) Climbing Molar Tower. *Photos R. G. Cairns*

(3) Molar Tower. *Photo Edward Feuz*

We reached camp at nine o'clock and set about getting the largest meal that our small resources could supply. Our real celebration supper we had the next night with an English party just returned from the Saskatchewan river country, whose tents we had noticed being erected during our descent.

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THE FIRST TRAVERSE OF MT. VICTORIA FROM SOUTH TO NORTH

By Georgia Engelhard

Previous to 1933, the traverse of Mt. Victoria at Lake Louise had been made three times (see "A Climber's Guide"—Palmer and Thorington, and Eaton Cromwell's account in the Canadian *Alpine Journal,* Vol. xxi). In each case the traverse had been made from north to south, starting from Lake Louise, climbing the North Peak, thence traversing the ridge to the main peak and down via Abbot pass; in all cases the climbs had been very long ones, requiring from seventeen to twenty-four hours. The minimum time from the North Peak to the main peak had been, I believe, seven hours. The climb had always been considered an extremely arduous and exacting one.

Ernest Feuz, the Swiss guide, and I calculated that, could the traverse be made in the reverse direction, it would be a much less arduous undertaking, as a good start could be made from Abbot pass, enabling the climber to reach the really difficult part of the ridge in fresh condition, and not somewhat tired by about six hours of steady, if easy climbing, as was the case on the previous occasions (average time to the North Peak from Lake Louise, six hours). There was, however, considerable doubt as to whether we would succeed, as on one of the many pinnacles on the ridge it had been necessary to rope off, and Rudolph Aemmer, who had guided the previous parties, claimed that he had seen no way of climbing down without artificial aid. However, we decided that it was very worth our while to attempt it. Upon examining the ridge through the field-glasses we decided that, were we unable to climb up the pinnacle, which appeared to overhang considerably, we would be able to make a traverse below it on the Lake Louise side of the ridge.

We left for Abbot pass on the afternoon of August 14, well supplied with extra rope and slings, reaching the hut at about 8 p.m., and after a good supper went promptly to bed. The morning of the 15th was a gorgeous one, cool and clear and windstill. We started up the familiar ridge at 5.30 a.m.; the snow was in excellent condition, enabling us to reach the main peak very comfortably in one hour and fifty-five minutes. Here we rested a little and marvelled at the wonderful sight of the many surrounding peaks glittering in the early morning light. Ahead of us stretched the arête, a bristling chain of gendarmes perched on a knife-like ridge, which dropped off on the O'Hara side at an angle of 45°, on the Lake Louise side at a more gentle one of about 25°. It was an imposing sight.

In actuality, it was much less formidable than it appeared at first glance. At 7.30 a.m., we started down to the first gap over loose shale and small boulders lying on a steep slope, a pitch which required caution to negotiate. Reaching the first gendarme, we climbed it easily and descended again to the ridge. We climbed practically all of the gendarmes, making only two traverses on the Lake Louise side of the ridge, a procedure which required care as the rock was extremely loose and shaly. But on the whole I was agreeably surprised, finding the rock on the gendarmes fairly solid. The ridge itself was less rotten than I had expected, and though it was narrow in places, it never was actually a knife-edge. The hand and footholds were firm and fairly large, and if one took one's time in crossing the loose rock on the ridge itself, the footing was not bad. We were able to keep up a fairly steady pace and found the going interesting and enjoyable. We noticed that the south side of the gendarmes was vertical, the angle on the north being much less abrupt. This fact was very much in our favor, as the preceding parties had had to climb down the steep side which was a much more difficult and a slower procedure than to climb up it as we were doing.

After about an hour of continuous steady climbing we reached the roping-off place. Above us rose the pinnacle, and we could see the rope hanging from the sharp nose on the south side. But to our astonishment we encountered no difficulty whatever in scaling the southeast face of the gendarme by way of good, if narrow, ledges. Needless to say, we were immensely pleased, as our success was now assured. Upon reaching the middle peak at 9.30, we stopped for second breakfast, which by this time was very welcome.

We encountered no difficulty on the remainder of the traverse, finding some excellent bits of climbing on sharp ridges and up sheer pitches. The split (see Cromwell, Canadian Alpine Journal, Vol. xxi) is in no way comparable to the one on Hungabee, nor are there any real technical difficulties. Due to the fact that one climbs up and down, the climb is less fatiguing than the ordinary type of ascent. The last bit, leading on to the North Peak, is very easy, but is preceded by a nice scramble up a sharp needle, where we embraced a vertical ridge for about thirty feet. We reached the North Peak at 10.30 a.m., exactly three hours after leaving the main peak. I attribute our fast time, partly to the fact that we were climbing up the steeper side and down the easier, but mainly, to the fact that we were still fresh and keen when we reached the major climbing, while the other parties must have worn down some of their vitality in the climb to the North Peak.

The day was so fine and the view so magnificent that we stayed on the North Peak till noon, enjoying the sight of old friends such as Sir Donald, Columbia and Assiniboine. The descent to the tea-house at the Plain of Six Glaciers was made in one hour and fifty minutes—the snow being in excellent condition, and permitting several extremely enjoyable glissades on the upper Victoria glacier. The total time for actual climbing from the pass to the Plains was six hours, twenty minutes. We were out a total time of eight and a half hours.

I would characterize this traverse as an interesting one, but with no major difficulties. It requires a climber of average ability and stamina and I agree with Mr. Cromwell that due to the extremely broken-up nature of the ridge, two on the rope is preferable to three. By using this route it is possible to make the traverse without its being too strenuous an undertaking, and it permits the climber to get the maximum enjoyment out of the negotiation of the ridge, as the factor of fatigue is considerably lessened. I should say that it makes just an enjoyable day's work. Of course, it should never be undertaken except under the best conditions, as snow on the ridge would be unpleasant and uncertain weather would tend to make one hurry, which would be by no means advisable over the loose rocks. It is decidedly not a climb for a novice, as experience in handling the rope, as well as in negotiating the different types of rock is essential—while a slip might easily prove disastrous. This south to north traverse was later repeated by Miss Lillian Gest and Christian Hasler, and again by Louis Sussdorf and Rudolph Aemmer. I feel sure that in the future it will prove to be one of the more popular climbs in the Lake Louise district. I look back upon it as a very exhilarating and pleasurable experience.

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HUNTING FOR THE ABODE OF THE HOMERIC GODS

By Gustave A. Gambs

A visit to Greece may be undertaken in the spirit of a pilgrim expecting strange revelations. A wonderful climate, unequalled beauties of nature, endless treasures of art, forgotten ideals of mankind and many quaint customs await him. To enter into the proper mood the approach should be made by way of the sea.

On the fourth of July, 1933, I landed at Piraeus and within an hour I arrived at Athens. Through the kindness of the secretary of the Alpine Club of Greece I found a travelling companion for a few weeks' visit to Mount Olympus and Mount Parnassus, the seats of the ancient gods of Greece. Petros was the name of my comrade and interpreter, yet his main role was to solve problems of transportation, lodging and food. The day after my arrival at Athens was spent in preparation, the trip demanding sleeping bags, lantern, climbing boots, cooking utensils, food and other paraphernalia, all to be packed so as to be readily transferable from railway coaches to crowded buses, from these to donkeys, and finally to our own backs.

Before the day was over we boarded the Salonika express, but left it at Larissa to await a local train. This was done for two reasons: the express passes through the scenic gorge of Tempe before daybreak, and it does not stop at Litokhoro, which was our destination. Views from the platform of the local train gave us a fair idea of the unique beauty of the narrow vale of Tempe, six miles long, which separates Mount Olympus from Mount Ossa. Soon our train began to skirt the Aegean sea and before long we arrived at Litokhoro. Within five minutes walk from the station there is an ideal beach on an emerald sea, while the village six miles distant is perched a thousand feet high on the slopes of Mount Olympus at the outlet of the gorges and the valley of the mountain stream Vythos. In the background of this valley looms the mountain of Zeus, with glittering snow patches and bulky white clouds hovering over its crest. While awaiting the bus we indulged in a swim in the domain of Poseidon. At noon we reached the village square with the customary idle masculine crowd. As soon as we made our plans known we became the objects of curiosity and speculation on the part of some villagers, especially since the licensed Olympus guide was absent, but after four hours of animated discussion and bargaining we succeeded in breaking away with a pack-train consisting of a driver or "agoyate" and two donkeys.

The trail led across the lower part of the Vythos gorges and then climbed the valley's ridge trail until it reached the splendid walnut forests surrounding the monastery of Haghios Dionysus. The ridge must be abandoned to visit the monastery; a descending path is taken to the left and at dusk the gateway is reached. The structure stands on the rocks of the Vythos at an altitude of 2500 feet. A superior and four monks are now in attendance. At the gate a brother greeted us, and soon we were offered the traditional cup of "oozo" for welcome. A large barren room with all its floor space was cheerfully assigned us for night quarters. Early next morning we were led by the superior into the church, a Byzantine basilica with five domes, and were shown endless halls that at one time, centuries ago, sheltered over two hundred brethren. Then we were urged to visit the grotto, two miles to the east, along the stream where the founder of the monastery placed the first chapel on the mountain and which after his death became a shrine sought by many pilgrims to the present day. This whole rocky valley has a rich forest growth, adorned by wide spreading coppices of box ten feet high, groves of elms, beeches, hazelnut, chestnut and other nut trees, as well as yews, and pines of different species,

We left the monastery early in the afternoon and came within two hours to Prioni, altitude 3200 feet, the headquarters of the herdsmen of the east slopes of the mountain. About ten families stay here all summer, living in thatched huts the sides of which consist of spruce boughs—all very primitive. More than 10,000 sheep and goats are scattered over the eastern side of the mountain. They graze as high up as the alpine meadows reach, in sheltered places to an altitude of 9000 feet. Early in the spring they start from the valley, gradually moving up the slopes as the snow recedes, and in the fall they retreat slowly before the rigors of the winter until they reach the bottom lands. Prioni offers in the summer months the highest running surface water on the mountain, and a good sized stream gushes forth from a limestone rock cave. From here upward the trees become scarcer. Soon one enters an arid zone which extends to the first permanent snow patches wedged between shady and deep-cut gullies.

Our goal for the day was the refuge of the Alpine Club of Greece, built of concrete, placed under roof during the summer of 1932, and adequate to shelter thirty-five people if necessary. It stands at an altitude of 6900 feet on the promontory of the eastern ridge, coming straight down from the crest crags which were constantly in view during the ascent. It was dusk when we reached the refuge, three hours from Prioni. Petros had told me that the interior was in a rather unfinished condition owing to financial difficulties. In reality, the refuge is a storehouse of building material rather than a place for light housekeeping. The fireplace is beyond reproach, but the uneven bare rocky floor is covered by loose boards. Such flooring by its seesawing, will upset dishes, pots, food, and mental equilibriums. Below the surface, too, it offers splendid nesting places for mice and other vermin. Nevertheless we stayed here four days. Every morning I arose to await the spectacle of the rising sun, the gradual illumination of the gulf of Salonika and Mount Athos and turning around, in the background, the reddish glow, cast on the upper snowfields and the white rock castles of Zeus. These were moments of contemplation and quietude never to be forgotten.

The refuge is conveniently located; from it the skier, as well as the climber, may visit any point of the uplands within a day. Hardly a mile from it by airline rises a rock wall, in itself about 1000 feet high, one mile long, of loose, brittle, and bright shaly limestone, running from north to south and crowning the massif. It is bordered by a deep gap at either end, its east face is well furrowed and the grooves carry rock debris slowly and steadily down the slopes until it is ground up into scree. This fine material stretches in deep layers toward the sod-covered hollows 2000 feet below. Thus direct ascents from the refuge are almost impossible. The two culminating peaks rising from the center of the rock wall are 300 yards apart; the southern point (9571 feet) is called “Pantheon” by alpinists and “Mitika” by the shepherds, and the northern point (9545 feet) consists of a forty-foot rock tower called the “Throne of Zeus” or “Stefani.” They are the highest elevations in Greece. The north gap of the rock wall or barrier, Porta, is 8807 feet high. From here a rock ledge, used by chamois, leads around the east flank of the mountain to the south gap of the barrier, which may be named “Skala Notch”, since it is overtowered by “Skala”, 9400 feet high. An abrupt spur winds from this point in a westerly direction for about 600 yards, terminating in Skolion (9528 feet). From the north gap, Porta, a spur runs off in a northeasterly direction for about half a mile, terminating in a knoll, 9141 feet, called “Saint Elias”.

During the stay at the refuge we climbed Skolion, Skala, the Throne of Zeus, and Saint Elias. The ascent of the first two does not require any mountaineering skill. From the refuge a trail leads up to the snow gully which supplies water for man and beast. The grassy and rocky ridges forming this deep gorge may be used to gain higher ground, and within three hours of easy climbing the huge cairn of Mount Skolion may be reached. The Throne of Zeus demands greater effort and a

certain amount of experience. We took the Kalyvia trail, mounted an abrupt slope shaded by sturdy stone pines, crossed at timberline a steep snow-filled gorge, engaged craggy precipitous slopes, and emerged at the Saint Elias gap from our valley confinement to enter the wide open spaces where bright sunlight and invigorating air welcomed us. We stood here on the rim of the Saint Elias basin. A short level walk took us round the basin over alpine meadows to the Porta gap. From here we followed the shelf or chamois highway along the east face of the rock wall to a place where a deep and wide gully descends from the center of the barrier. From the refuge it takes about four hours of moderate going to reach this place. Our heavy boots were changed for sneakers, a bite was taken, and all encumbrances left behind. While climbing up the main gully, swept by a violent wind, we had to change from side to side to guard against rolling, falling, or flying stones. Several chimneys offered entertaining scrambles, and a few narrow, airy rock bridges led to the forty-foot tower or throne, which itself called for some exposed clambering. One hour should be counted from the shelf at the crossing of the gully to the top of the tower.

It was about noon when we reached the goal. Bulky, white clouds, blowing in from the northwest had been skimming the crest line for the last two hours. We realized that little time was left for discussing at length the different landmarks looming up at the horizon—to the east Mount Athos rising from the Aegean sea; far to the south of the Thessalian plains, Mount Parnassus; the Pindus ranges to the west; and the Macedonian ridges to the north—all this had to be focused in a glance. First a few short puffs of violent wind caused us to waver on our eyrie, then some fleeting cold clouds struck us, and before long we stood shivering in a dense fog. It now dawned on us that we were intruding—that we were occupying the throne of the Homeric gods, controlling the clouds, rain, lightning, thunder and storms. We were not inclined to await further evidence of the gods' displeasure and beat a hasty retreat. It took another hour to retrieve our belongings, still bathed in sunshine, although the crest a thousand feet above, remained capped. We returned by the route we had come, passed the Porta, skirted the Toumba Mountain and reached the summit of Mount Saint Elias within half an hour from Porta. This little detour was made in the hope that the fog might lift, but it only became thicker. From the summit of Saint Elias the crossing of the Meadows of God to the Elias basin gap takes half an hour. For the descent the morning route was retraced and within two hours the refuge was reached.

While on Mount Skolion, Petros, who in the last few years had been there several times, called attention to fragments of red brick and tile that had come to light during the erection of the huge cairn that crowns the summit. This find leads to the belief that a chapel might have stood there overlooking the south and west slopes of the Olympus massif. This is not surprising because Mount Saint Elias, holding sway over the east and north slopes of the mountain actually bears on its top a small chapel with a little apse and dome. It is built of loose stone and surrounded by a wall six feet high. The whole structure scarcely covers a space of twenty-five square yards, and the miniature Byzantine dome hardly towers more than ten feet above the floor of the chapel. It well deserves mention, because it is the place of worship nearest to heaven in Greece.

On September 12th, 1927, a number of Swiss, French, English and Greek mountaineers climbed the Throne of Zeus; a meeting was held, and the Greek Alpine Club was founded on the summit. This event marked a new dawn for the mountain, and ever since it has been sought by mountaineers from all over the world. Before that time the mountain had the reputation of being haunted by brigands. In a niche of the wall surrounding the chapel on the summit of Saint Elias we found a stone tablet bearing the names of three famous bandits of Greece with the date of 1924. I learned that these brigands had harassed gendarmes and wealthy shepherds for ten years, that they

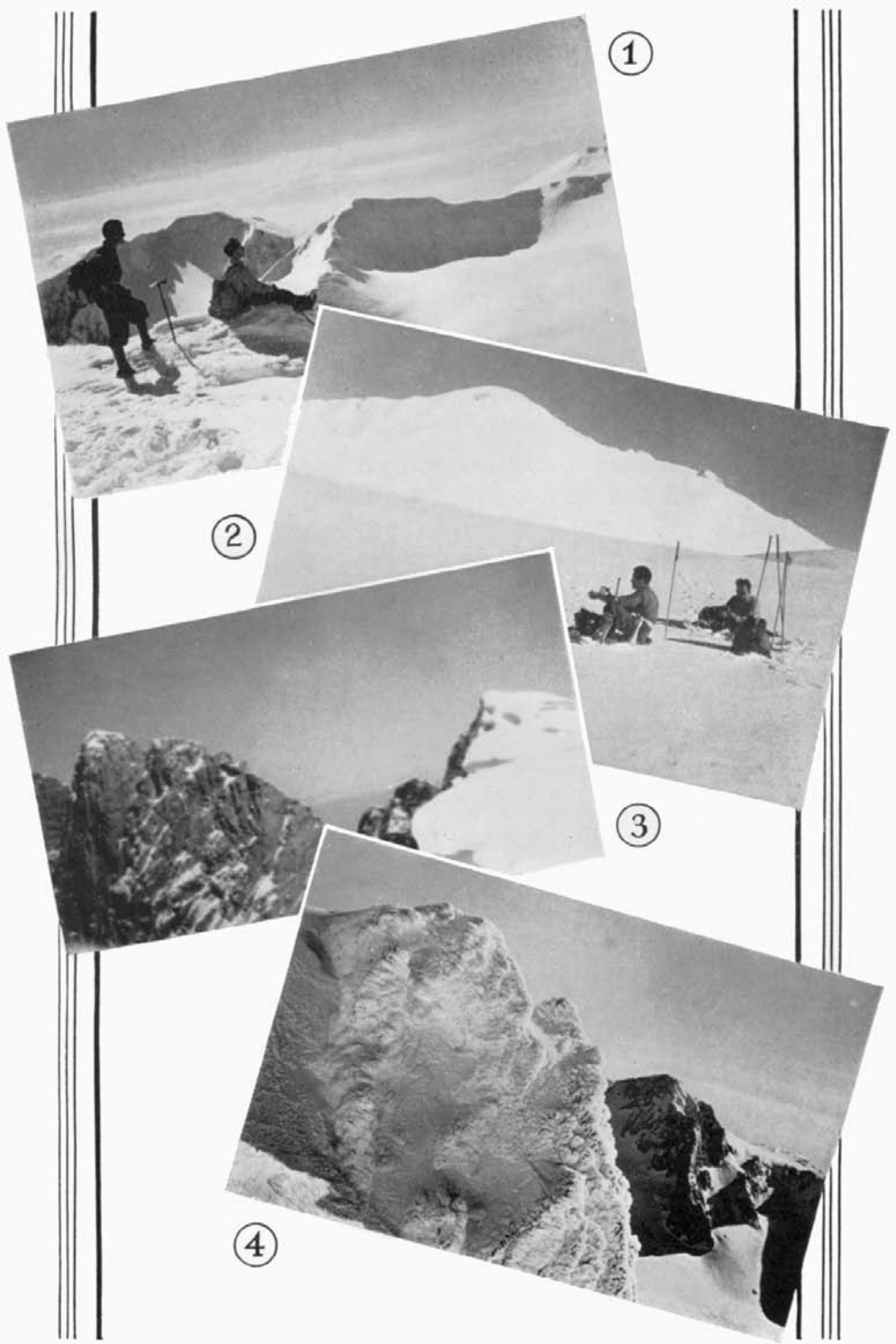
were killed in an encounter with soldiers in 1927, and that after this last stronghold was purged of outlaws the veil of mystery was lifted and the mountain became safe for shepherds, pilgrims, and tourists. The mountain itself, however, and its flora and fauna will only be safe after it has been made a national park.

To the south and west of Skolion and around Saint Elias many square miles of upland, broken by snow-filled basins, furrows, and vales extend. Most of this ground is above timberline. Wonderful alpine meadows, and a sturdy growth of underbrush would develop if sheep and goats could be banished. During the three days of our wandering among the high cliffs only one chamois was seen near Skolion—it was grazing below a snow patch about 300 yards to the northwest, apparently unaware of our presence, because the wind was blowing toward us. After watching it for about ten minutes we made some noise. The chamois detected us at once, watched a few moments, moved slowly upward over the snowfield, took another good look, and dashed away. The shepherd of these heights said that but one hunter had been clever enough to reduce the large herds that used to roam around the high cliffs, and that he might have succeeded in exterminating the species had he not become too old to follow the sport. It so happens that the tribe is at present on the increase and counts about fifty head.

We noticed no ptarmigans, nor did we see or hear any marmots. The shepherds assert, however, that boulder fields, inaccessible to dogs, shelter a few of these denizens so common to lofty regions. In spite of the devastation due to grazing, about fifty species of alpine flowers are sustaining a modest existence in protected places. I shall only mention the most popular and the most daring found among the crags, snow and ice caves, such as myosotis, gentians, violets and ranunculus. In vain I searched for edelweiss, which usually thrives in shaly limestone—the dry climate probably is too much for it. The stone pine seems to be the only tree that has a bark tough enough to resist the chewing habits of the goats. Scattered groves of these sturdy trees mark the places where dense forests must have stood in the past before the shepherds had ventured to these altitudes. It is evident that a well-managed national park would restore in a few decades a luxuriant vegetation and an abundant water supply on these high slopes.

I should have liked to linger a few days longer on this mountain, full of contrasts and so bound up with Greek mythology. The rugged crest offers enough playground to occupy and fascinate a cliff acrobat for at least one week, and the naturalist will find an almost unexplored field holding many hidden treasures. During the summer months the early mornings and evenings are quite cool and a chimney fire at the refuge is welcome. During the winter two or three feet of snow cover these highlands, and the vast and gently sloping snowfields around Bara (7600 feet) attract every winter more and more skiers. Our provisions were running low, except our emergency supply of dry beans, but my proud companions held that cooking and washing dishes are duties unworthy of a man. The agoyate offered his servies for obtaining prepared food from the village without delay, but I realized that the harvest was on and that the golden wheat was on his mind. His zeal aroused my doubt and so I decided that we should all descend together. We followed the route by which we had come, except that the “upper” trail was taken, leaving the monastery to the right down in the valley. Seven hours of actual travel were needed to cover the distance between the refuge and the village of Litokhoro. The next morning, when leaving the village for the railway station, we learned that our agoyate had left his home at dawn to join the harvesters far off in the plain.

A hurried side trip to the stylite monasteries of Meteora took us through the heart of Greece to the typical towns of Trikkala and Kalambaka, where the fustanella is still worn with pride, and



(1) Summit Of Mt. Parnassus, Pedros To The Left.

(2) Alpine Meadows In View Of The Main Ridge Of Mt. Parnassus

(3) Main Summit Of Mt. Olympus.

(4) Mt. Parnassus—Near The Summit.

where men appear to have a good time, chatting during the day, sipping Turkish coffee, handling the inevitable string of beads, and singing at night. It seems to them but natural that the women should work in the fields early in the morning and late in the afternoon, while the middle of the day may be used for spinning yarn and weaving cloth, besides assuming their regular household duties. These conditions and various other customs persist in many remote mountain districts but chiefly in the villages around Mount Parnassus, where the male enjoys privileges never disputed by the other sex.

The town of Arakhova (3100 feet) on the southeast slopes of this mountain seems to be the gathering center of the shepherds of the region. These stately looking fellows relate with pride that during the four hundred years of Turkish domination in Greece their village had never submitted to the Turkish rule, that their fathers in cases of incursion would evacuate the town, flee to the recesses of the high mountain, and harass the invaders until despair compelled the marauders to withdraw.

My desire to climb Mount Parnassus from this village was easily satisfied. The Alpine Club of Greece had planned to erect in July on the mountain a refuge for winter sports at an altitude of 6300 feet just above timber-line about two miles from the top. Petros had been delegated by the club to get in touch with the builder and to report about the proceedings. Upon reaching the uplands of Sarandari, about three and one half hours walk from Arakhova, we were greeted by the builder, his overseers, and some curious shepherds. The workmen had arrived a few days before us and a well sheltered camp near the building site was placed at our disposal. About fifteen workmen were blasting, digging and rolling rocks for the foundation, and women leading donkeys were packing sand, snow, ice, and firewood from rather distant places. One man kept a fire going, melting granulated snow for mixing mortar, and the master mason was shouting and giving orders in all directions. The hut is to stand fifteen feet high and to shelter twenty skiers. It was to be under roof within a fortnight.

It seemed that the shepherds were pleased to have us among them. We not only were invited to visit their folds and stone shelters scattered all over the uplands, but one of them very soon produced a lamb at our camp. As self-appointed host he insisted upon killing the animal in our presence. With a fiendish satisfaction he wielded his knife, sprinkled the blood over our belongings, as if in an act of sacrifice, skinned the animal with skill and demonstrated that he was not only a peaceful shepherd but also a born butcher. The whole performance looked like a ritual, but Petros assured me that our host acted under an impulse of hospitality, coupled with the desire to furnish proof that we were getting fresh meat from the best lamb he could offer. Then came an exhibition of his culinary art by preparing broiled chitterlings and other broiled rare bits. While all this was going on I tried to deplore the lack of cleansing water, but I was quickly assured that fire is a better cleaner than scanty water. I must abstain from commenting to what extent I qualified as a worthy guest, but I remember that Petros rose to the occasion in the most valiant manner.

Mount Parnassus forms a complex massif with a rounded top of large extent above timberline. A guideless stranger may roam for hours over high ridges extending between furrows, hollows and vales before he finds the top range called “Liakouri”, 8060 feet high, which bears a wooden cross. The ascent from the refuge is rather easy, since sheep trails may be used to the foot of the massif’s culminating ridge, the summit of which stands about 500 feet above the surrounding base. The final climb leads through a maze of brittle shaly limestone rocks of all sizes. Three hours are required from the new refuge to Liakouri and two hours for the return. The view from the summit embraces the gulf of Corinth, many mountains of the Peloponnesus, Mount Olympus and quite a

number of islands of the Aegean sea. Intense grazing is responsible for a rapid extermination of the plant life of these uplands. Only governmental measures for the restoration of the depleted natural resources can remedy the evil, but even then progress may be slow since the mountain holds in its folds large tracts of land owned by municipalities boasting ancient prerogatives.

After a few days stay on these heights we returned to picturesque Arakhova, with its endless vineyards reputed to yield the best wine in Greece and thus it is no wonder that in ancient times Mount Parassus was consecrated to Dionysus and Maenades.

An early bus took us to the tidy and thrifty town of Lebadia, which deserves a thorough visit. In the afternoon we were driven to the railway station six miles distant, passing through an irrigated area of intensive cotton culture. Thus one could visualize what irrigation may do some day for Greece.

Four hours of railway travel brought us back to Athens, first to the quarters of the Alpine Club where a hearty welcome awaited us and where Petros at once became the center of attraction. Many questions concerning our exploits were cast at him, which led to much talk in animated Greek about future outings, new routes, and first ascents.

MODERN ICE CLIMBING EQUIPMENT

By Robert L.M. Underhill

Crampons (Ger. *Steigeisen*, Fr. *crampons*, Ital. *ramponi*). The modern crampon is due to a design worked out by Oscar Eckenstein, an Englishman of German descent, in the years shortly before the war.[1] Eckenstein's improvements over the older models consisted chiefly in increasing the number, length, and sharpness of the spikes, and in placing them carefully at the edges of the boot-sole, where they would afford the best stance. His purpose in all this was not merely to offer increased security of foothold to climbers making use of ordinary ice-steps, but to create an instrument which should in very large measure render step-cutting and the work of the ice-axe unnecessary. By means of a new and appropriate technique of crampon-walking he claimed that upon sound ice it is possible to move with perfect security, without the use of the hands or ice-axe or the aid of steps of any kind, upon slopes up to 60 degrees (clinometer measurement), and to maintain oneself, if the balance be good, upon those up to 80 degrees![2]

Crampons of the Eckenstein model have ten pyramidal-shaped points, 1–1½ in. long. (See Fig. 1, Nos. 4 to 9). While the extreme length is not more effective in use, it does permit a greater number of resharpenings. Majority opinion is that the frame should have but one joint, under the instep, as crampons of two joints (which likewise are made) do not sit quite so rigidly upon the boot. It should be remarked, however, that the fore-part of a two-piece (single-jointed) crampon pretty regularly gets bent into an upward curve, from the flexing of the sole; this, until it is hammered out straight again, diminishes the efficiency of the crampon by taking the points out of horizontal alignment, conduces (in my experience) to the liability of a break in the frame, and may become very uncomfortable indeed to the foot. Three-piece (two-jointed) crampons, if carefully adjusted, seem to have no possibility of slipping dangerously upon the sole, and I believe they are to be preferred.

Eckenstein crampons are now manufactured in all the different Alpine countries of the Continent, independently.[3] The model is sometimes varied somewhat, as by Simond of Chamonix, who has altered the pyramidal shape of the points to a simpler form, in the interests of lightness; an Austrian variant, the Horeschkowsky crampon[4] goes farther and makes the tips of the spikes themselves chisel-shaped, instead of pointed, which some consider an improvement. (Horeschkowsky crampons were, I believe, furnished to the last Everest Expedition). Essential in all cases is that the crampons should be hand-forged, as the cheaper machine-made article is too brittle to stand the strain. Eckenstein himself required that points and frame should be of a single piece, but improved methods of welding are said to make this unnecessary. The weight, for all styles, is about 2½ lbs. a pair.

1 This design was published in the *Oesterreichische Alpenzeitung,* 1908, 136ff., and 1909, 127ff. English adaptation in the *Climbers' Club Annual* for 1912.

2 See the articles cited. A more recent writer in the *Zeitschrift* of the German and Austrian Alpine Club (1925, 204ff.; French translation in *Alpinisme,* 1927, 211ff.) abates nothing of these claims.

3 Manufacturers in high regard are: A. Hupfauf, Einsiedeln, Switzerland; Franz Hafner, Tragoss-Oberort, Austria; A. Wein-mann, Ottobeuren bei Memmingen, Bavaria, Germany; Frangois Simond et Fils, Les Bossons, Chamonix, France; and Grivel, Courmayeur, Italy. Reliable dealers, carrying either these brands or their own, are: Sporthaus Fritsch & Co., Bahnhofstrasse 63, Zurich, Switzerland (catalog in English); Sporthaus Schuster, Rosenstrasse 6, Munich, Germany; Mizzi Langer-Kauba, Kaiser-strasse 15, Vienna VII, Austria; and P. Gleize, 5 Avenue de 1'Hotel-de-Ville, Chambery, France (with branch also at Chamonix).

4 A. Horeschkowsky, Marzstrasse 144, Vienna XIII. Obtainable also from German and Austrian dealers as above.

Eckenstein crampon-technique is an art by itself, which requires careful learning and much practice.[5] It necessitates that the spikes be kept always sharp, hence that the crampons be used only upon snow and ice and never upon rock—though verglaced rock must form an exception. Frequent resharpening becomes necessary and on longer outings it is advised that a small file be taken along.

Though many experts in ice-work have followed and even improved upon Eckenstein's methods, most users of crampons have been content to employ them, in the way Eckenstein deprecated, merely as aids to greater security on ordinary snow surfaces or in the usual type of cut step. And certainly there is much advantage in having something more than the simple boot-nail in such situations. For this purpose, however, the full-fledged Eckenstein crampon is unnecessary, and it is needlessly heavy. Crampons of fewer spikes and less weight—survivals, with modifications, of pre-Eckenstein types—are on the market and serve well enough the purposes of most mountaineers. Considering the manner of their use the points need not be maintained in such perfect sharpness, and far less compunction need be felt about retaining the crampons upon rock, when convenient.

The minimum number of spikes is two, but four are always preferable (Fig. 1, Nos. 1 and 2). Such crampons are of little value in mountaineering proper, but the skier who has to cross only a simple slope in order to attain his final summit may often carry them to good advantage. Six and eight-point crampons of the "Allgau" or an adapted Eckenstein model come next. The former are of questionable use, being too cumbersome for the skier and still inadequate for the mountaineer; but the latter (Fig. 1, No. 3) are well-suited to most climbing needs and are strongly advised for all cases where Eckenstein technique itself is not to be adopted.

It was inevitable that radical improvements should be sought upon the Eckenstein crampon itself. Half a dozen years ago Grivel of Courmayeur brought out a model which, in addition to the regular ten spikes, has two more in front, curving horizontally forward and designed to catch as the foot is rolled forward on its toe in climbing steep slopes (Fig. 2, No. 1).[6] The disadvantages of this protuberance—its inconvenience in small ice-steps, particularly those facing inwards, and upon rocks—will probably be more obvious to most persons than its advantages; furthermore, such spikes are needless with true Eckenstein technique, where the foot is always placed and held flat upon the surface and steep slopes are taken either with the toes pointing outward or by side-stepping. However, very few climbers employ genuine Eckenstein technique, and not many more have much to do with real ice-steps. On the steep slopes of hard snow so much more frequently encountered the Grivel crampon is excellent. The latest development is a crampon designed by the Chamonix guide Alfred Couttet and made by Simond.[7] It has nineteen points, arranged at close intervals around the edges of the sole and heel (Fig. 2, No. 2). This crampon also is not well adapted to Eckenstein technique, for nineteen points are too many to keep really sharp and their necessary proximity to each other creates a danger that the ice will be split out between them, instead of merely pierced. But it has its own great advantages and distinct field of usefulness. For it is much stronger than the ten-point Eckenstein, which will all too easily lose a spike or crack its

5 It has been dealt with, in English, in the *Climbers' Club Annual* for 1912, in G. W. Young's *Mountain Craft,* 288-292, and quite recently in the *Mountaineering Journal,* December, 1932, l00ff. (this last a translation from the German). For important articles in foreign languages see the citations in Notes 1 and 2, above.

6 Obtainable direct or through Gleize of Chambery and Chamonix.

7 See Note 3.

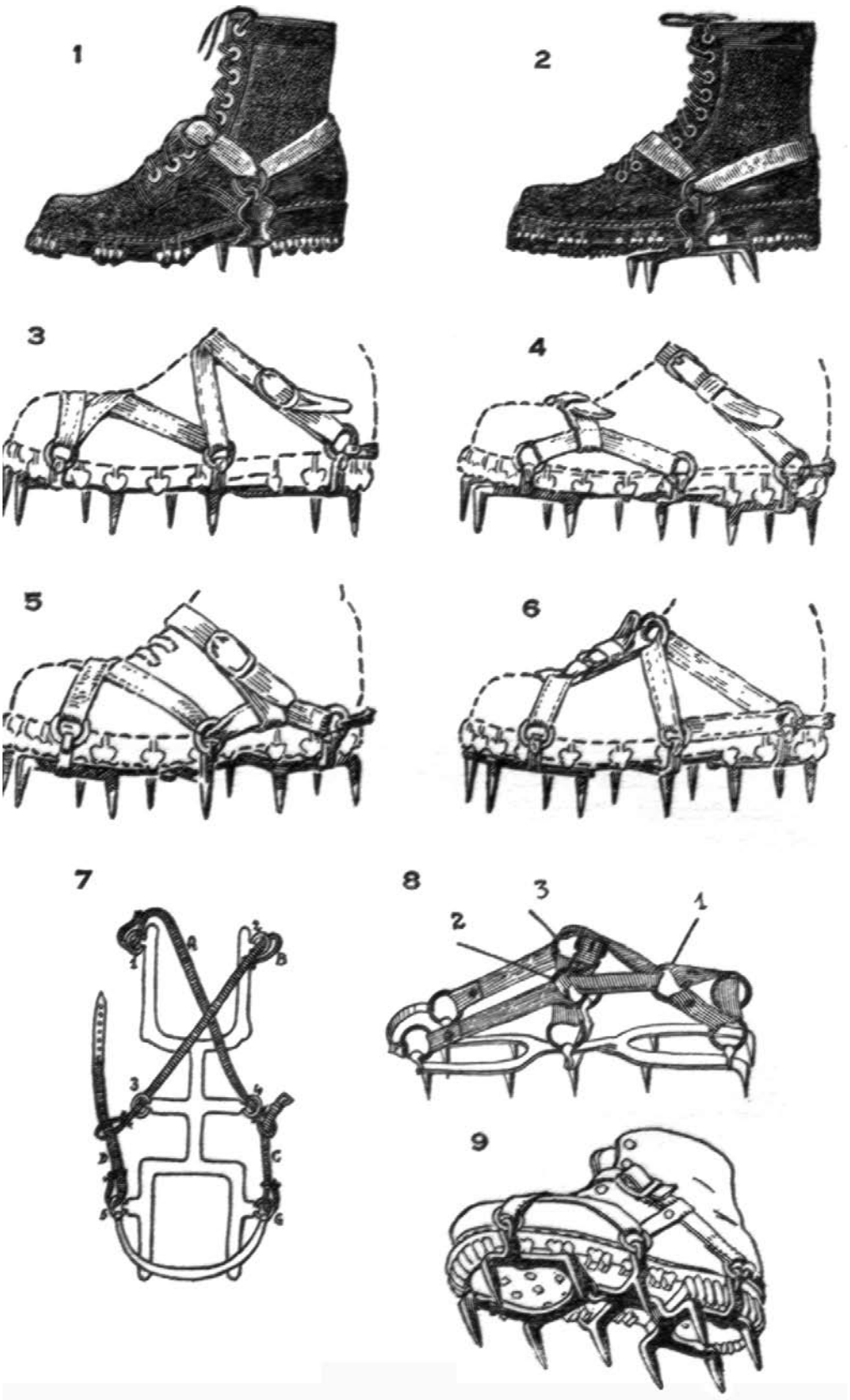


Fig. 1. Types of Crampons

frame if used upon hard uneven ground (e.g. rock-strewn glacier); and, again upon such difficult terrain, it is much more comfortable to the foot, as the circle of spikes provides a broad and solid contact not much different from that given by the nailed boot itself. The members of Mr. Bradford Washburn's recent expeditions to Mt. Crillon, in the Fairweather range, found these crampons splendidly suited to heavy packing over the Alaskan glaciers and moraines, where ten-point Eckensteins had proved quite unsatisfactory. They are doubtless the best foot-equipment evolved to date for all cases where exploration and heavy transport, with their rough going and frequent alternations of ice and rock, must take precedence over delicate and continuous ice-work—and so, in general, for the mountaineering conditions of our continent in distinction from those of the Alps. In cold climates or for winter climbing they have the added advantage that a minimum of metal touches the boot. Thanks to the ingenuity of their design they do not weigh more than the ten-point crampons.

Crampons, especially Eckensteins, must fit the boot exactly; otherwise they are a real source of danger. For this the length must be such that the two front spikes come precisely at the toe, and the width between the lugs such that there is no sideways play whatever. In ordering, a tracing of the boot-sole should be sent (statement of the boot size is not enough) ; and when the crampons arrive the lugs may need to be heated and bent to an exact fit by a mechanic. The Simond nineteen-point crampon may be shortened in length by its connecting piece and it is also somewhat adjustable, in width.

Crampon binding. The ordinary fastening is by means of a single hemp band, ¾ in. wide and 4½ ft. long, which is threaded through the rings of the two sides in alternation and finally buckled to itself over the ankle (Fig. 1, No. 3).[8] This long band is however very awkward and time-consuming to adjust, hence it is often replaced by two shorter bands, one through the front four rings and one across the ankle (cf. Fig. 2, No. 4, where leather straps are shown so arranged). Further developments concern the material used for the binding and the ease of the adjustment.

As for the material, hemp has the advantages of lightness and cheapness, but it contracts when wet, often to such a degree that circulation in the foot is interfered with. More importantly, it ices up very badly in cold weather, making the buckles hard to undo and the frozen bands very difficult to manage if the crampons must be resumed again on the same trip. For winter climbing in particular it is highly undesirable. Leather is heavier and has the counterpart disadvantage (to hemp) of stretching when wet, so that one must be on one's guard and prepared to tighten the straps occasionally. But it is much easier and pleasanter to handle, especially in cold weather.

As for the mode of adjustment, much ingenuity has been and is still being expended in attempts to devise a system—of hemp bands, leather straps, or combination of the two—which will permit the crampon to be put on and off with a minimum of trouble. Those which have come into some degree of use are illustrated in Fig. 1, Nos. 4-9, and Fig. 2, Nos. 2, 3 and 4. In the (Horeschkowsky) binding of Fig. 1, No. 4 and Fig. 2, No. 2, the toe-strap is supposed to remain fastened and only the ankle-strap to be undone. Fig. 2, No. 3, shows a more workable variation of this, the center rings being connected with the rear instead of the front ones, which leaves the toe-

8 These bands are not supplied with the crampons but must be purchased separately. (Ger. Steigeisen-Gurten, Pr. lanieres a crampons, Ital. cinghie per ramponi). The usual style fastens with a buckle, the spike of which simply pierces the hemp at the desired point, but a newer model employs two rings between which the band is jammed. Though this_ second fastening is less hard on the hemp, it is considerably heavier than the buckle and more difficult to manage under bad conditions.

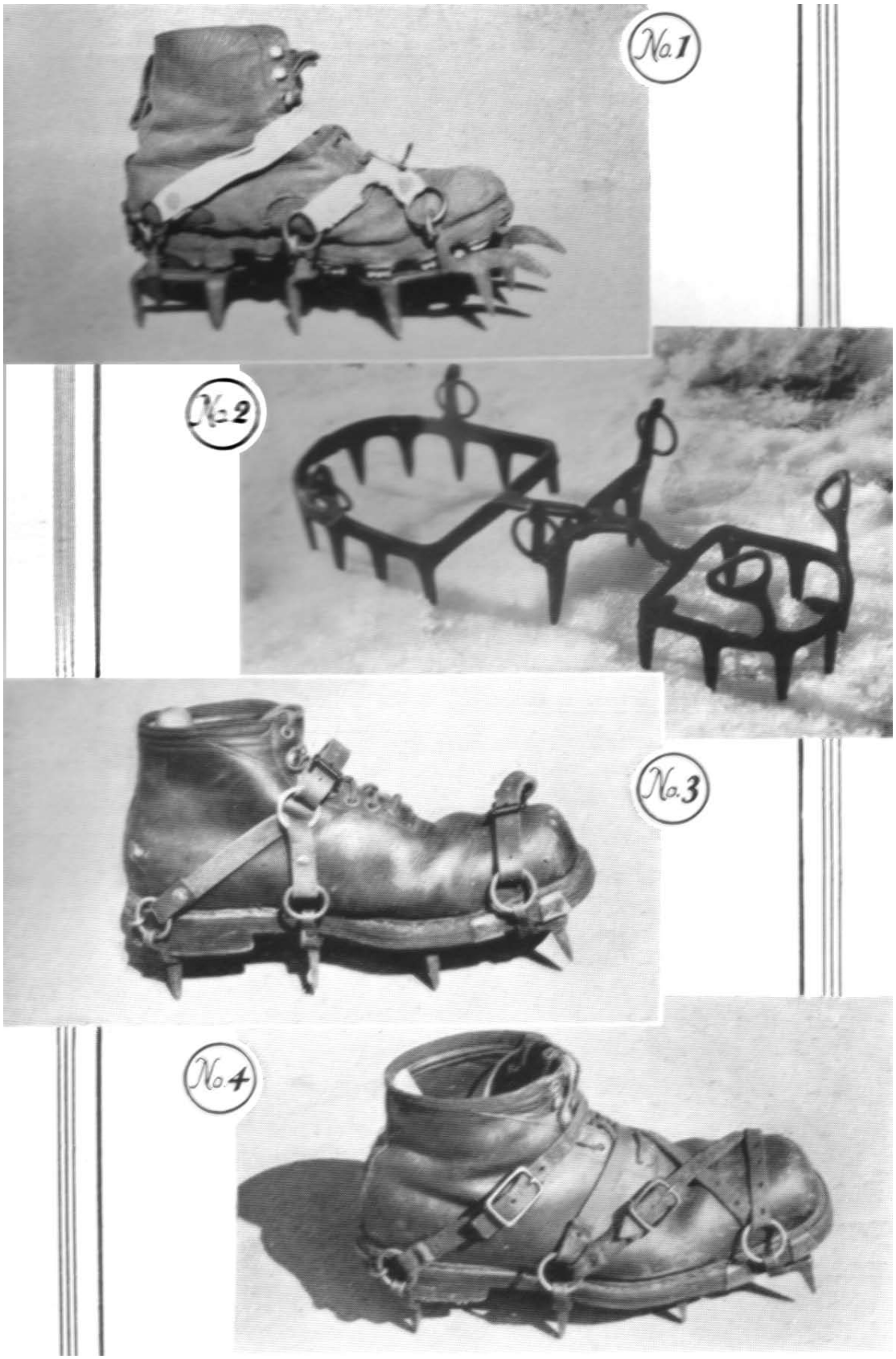


Fig. 2. Types Of Crampons & Bindings

strap farther forward. (But, with some particular makes of crampon it may fall so far forward as to be in danger of slipping off). In Fig. 1, No. 5, there are two fixed straps running, each, through the rear and center rings of one side and the front ring of the other; the ankle-strap is again the sole adjustment. All these systems may be carried out in either hemp bands or leather straps. Nos. 6 and 8 (which are essentially the same, with toe and heel interchanged in the illustrations) show a binding invented by Colonel Bilgeri, the famous Austrian ski teacher and winter mountaineer, and recommended by the Swiss Alpine Club. Fixed hemp bands (shaded lengthwise in No. 8) connect the two front rings with the new ring 1, and again the center and rear rings on each side with the new sliding rings 2 and 3; an adjustable leather strap (shaded crosswise) then runs in triangular fashion through these three new rings. It is intended that the contraction of the hemp bands shall be compensated by the stretching of the leather strap. Nos. 7 and 9 are again the same. Four leather straps, A, B, C and D, are attached at rings 1, 2, 5 and 6; A and B run freely through rings 4 and 3, and C and D in turn run freely through end-loops in A and B, to fasten together over the ankle.[9]

A quick-working binding is certainly most desirable, as otherwise the crampons will inevitably be retained too often over stretches of rock which blunt their points and endanger their frames. But I would hazard two general remarks on most of the above systems. In the first place, to have to work a nailed boot in under a fixed or only slightly loosened toe-strap is generally no saving of time or of trouble; in the end it's as easy to adjust two buckles. Secondly, if the strap over the ankle carries undue strain—as when it ties in several rings, instead of the rear two only—the binding is likely to be uncomfortable, as there is an important tendon at this point just below the skin. On the whole I am inclined to believe that the simple binding of Fig. 2, No. 4 (Eckenstein's original suggestion), carried out in leather straps, is about as quick as any, and quite the most comfortable.

Ice-axe (Ger. *Eispickel*, Fr. *piolet,* Ital. *piccozza*). The trend today is all toward shorter axes. Long ones are poorly balanced for step-cutting, and very unwieldy for cutting with one hand; also, they are awkward to carry or to stow in the pack during rock passages. The proper length is exactly that of a cane, when the axe-point is on hard ground. (For men of six feet this generally means just under 36 in., or 90 cm.) This test in fact has real meaning, for after all actual use as a cane is the most constant to which the axe is put, and if it is just right from this standpoint—neither too long nor too short—it will be least tiring to carry.

Swiss axes (Andenmatten, Hasler, Jorg, Fritsch, etc.) are still the unquestioned best. One has but to pick up and swing a good Swiss axe (Fig. 3, No. 1), in comparison with others, to appreciate at once the superiority of its balance and cutting power. But they are also quite the most expensive. French axes—e.g. the Simond "Chamonix" model (Fig. 3, No. 2)—are not popular outside their home district. The pick is too sharp (with a tendency to stick in the ice instead of splitting out the chip), the adze too curved, and the handle too heavy. Recently the Germans and Austrians have been bringing out some good axes at very moderate prices. The "Akademiker Pickel" (Fig. 3, No. 3), so-called because designed and supervised in manufacture by the Vienna Academic Section of the German and Austrian Alpine Club, has good lines and a balance not greatly inferior to that of the Swiss axes.

All axes come in three to five different sizes, the chief of which are called, in descending series, the guides', men's and women's models. For serious mountaineering men want the guides' model, and women certainly not the smallest of a series of five. That is, for men the pick should be 7½-8 in. (19-20 cm.) long, measured from the center of the handle. Some of the Zermatt guides

9 These various bindings are for sale by the dealers mentioned in Note 3 above, but it is generally necessary that the boot, as well as the crampon, be on hand for fitting. With leather straps, ½ to 5/8 in. wide and 5/8 in. thick, procured from a manufacturer of leather belting, and copper rivets, it is easy enough to make one's own rig.

prefer very long picks. In Fig. 4, No. 1, is shown an axe by Joseph Willisch, of Zermatt, whose reputation as a special maker of axes to order, stands very high: it has a pick 8½ in. long and a very slim handle, the combination making it delightful for step-cutting. But it should be said that there is another side to this question, even among guides themselves—and the guide has always been less bothered by the weight of his axe than the amateur. Adolf Rubi, a brilliant young guide of the Oberland, carries a ladies' ice-axe on most climbs. His argument is that on such trips the amount of time spent step-cutting is infinitesimal in comparison with that spent merely toting the axe over the mountain; hence lightness in weight should be the primary consideration. Very probably the days of the single axe-of-all-work are over and the modern climber should rather maintain an arsenal of axes, to meet varying conditions!

Such a special-duty ice-axe, for ski excursions, has for some years been made by Simond of Chamonix. It is "demountable," with the handle coming apart into two pieces for easier stowing in the pack (Fig. 4, No. 2). The mechanism seems to work reliably (it still works, on mine, after the axe had been lost and had lain out under the snow from February till June), but the necessary metal parts at the joint add about half a pound to the weight and badly affect the balance. Fig. 4, No. 3, shows a short-handled axe designed for rock climbers who may have to negotiate stretches of icy gully. It would also be very effective on a very difficult ice-climb where much one-handed cutting is necessary. (Made by the Werkgenossenschaft Fulpmes, Fulpmes, Austria).

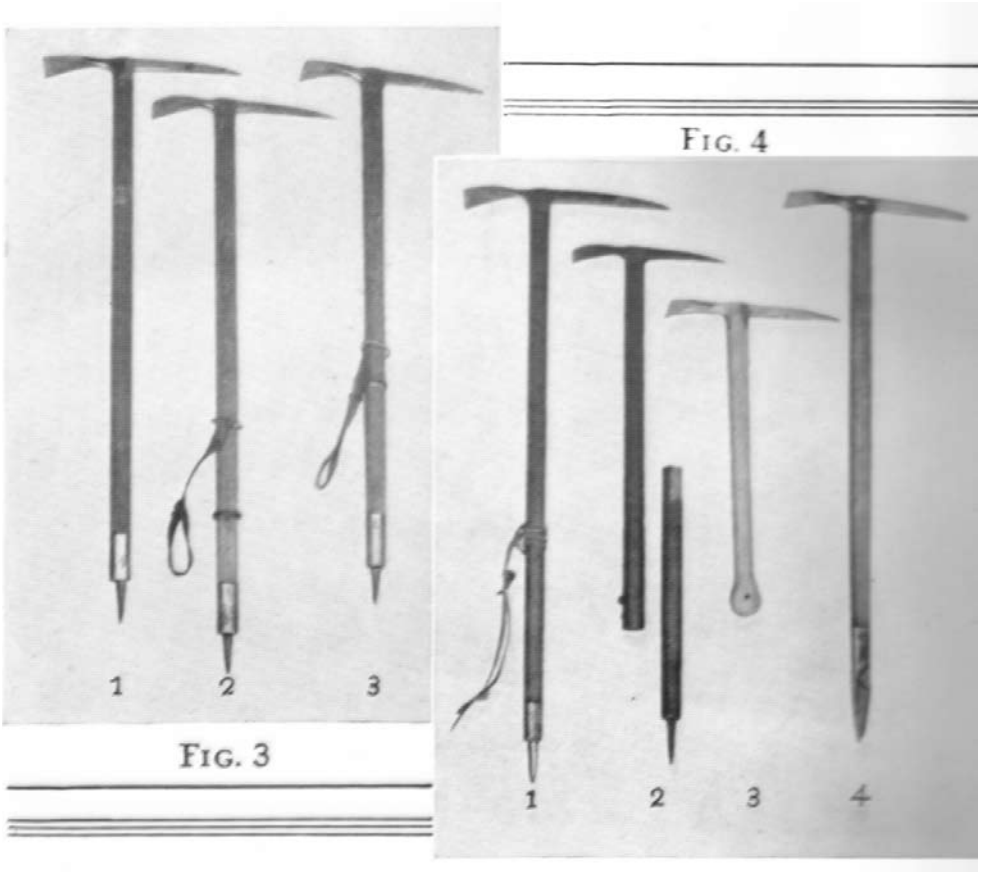
Very recently an attempt has been made by Colonel Bilgeri to improve radically upon the shape of the ordinary ice-axe. His model[10] (Fig. 4, No. 4) is chiefly striking for its triangular handle, with guiding furrow for the thumb, designed to prevent the axe twisting in the grasp during cutting. In winter, when the axe has to be handled with gloves or acquires a coating of ice, this might be a real advantage. The pick is chisel-shaped instead of pointed, and thicker at the top than at the bottom, the better to split out the chip. The teeth on its lower edge (these are not "to strike matches on" but to insure a better grip when the pick is driven into hard snow to provide a balance hold) include an additional extra-large one, near the tip. The head is flattened at the sides, over the handle, for driving in ice-pitons. The triangular spike, at the other end of the handle, is a truly vicious instrument, with sharp point and edges—too sharp for ordinary purposes, but a shell is supplied to cover them until really needed, on ice. This axe, though used with expressions of high satisfaction by some well-known climbers, still awaits a comprehensive testing.

Ice-axe sling (Ger. *Pickelschlinge,* Fr. *laniere a piolet,* Ital. *porta-piccozza*). No guide ever uses a sling of any sort whatever upon his axe, and in this the guides are imitated by most English guideless climbers. Nevertheless, I have on two occasions seen first-class guides (one of them Josef Knubel) drop their axes while climbing rocks, and from all accounts it is the first thing done by any amateur who falls into a crevasse. Furthermore, for one-armed cutting, especially downhill, a sling operates greatly to relieve finger-strain, and for cutting in winter, with gloves and icy axe-handle, it is indispensable.

The only sling at all adapted to step-cutting purposes is the well-known Fynn-Farrar model with sliding ring and fixed guard-ring at the spike (Fig. 3, Nos. 2 and 3).[11]

10 Made by the Werkgenossenschaft Fulpmes; sold by Schuster of Munich and Mizzi Langer-Kauba of Vienna.

11 Such slings can be obtained in Switzerland (Fritsch & Co.), but they are very heavy, as well as expensive; German and Austrian dealers offer much lighter and cheaper models, sometimes with aluminum rings (Victor Sohm, Bregenz, Austria, and St. Margarethen, Switzerland). It is however unsatisfactory to purchase these slings independently of the axe itself, as the rings must fit well. The "Akademiker Pickel" (see above) can be obtained ready-fitted with such a sling at small extra cost.



Figs. 3 & 4. Ice Axes

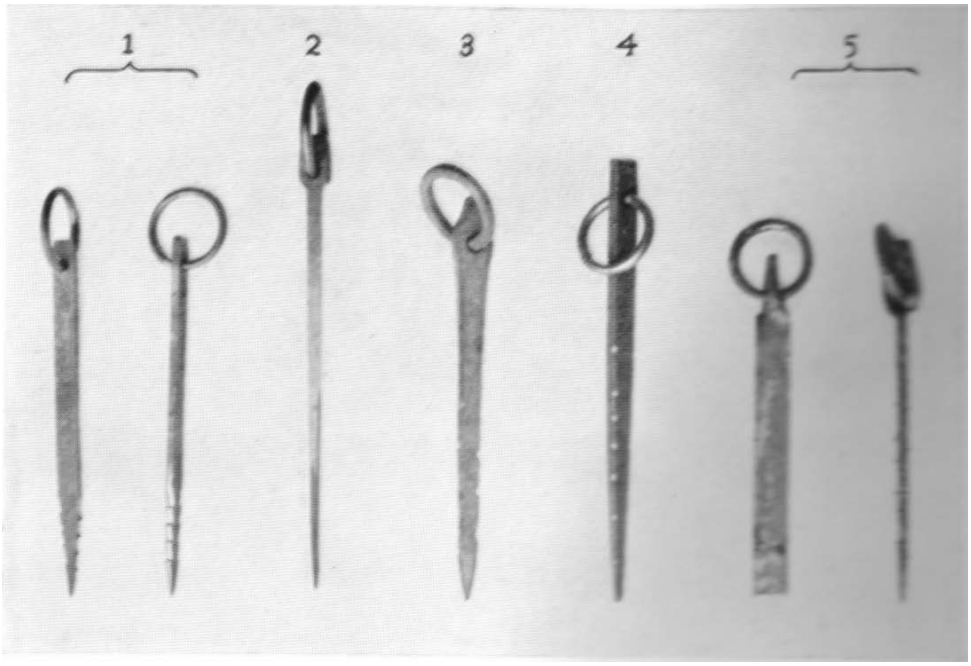


Fig. 5. Ice-Pitons

But, although the fundamental idea of this sling is clearly excellent, the carrying out of the idea has never been perfected. In the first place, the guard-ring at the spike of the axe is clearly bad. There is some evidence that its attachment, or perhaps moisture which persists under it, weakens the wood; one case is known where an axe eventually broke at this place.[12] Certain it is, in any case, that the ring is a great nuisance when one is sounding for crevasses, jamming the axe into hard snow for a belay, or slipping it for carrying through a loop on the rucksack. Substitution of a single nail or round-headed screw for the ring, as often advocated, is an improvement while it lasts (the knocking about on the rocks which an axe receives is hard on such things), but any projection of this sort is still a nuisance, as well as unsightly. Most importantly, no fixed stop, whether ring or screw, really meets the problem. For the sling should be such that it can be adjusted to tautness whatever position the hand takes on the shaft, while cutting; only thus do we get full benefit from it in the ability to relax our fingers between strokes without having the axe slip.

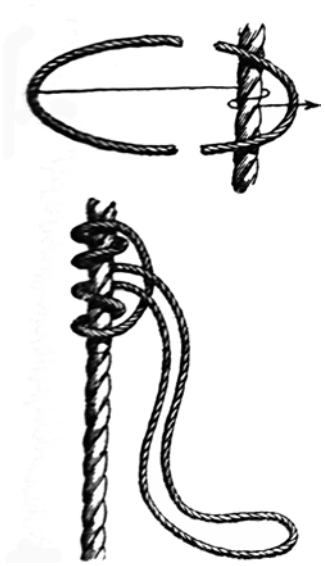


Fig. 6. Prusik Knot

Secondly, the sliding ring has its defects. Since it must be oval it cannot be twisted around on the handle, so that a sling adjusted for the right hand will not serve equally well for the left, nor will one for right-handed cutting with the pick do for similar cutting with the adze. And there is a distinct disadvantage in the ring's ease of movement up and down the shaft. For when, on rocks, the axe is carried suspended from the wrist, with its head up, it will often catch and become up-ended, whereupon it slips down through the sling with a disturbing jolt.

To make the needed improvements in the Fynn-Farrar sling is a good present-day task for the inventiveness of climbers. I venture to suggest an arrangement with which I have been experimenting, though as yet no final claims can be made for it. No rings whatever are used, but a simple loop of rawhide, ¼ in. wide, is attached to the axe-handle by means of a Prusik knot (Fig. 4, No. 1, and Fig. 6). This can easily—but not too easily—be slid up and down, or turned round from one side to the other, if the coils themselves are grasped, and yet, such is the virtue of the Prusik knot, it will hold firm in any position to a pull on the sling along the handle, without the use of any special stopping device.[13] Even on smooth new axe-handles, or under wet conditions, the grip seems to be perfect; whether ice may not sometimes create difficulties I cannot yet say.

The best way to carry the ice-axe on uphill or horizontal rock passages of any length is to slip it like a sword through a small loop of rawhide thong tied into the lower ring where the shoulder strap meets the ruck-sack on the left side. (A similar loop on the right side also is convenient, so

12 See the *Alpine Journal,* Vol. XL (November, 1928), 419. But in this case the band was of leather, and secured by a large number—no doubt a whole circle—of nails. I doubt very much whether the more usual metal ring, merely fixed in place by one small nail, produces any such effect—any more, say, than does the steel ferrule at the spike of the axe. I do indeed know of a somewhat similar case, where an axe fitted with a snow-ring such as is used on ski poles broke at that point, but there a small hole bored directly through the shaft could easily admit moisture.

13 The Prusik knot, peculiar for the properties stated, is a very recent discovery. Thus far it has been applied, in mountaineering, only to the invention of a rig for climbing out of a crevasse. Supposing that a climbing rope is hanging there, two, or better three, slings—two for stirrups and one beneath the shoulders to hold the body erect—are attached to it by Prusik knots and moved upward in turn. (See the *Oesterreichische Alpenzeitung,* December, 1931. 343-352; *Die Alpen,* April, 1932, second part, 103, and October, 1932. second part, 242-244; the *Mountaineering Journal,* December, 1932, 103-104; and *Ski Notes and Queries,* October, 1932, 29-30, and December, 1932, 81).

that the axe can always be carried outside on traverses). It can then be whipped out instantly for use. On rock descents the only satisfactory place for the axe is head-down in the pack.

Ice-pitons (Ger. Eishaken, Fr. pitons a glace, Ital. chiodi da ghiaccio). These analogs of rock pitons, which first made their appearance only a few years ago, have now definitely passed their test for usefulness. They really can be driven into most ice and in proper situations they actually do hold. They provide, for the first time, the chance for real securing methods in ice-climbing (whereas the best that could be done heretofore was to hew a large step, belay over the shoulder, and hope fervently one could retain one's footing and balance under a pull) ; and they often expedite matters much by making possible rope-downs over steep slopes where steps might otherwise have to be cut. Because of their size, weight, and expense, however, and of the time it takes to put them in and—even more—get them out again, it would seem that they must always be used much less lavishly than pitons on rock.

The most used and no doubt the best ice-pitons are long slender spikes of soft steel with pronounced sawteeth up the edges and a ring at the head. Dimensions should be about ¼ by 5/8 in. (6 by 15mm.) in rectangular cross-section near the head, and 7 to 10 in. (18 to 25 cm.) in length of shaft below the ring (Fig. 5, No. 1, two views),[14] the shorter lengths being for use in harder ice. The weight of such a piton is about 5½ oz. Ice-pitons of many other sizes and weights are on the market; in fact, a very heterogeneous collection of them can be picked up among the different outfitters. Most of these varieties, however, are undoubtedly due not to original expert conceptions of what the ice-piton should be, but simply to ignorance. The device is still so new that the general run of manufacturers and dealers know little about it, but, having heard that such a thing is becoming popular, have hastily produced and offered for sale something based on such advice as was handy. Thus No. 2 in Fig. 5, besides being unbarbed, is too slender and fragile, while Nos. 3 and 4 err in the opposite direction. The barbs are very important, as they hold the piton in under regelation. They should be real teeth in the thinner sides, and not mere nicks made up the four edges with a cold chisel. Material should be soft steel, but harder than that used for rock pitons; duraluminum, expensive but light, is not considered to have stood the test.

Grivel of Courmayeur, an ingenious designer, makes a shorter (6 ½ in.) and broader (¾ in.) piton with a chisel cutting edge instead of a point. (Fig. 5, No. 5, two views). This has been highly spoken of. The ring is twisted round into the proper plane, an improvement on No. 1, but the barbs are of little account.

Before an ice-piton is inserted any surface layer of rotten ice must of course be cleared away. The piton is then driven in at an acute angle, slanting away from the direction of pull, and up to the ring. As the ice-axe is a very awkward tool to use for this a piton hammer should be carried, as in rock climbing.[15] If the ice lies too thinly above rock it will split, and the presence of such rock is not always easy to surmise. Once in, the ice-piton in cold enough weather will promptly become fixed fast by regelation. It has then to be chopped out; beware of wrenching at it, if the stance is at all delicate.[16]

14 These are of German manufacture (Schuster, Munich). As in the case of rock pitons, those of French and Swiss make are generally too heavy (e.g. Fig. 5, No. 3).

15 It might be mentioned that a good substitute, procurable anywhere, for the special rock-climbing hammer described in the previous article (C.A.J. 1932, 170, 172-173) is a mechanic's or so-called "ball pein" hammer. This lacks the spike—which however, is the least necessary part and is disliked by some climbers, as making the hammer less comfortable to carry—but it comes in the right size and weight.

16 Miss Jessie M. Whitehead, of the A.C.C., fell to very serious injury on January 1, 1933, when leading a climb up a steep ice gully in the White Mountains. She was pulled off by the fall of the second man on the rope, and his fall was due to loss of balance after the wrenching loose of a frozen-in ice-piton.

Boot-nails. For ice-work the steel Tricouni (Fig. 7) has come to be recognized as definitely superior to the ordinary edge-nail or "clinker." It is sharper and better-gripping at the outset and does not become so dangerously smooth as it wears down; moreover, it is considerably lighter. On rough crystalline rock, as well, it holds splendidly. It is not satisfactory on hard smooth limestone, but neither is any nail, however "soft," for even the "softest" must hold by the unevennesses it catches against, and not by friction proper. For alpine ski-ing the Tricouni is ideal because of its light weight and complete non-interference with the toe-irons.[17]

Fig. 7. Tricouni

To get Tricounis put in properly is however far from easy. The ordinary shoemaker, upon seeing their sturdy prongs, will at once set about boring preliminary holes in the leather. But, as the illustration shows, the prongs are so shaped that they spread when driven in and thus lock the nail securely; if they enter ready-made holes this spreading does not take place. They can be driven in simply, and it should be seen to that this is done. Otherwise half the nails may be lost in the first day's climbing, whereas if they have been put in properly only three or four will come out in a long climbing season. To soften the leather to admit the nails more easily, especially in the heel, the makers advise first soaking the soles for thirty minutes in a tub of water. The two little holes in the plate are for a couple of small ordinary nails, which have the function merely of holding the plate itself in position and add nothing to the security of the nail proper.

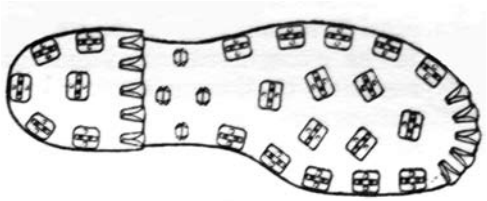


Fig. 8. Nailing System

Fig. 8 shows a nailing system which has proved most serviceable. Around the toe and across the front of the heel are close rows of five edge-nails, as Tricounis in these exposed positions are quite likely to be knocked out. One Tricouni in the center of the heel prevents snow and ice from balling up there. The Tricounis around the edges of the sole and heel are separated from each other by spaces equal to themselves. It is most important that these outside nails be set exactly flush with the edge of the shoe itself, A few ordinary "muggers" under the instep are a help for balancing on logs or rounded rocks.

The disadvantage of Tricounis is that, although of steel, they wear down fairly quickly owing to their thinness ; also, because of their mode of clinching, they cannot be replaced without renewing the whole sole. (Edge-nails, however, can always be put in as substitutes). For this reason a boot nailed in Tricounis is not really advisable where much walking over scree will be necessary. Attempts to meet the objection by using some combination of edge-nails and Tricounis—say the two placed in alternation around the edges—are not generally satisfactory, for the Tricouni is a tall nail, appreciably taller than any of the usual edge-nails, and so will stand out to bear the brunt of the work. The arrangement consisting of edge-nails around the outside and Tricounis in the middle, under the ball of the foot, is especially unsuitable, as the middle is the position of greatest pressure and wear.

17 Tricounis are made in Geneva and best purchased direct from Switzerland (Fritsch & Co., Bahnhofstrasse 63, Zurich; Th. Bjornstad & Co., Schauplatzgasse 11, Berne, etc.), though they can also be secured through the leading English bootmakers. The No. 1 nail (illustrated) is the standard type. No. 2, of the same pattern but smaller, is intended for trail-walking rather than mountaineering. There are also some more elaborate forms—such as a Tricouni edge-nail, and a set of nails for the heel in one piece—but they have no marked advantages and probably few climbers will care to bother with them.

Tent-sack (Ger. *Zeltsack*). Invented several years ago to lessen the dangers of forced bivouacs, this device seems to have proved itself a great success. The claim is made that it almost always affords enough protection to exclude the possibility of freezing, even on spring ski tours, and that it often succeeds in making conditions quite tolerable, especially if a cooking outfit is lighted inside. German and Austrian technical writers are unanimous in demanding that it be made a standard article of the modern mountaineer's equipment, and some climbers, relying upon it, seem almost to plan on spending a night or two out at high altitudes.

The "tent-sack" is nothing more than an envelope or flat rectangular bag of the lightest windproof and waterproof tent material, open along one of the longer sides. That is, the ends are mere edges, and not A-shaped as in a pup tent. The original Zdarsky model had the fatal defect of lacking a window; the Sohm model remedied this; now, in an improved edition, the Zdarsky sack has its window also.[18] The bags come in three sizes: 175 cm. high by 200 cm. long (or about 5¼ x 6 ½ ft.), for 1-2 persons; 175 x 250 cm. (5¼ x 8¼ ft.), for 3-4 persons; and 175 x 300 cm. (5¼ x 9¾ ft.), for 5-6 persons. These sizes are supposed to be roomy enough to take care of one or more additional persons at need. The weight is from 800 to 1200 gms. (1¾ to 2²/₃ lbs.) for the three sizes.

To make one's own tent-sack would be a very simple matter. Practically all that is needed is to procure a suitable material—the same that would be best for a lightweight back-packing tent—and sew and fold it together, in the most economical fashion, into a flat rectangular bag of the desired dimensions, leaving one of the longer sides open. No reinforcements, tapes, or cords of any kind need be attached. The only complication is the window, which is to be placed high in the middle of one side, but models for this are familiar to almost everyone from the construction of various small tents.

To use the tent-sack a party goes into a huddle, with their equipment at their feet, and pull the bag down over their heads. Thereupon they all sit down together and tuck the edges in under them. The sack rests upon their heads and shoulders; two persons facing each other can make it take the form of a tent, with room for a cook-stove between them. It has been suggested that certain reinforcements or other bits of rigging would make it possible to prop the bag up, without injury, on ice-axes or ski poles. The greatest trouble, even with the window, seems to be lack of air (which some parties have appreciated only when matches refused to burn!), and it may be necessary at times, it is said, to throw the bag off for a moment and start in all over again.

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18 Zdarsky sacks are carried by practically all the leading German, Austrian and Swiss dealers. Sohm sacks are obtainable from the maker, Victor Sohm, Bregenz, Austria, and St. Margarethen, Switzerland.

THE SUMMER OF 1894 AROUND LAKE LOUISE

By Yandell Henderson [1]

In the summer of 1933 it was my good fortune again to spend a few days by Lake Louise. I had not been there since 1894 ; but every feature of the region reawoke the memory of some adventure. In that summer, now nearly forty years ago, I was a member of the party that discovered Paradise valley and the valley of the Ten Peaks, surveyed and mapped the lake and the surrounding mountains, and gave many of them names, and without guides crossed passes, ascended peaks, and hunted the white goat. For the most part the story that I have to tell is taken verbatim from the letters that I wrote home that summer. It is but a boy's tale of adventure; and, I shall add only such comments, explanations and names of places as are needed to make the story clear.

There were five in the party. Walter D. Wilcox had graduated from Yale College in 1893 and had spent some weeks of that summer in the Canadian Rockies. It was his enthusiasm that persuaded the three younger members of the party to come. His interests were in photography, in which he had great skill and artistic taste, and in geology, particularly in the question whether Lake Louise had been formed by the glacier. He wished to map the lake and its surrounding mountains and to make some ascents of some of the then virgin peaks.

Samuel E. S. Allen had graduated from Yale College in 1894. He also had been at Lake Louise in the previous summer. His chief interests were in ascents and in philology. He utilized every opportunity to learn words from the Stoney Indians of this region and from these words he developed some of the names that we gave to peaks, particularly that of Mount Hungabee, the "savage peak."

The other members of the party were of an age between the junior and senior years at Yale. They were George H. Warrington, Louis F. Frissell and myself. Warrington's chief interests in life were literature and law and secondarily chemistry and geology. He read more and took less physical exercise than any other man that I ever knew in college. A course in geology had excited his interest to see some of the cross-sections of the earth's crust that the sheer cliffs of the Rockies present. Frissell was interested in geography. He wished for adventures and was by nature wholly free from fear of their hazards.

My chief interest in going was, also for adventure. I had made a boast to a classmate, backed by a bet of five dollars, that entirely by my own efforts I would bring back the skin of one of the—then almost mythical— white goats of the Rockies. My previous experience was confined to quail shooting; I had never handled a rifle. Fortunately I had been raised in Kentucky and was familiar with horses.

It is doubtful whether any five men ever went into a pathless wilderness knowing less than we did of the supremely important subject of camp cooking.

As regards mountaineering, Wilcox and Allen may each have made one or two conventional ascents with guides in Switzerland—I do not now remember. For the rest of us the pages of the Badminton volume on "Mountaineering," read after we reached Lake Louise, were our only source of information. We read up the night before and next morning applied our information in practice on mountains that are in some respects among the most dangerous in the world. We had hobnailed boots, ropes and ice-axes. We had also that spirit of adventure that gets boys into tight places and (generally) gets them out again.

1 Professor of Applied Physiology, Yale University, New Haven, Conn.

The following are passages from my letters home with their dates:

AT THE CHALET AT LAKE LOUISE

Letter of July 11, 1894

We made a very early start yesterday morning from Banff. As we came up the wide valley we had some grand views of the towering snowcapped peaks. Seen through rents in the masses of cumulus with the sun just gilding their tops they were wonderful.

On reaching the water tank and tiny house which constitute Laggan, the station for Lake Louise, we got off the train to find Astley awaiting us. He is a Cornish man, six feet two, lanky, deep-voiced, and clad in a wide sombrero knickerbockers and rough stockings. We left him to bring up our luggage in a cart and walked three miles up a rough road through the sweet-smelling woods of spruce, fir and pine. A big brook ran past us all the way, making a tremendous racket; for in the three miles we climbed one thousand feet. At the top we came upon the Chalet with the lake stretching away in front of it between two mountains, one covered with forest and the other with enormous cliffs of bare rock. At the far end of the lake, and apparently reaching almost into its waters, but really a mile beyond, is the lower end of an enormous glacier. Three miles back of it, or five miles from the Chalet, rises a superb, great mountain, Mount Victoria, covered with snow and hanging glaciers.

The Chalet is an oblong frame building thirty-five feet across the front and fifty feet deep with one big sitting-room or hall extending clear across the front and two bedrooms and a kitchen back of it. Upstairs are half a dozen little rooms under a long sloping roof. The walls are ceiled in light yellow pine. The big room facing the lake and the mountain, and looking out to the southwest, is sunny by day and cheerful by night when the big logs crackle and blaze in the wide brick fireplace.

On the first day after our arrival Wilcox took us for a hard tramp up one of the lower mountains. The next day we were very busy building a line of cairns of flat rocks every fifty feet for two hundred yards in the shallow water, along the shore of the lake, so as to lay off an accurately measured base for our surveying. Next day we had another walk up the lake and across the foot of the glacier, very fatiguing. The furniture for the Chalet has not come as yet, so I sleep in my blanket bag on a mattress on the floor. When the furniture does come I shall have one of the little rooms upstairs. There is a cook here and the food is plain, good and abundant, so we shall make the Chalet our headquarters. Mr. Astley has given us a rate of $12 a week including a pony and boat. Neither Allen nor Warrington has come as yet; but I suppose they will drift in soon.

A LITTLE TUMBLE

Letter of July 15

This place improves steadily on acquaintance. I am beginning to get into climbing trim and to enjoy it. My rifle, a forty-five ninety half-magazine Winchester, is fine, balanced much like a shotgun. Frissell got a little tumble on Thursday (July 12) and we thought for awhile he might have cracked his hip. But it proved to be only a muscle injury and in a week or two he will be all right. I made him a crutch this morning and he hobbles around cheerfully.

(This is what I wrote home on the 15th of July. But I also wrote letters, which I did not send off until after I had left Lake Louise, in which I gave a fuller account of Frissell's "little tumble" as follows:)

This is what happened on the 12th of July: Wilcox was anxious to get us accustomed to ice and snow, so we went up on the glacier early that morning. We left the Chalet at seven-thirty,

walked to the other end of the lake and up to the foot of the glacier over very rough moraine. Then we roped and went on over the ice with Wilcox ahead prodding the snow-bridges across the crevasses, until we reached a grand mountain which we call Glacier Peak (Mount Lefroy) from its being almost wholly surrounded by ice. If we have time later on we will climb this mountain. Wilcox has studied out a route which, he believes, would be quite practicable and easy once the 800-foot precipice around its bottom is surmounted. A couloir of snow piled up in a big crack more than a hundred feet wide in this precipice seemed to offer possibilities. The slope of the snow in the couloir varies from 30 to 40 degrees. In several places there are schrunds, big cigar-shaped crevasses eight or ten feet wide.

Up this snow-slope we went, Wilcox leading and cutting or kicking out steps around the schrunds. I was next on the rope about fifteen feet down and Frissell, was last. We had only two ice-axes with us; Wilcox had one and Frissell the other. I did not realize that on steep snow or ice one should lean away from the slope, but this is not easy when one has no axe or stock. Consequently the steps were constantly giving away under me. Once I slid several feet, my hands and toes digging at the snow, until I was stopped by the rope. I felt as I have when I was afraid I would have to make a speech, and urged that we get onto something solid. So when we were about 600 feet up we took to the, rocks beside the couloir where the firm handholds gave me more confidence. Our way now was from one ledge to another; and sometimes, when the next ledge was higher than we could reach, we went again on the snow. After one of these detours onto the snow we came to a narrow ledge that, as we followed it round the face of the cliff to the right, reached a width of about five feet. The next ledge was seven feet higher. Wilcox climbed up and warned me, as I followed, not to touch a loose rock some three feet long and two feet thick—we met it again later at the foot of the cliff and I measured it. It was lying now just on the edge. Then he went on along that ledge to the left and I followed keeping the rope taut between us. When I had reached a point about eight feet from the boulder, and where the ledge was only about two feet wide, and was starting to climb to the next ledge, I heard something slipping and looking round saw Frissell and the boulder sliding off the ledge together. Fortunately I had time to turn and get my feet braced and the slack of the rope in hand, well out from the loop around my own body. Then the jerk came as Frissell struck on the lower ledge with a good part of his six feet two inches well over the edge. We are not entirely in agreement as to all details; but at any rate the boulder had no rope to it and it landed 600 feet below, leaving two holes in the snow-slope 200 feet apart each as big as an ordinary grave to mark its course. Although I took no notice of it at the time, as I had much else to think of, I found next day that, owing to the way I caught the rope in my haste, the jerk had burnt the skin from the inside of the first two fingers and the back of the third and little finger of my right hand.

Meanwhile Frissell was lying on the lower ledge apparently in great pain, his head bleeding and his eyes shut, while I continued to haul on the rope, fearful lest he should roll off. Then Wilcox from the upper ledge called to me to go down to him while he followed, and some snow soon stopped the bleeding. We stretched him out, laying his head on my hat—his own was later found far below. He urged us to leave him and go on up the mountain, but of course we refused;1 and in the course of half an hour we were able to lift him to his feet, although in spite of every effort he was unable to walk. Throughout he bore what must have been great pain with the utmost courage.

Strange as it seems my nervousness was entirely gone. Except for sympathy for Frissell I could have laughed as I looked almost straight down on the glacier and wondered how on earth we would ever get there. Wilcox showed excellent generalship, but the tone of his orders was far

Four Members Of The Party. *Photo Walter D. Wilcox*

W.D. Wilcox, G.H. Warrington, L.F. Frissell, Y. Henderson

The Chalet At Lake Louise In 1894. *Photo Walter D. Wilcox*

The Cascade Stream. *Photo Walter D. Wilcox*

from polite. With much helping we got Frissell down a few ledges. I unroped; and Wilcox went out on the snow-slope, anchored himself deep in the snow with his axe and feet, and lowered Frissell the full length of the sixty-foot rope. Then I slid down the rope and anchored and held Frissell. While Wilcox came down, I took in the slack of the rope so as to stop him if he slid past me. We did this again and again, sliding around the schrunds until we reached the foot of the couloir. There we placed Frissell on a little pile of rock, and I put on the rope again and accompanied Wilcox down over the worst part of the glacier. From there he went on toward the Chalet, and I returned to Frissell, treading as lightly as possible over the snow-bridges now weakened by the sun.

The accident happened about midday. At two o'clock we reached the glacier, our clothes soaked with melted snow and until half-past six Frissell and I sat there on the ice or on a little pile of stones to keep us off the ice, huddling close together in the effort to keep warm as the puddles froze on the glacier around us. When we went on the glacier in the morning, we had left our coats and sweaters behind us. Every few minutes an avalanche came down from one of the grand peaks around us and the views were glorious, but our eyes were strained toward the Chalet at the other end of the smiling lake four miles away. There was a fair chance of Wilcox going into a crevasse, and we determined that unless help came two hours before dark we would run the risk of a bridge giving way under our combined weight. Meanwhile we sang all the Yale songs that we could remember.

At half-past six Astley, Joe Savage the cook, William the talking Indian, and stoical Tom Chiniky, heir to the chieftainship of the Stoneys, reached us. They had brought two poles and a piece of canvas, and in this extemporized litter they carried, or rather slid, Frissell down over the glacier. Once William remarked to Astley, "He dead, I think." Generally an Indian will not go on ice, yet on that night they walked bridges with perfect coolness even after one gave way and Chiniky only saved himself by holding onto the pole of the litter. The labour of carrying Frissell over the glacier and moraine was enormous, yet Chiniky never murmured though his moccasins were in rags. After leaving the ice they had to wade some distance down the glacial stream and here Chiniky, to save the pieces of blanket which served him for breeches, took them off and tied them round his neck and waded naked to the hips through water in places several feet deep and only a degree or two above freezing. Fortunately two section hands whom Wilcox sent up from the station met them two miles above the head of the lake. It was just midnight as they reached the Chalet. Dr. Brett came up from Banff on a handcar and pronounced Frissell's hurt only a torn muscle. At half-past two in the morning I saddled a horse for him to ride back to Laggan. It was a long and eventful day.

FIRST SIGHT OF GOATS

Letter of July 15 continued

The first day we were here, late in the afternoon, the two Indians whom Mr. Astley employs came up to the Chalet and announced, "Me see goat." Then followed long explanations as to where they were, such as "big mountain; little snowdown; big rock; white snow" and eager pointings. But as this description applied to every spot within sight, our eyes and glasses seemed of no use at all. Indeed William, one of the Indians, told Wilcox, "You no see goat. You no got eyes." At last away up on what seemed to me a perfectly vertical cliff of what we now call Goat Mountain (Fairview) I made out a moving point not bigger than a pinhead, and looking through my glasses I saw a herd of five goats feeding along a narrow ledge. I was for going after them the next day. But William said, "No make good hay now. September good hay," and rubbed and plucked at his own stomach

and sides to show that he meant that they are shedding their hair.

These Indians are queer chaps. They belong to the tribe of Stoneys who number about one thousand and are quite intelligent and civilized. The other Indian is distinctly intelligent looking, stoical, silent, and is called Tom Chiniky. He is one of the chiefs of the tribe and saws wood for Mr., Astley with William to help him. But I have noticed that when they are walking together they don't walk abreast, but the chief goes first and William about six feet behind stepping exactly in his tracks and answering the occasional questions, which the chief puts without turning his head, quite humbly. That is Indian etiquette.

This morning I had a plunge in the lake. The temperature of the water is 52 degrees. I have also tried fishing for the trout which we see jumping in the lake, but they don't seem to be deceived into thinking my fly real. The mosquitoes here are something frightful; with my two hands on Wilcox's back the other day I killed twenty-two at a stroke. The bulldog flies—big horseflies three-quarters of an inch long—have just commenced, but they are so big and clumsy that it is easy to dodge them. They saw a piece right out, when they get a chance; and leave a black bruise with a bloody spot in the middle. There are also plenty of wasps; but they are our friends. They attack and decapitate the bulldog flies.

THE SADDLE, THE BEEHIVE, AND A SWIM

Letter of July 19

I have been helping Wilcox in sounding the lake. It is 230 feet deep and of U shape, not V shape. So it was certainly formed by the glacier. Yesterday Wilcox was taking the bearings of the peaks from the two ends of the base line, so I went off with my rifle and climbed up to a beautiful pass or alp between two mountain tops which I have named the "Saddle." Just before I reached it there was a fool hen sitting on a rock, so I practiced three or four shots—at its head of course—and it never budged. Then I walked up quite close and found a dozen little ones about the size of sparrows, but beautifully speckled, running about. After that of course I left them alone. The woods are fearfully thick with underbrush and fallen trees. Astley has decided to cut a trail up to the Saddle and in fact has already started the Indians on it. The top of Goat Mountain (Fairview) above the Saddle will be a good point from which to take bearings for the survey.

On the other side of Lake Louise about 700 feet up is a beautiful little lake with no apparent outlet; and 500 feet higher still, and emptying into it by a fine series of cascades, is a third lake, Lake Agnes, in a splendid amphitheatre of cliffs. Around the shores are piles of big rocks where marmots live; and one constantly hears their sharp loud whistle but rarely gets a sight of them. Above Lake Agnes is an odd round peak we call the Beehive.

On these climbs I generally take a big piece of red cloth along and either erect a pole or build a cairn of rocks on a summit or other prominent point to assist Wilcox in his survey. I have followed a number of goat tracks and see frequent signs of them, but as yet not the goats themselves. But I am learning the passes by which they get from one valley to another and hope that later on this knowledge may be useful.

The thermometer here rises to about 70 on the warmest days and often falls to 32 at night. The weather is beautiful, but marred by a heavy haze of smoke from big forest fires a hundred miles west of here. My two rough towels have come in well in my two short and vigorous plunges in the lake. If ever there was refreshing water, this is it. If you were to drop a dead man in, I believe he would wriggle for the boat. Perhaps Vaseline plays the greatest part in my life just now; for what with mosquito bites and sunburn I rub it on face, neck, ears, hands, blistered feet, shoes, guns, in

fact every thing. My outfit is wearing well except the leggings which are already half gone. My belt has already shrunk two holes in spite of an enormous appetite. I do not shave, my hair is long, and there is no barber. In fact I am enough to scare a bear if I only had the good fortune to meet one.

The other day we found that the fifteen-year-old son of William the Indian had a splinter in his eye, so we all chipped in and sent him down to Banff to Dr. Brett. One eye appeared to be gone and the other had begun to be affected. Fortunately Dr. Brett thinks he can save both eyes. A few days ago Sir William Van Horne, president of the Canadian Pacific Railway, and a party of railroad officials were here. He is the most powerful man in Canada.

Letter of July 25

This morning a tourist who had stopped over here for a day went up to Lake Agnes and on his return claimed that he saw bear tracks in the snow. I went up afterward but couldn't find them. I comforted myself by shooting a marmot through the head at seventy yards. They are queer animals, gray on the back and brown underneath, with very short legs, padded feet, a bushy tail like a squirrel, and big teeth. Mine weighed about nine pounds I should say and made a large but tasteless stew. Yesterday the smoke from the fires west of here became so thick, rolling over the mountains, that it shut out the sun and dropped fine white ashes over everything. Luckily a storm came this morning and now late in the afternoon the clouds are breaking away, leaving the air beautifully clear and the peaks dazzling white with fresh snow.

Allen arrives tomorrow morning and Warrington the day after. We are going to give them a game dinner of trout, fool liens and a marmot, and possibly a duck, if a flock stops over the lake. When the ducks rise from the lake they fly round and round looking for an opening- through the mountains, each circle a little higher than before until they can see over the trees at the northeast end of the lake. Then they vanish down the Bow valley. Wilcox and I have been looking for glacial scratches up on the cliffs on each side of the lake. He believes that the glacier once extended down to where the Chalet now stands. For thousands of years it dumped rocks and sand and clay, until it had built a sort of dam a mile in length across the deep crack or gorge between the mountains which it had itself chiseled out. Then it suddenly retired leaving the basin which the lake now occupies. I have been reading Dana's Geology and shall now have some observations of my own to build on.

THE ASCENT OF CASTLE CRAGS

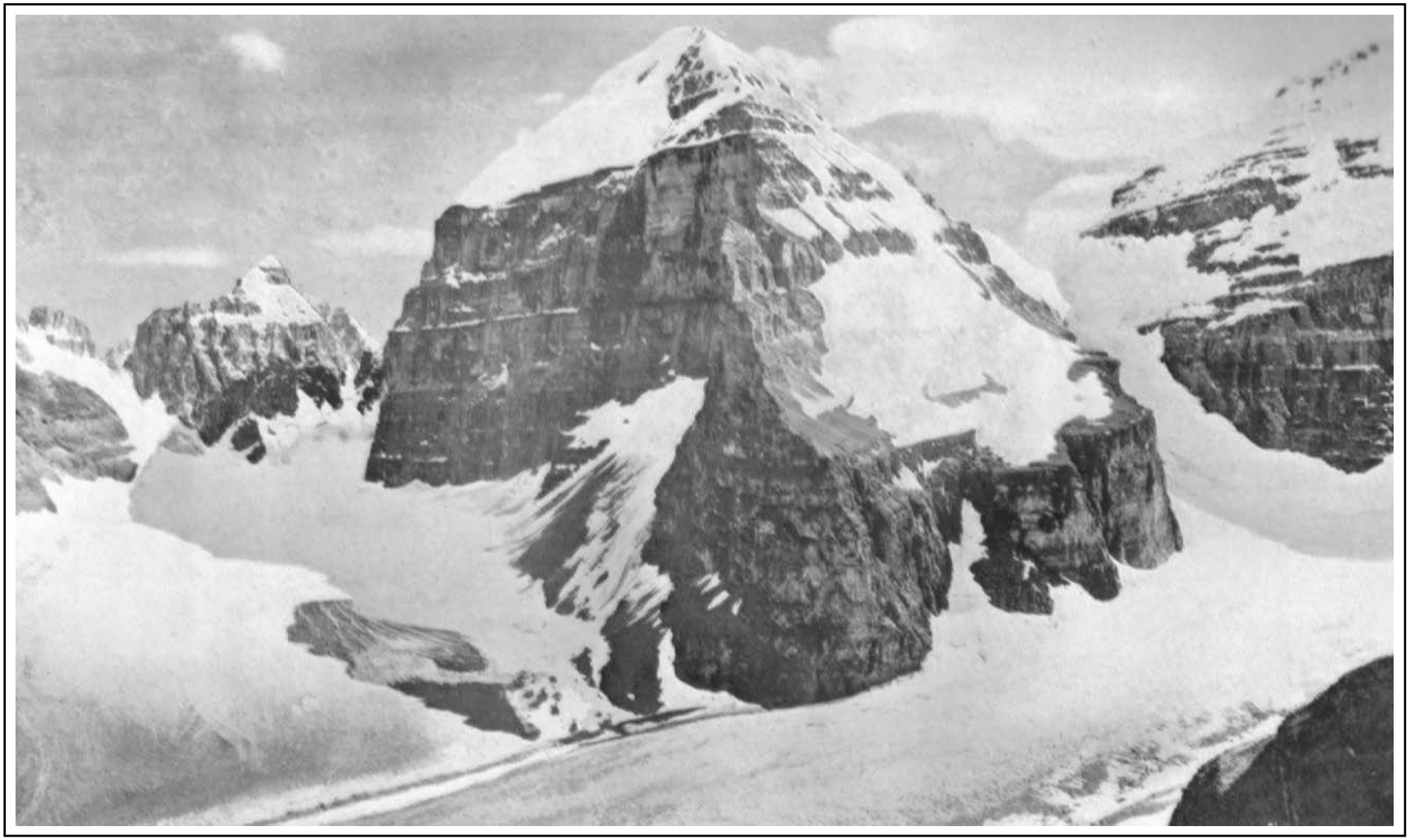
From a later account

In our search for glacial scratches high on the walls of the Lake Louise valley, Wilcox and I climbed one of the needles or pinnacles of what we called Castle Crags. These wild crags form the sawtooth upper edge of a ridge that rises some 3000 feet above the level of the lake on the southeast side of the valley between the upper end of the lake and the lower end of the glacier. Most of the wall itself is covered with ledges rising steeply one above another. But breaking through these ledges are gulleys or avalanche tracks, some wide, some narrow, filled with broken rocks and in places with long slopes of snow.

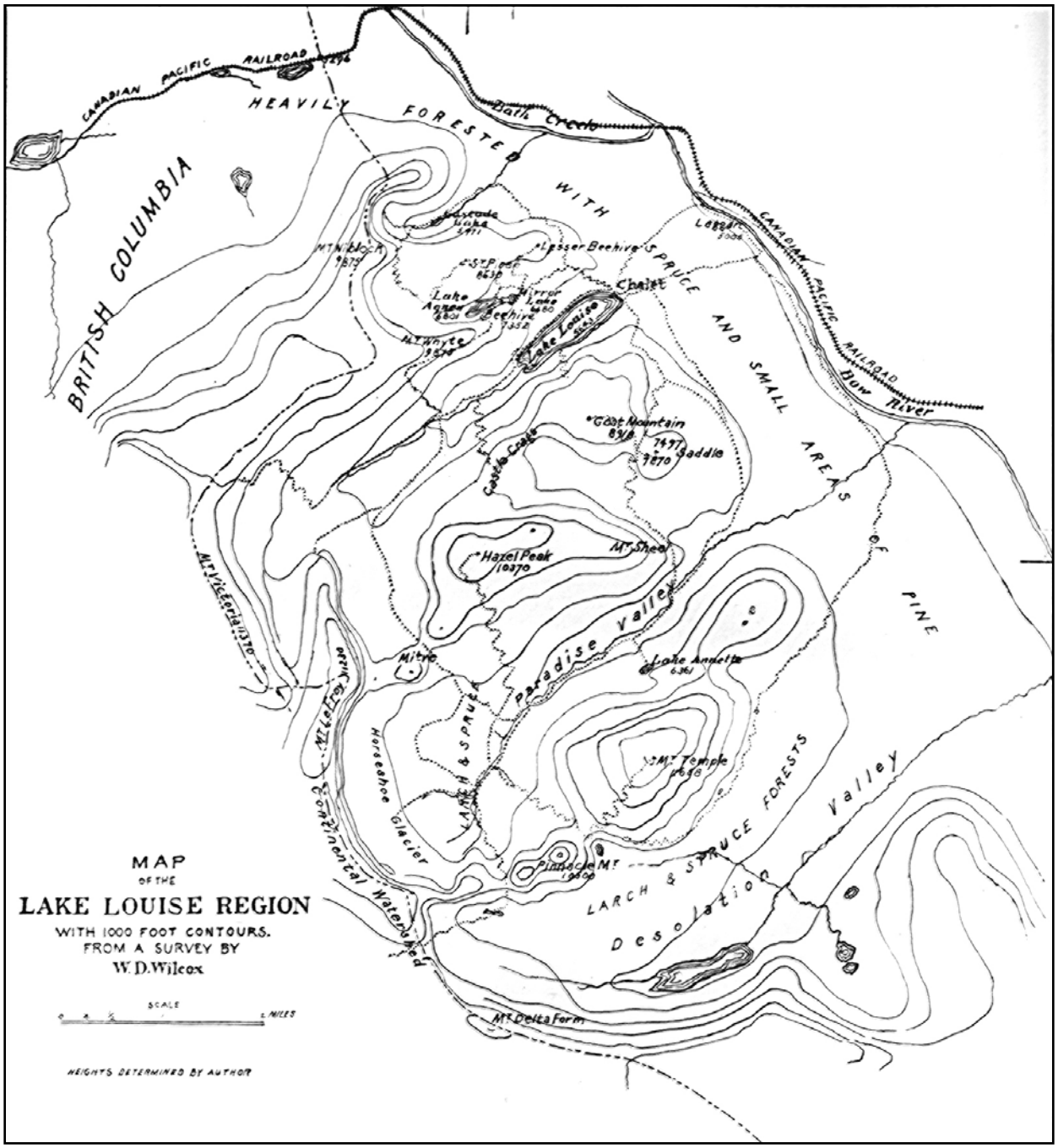
One morning after a rather long pull up the biggest of these gulleys first over broken rocks and then up a long snow-slope, we reached the base of one of the needles or crags that we had selected for our climb. It was some sixty feet high and almost hanging over the edge of the tremendous precipice on the other side. We used no rope and at first found no line of ascent up

Mitre Pass and Mitre

Abbot Pass



Mt. Lefroy And Victoria Glacier.
Photo Detroit Photographic Company


CANADIAN PACIFIC RAILROAD
HEAVILY FORESTED WITH SPRUCE AND SMALL AREAS of PINE
BRITISH COLUMBIA
Bath Creek
Lake Louise
Chalet
Lesser Beehive
Mirror Lake
Lake Agnes
Beehive
Mt. White
Mt. Niblock
Goat Mountain
Saddle
Hazel Peak
10370
Mt. Sheol
Mt. Victoria
Mitre
Paradise Valley
Lake Annette
Mt. Temple
Horseshoe Glacier
McArthur Creek
Continental Watershed
Pinnacle Mt.
LARCH & SPRUCE FORESTS
Desolation Valley
Mt. Delta Form
Bow River
CANADIAN PACIFIC RAILROAD
MAP
OF THE
LAKE LOUISE REGION
WITH 1000 FOOT CONTOURS.
FROM A SURVEY BY
W. D. Wilcox
SCALE
MILES
HEIGHTS DETERMINED BY AUTHOR

the sheer sides of the crag, until Wilcox discovered a crack that looked practicable. Up this he wriggled using hands and elbows, knees and toes; and I after him, carefully keeping out of the way of any rock that he might dislodge.

Near the top he stopped to investigate a suspicious crack, and called down to me to crouch under a ledge while he tested a huge mass that looked suspiciously loose. It was well that he did; for one vigorous shove with his feet sent it off: a mass that was at least six feet square and ten feet high. It turned over and plunged past my sheltering ledge; and then went thundering down the slope 3000 feet into the valley.

When the many echoes had died away, we scrambled to the top and found a nearly level platform some ten feet wide and several times as long. By the aneroid barometer its altitude is 8700 feet, or a little over 3000 feet above the lake. On the far side we looked straight down hundreds of feet into the gorge between Hazel Peak (Aberdeen) and Goat Mountain (Fairview). To our right and close at hand was the great ice-fall that sweeps from the summit between two peaks down 3000 feet into the gorge.

On our way down Wilcox made a fine glissade down the long snow-slope in the big gulley, while I followed more slowly, developing experience, punctured with some tumbles, in this most joyous exercise of the mountains. On the crag the air was penetratingly cold; in the valley it was so warm that we took shelter in the shade to munch our sandwiches. Then we returned to the Chalet and had a second lunch.

THE CASCADE STREAM AND VALLEY

Letter of July 25 continued

Allen and Warrington have come and we are a jolly party around the fire at night. We have ordered a small keg of beer, or really ale, so that when we get back from long tramps we can have a glass for dinner without breaking ourselves. Yesterday Wilcox, Allen and I went off for an all-day tramp. We followed the trail up toward Lake Agnes until the woods became thinner and then followed around a bluff first through burnt forest, and the then alive one where the underbrush was so thick that a stump lying in the right direction was as welcome as an asphalt pavement. We crossed several spurs of the mountain (Mount St. Piran) and after a couple of hours came suddenly on a narrow gorge down which tumbled a beautiful mountain torrent. We had lunch at a point with a fine view of the Bow valley below us and the brook above coming down for fully half a mile in a succession of thirty-foot cascades.

After a rest we went on up, climbing over enormous boulders with a thick padding of moss, until we came out on the shore of a tiny lake in an upland valley. The water was so clear and still that every pebble on the bottom was visible and the grassy lawns on each side were bright with flowers and interspersed with soft green tamarack trees. The valley is perhaps a quarter of a mile wide with bare rock cliffs rising hundreds of feet on each side. While the other two were taking pictures, I went on up the valley for half a mile and found the pass we were looking for. It is between the mountain that we had come around and the next one to the south. The latter, Mount Niblock, rises about 4000 feet higher than Lake Louise and is precipitous on this side. It stands just at the head of Lake Agnes. We mean to ascend Niblock and wish to learn whether it could be climbed from this side, whether our little valley was a good place to camp, and whether the pass was practicable. In these objects we were very successful for the pass is only 900 feet above Lake Agnes which is 1200 feet above Lake Louise. On the Lake Agnes side the pass is a steep slope of grass and low bushes. On the side of Cascade lake, as we have named it, there is an easy snow-

slope.

As regards snow-slopes I was pretty nervous the first time I was on one, but I have found that they are far easier and safer than grass or rock. You either kick out steps or dig or cut them with the axe. In descending, providing there are no schrunds and the bottom is all right, you glissade, that is, you hold your legs stiff with the toes bent down and slide. You check your speed by digging your heels or axe into the snow. It is great sport. The first time I tried it my feet were continually sliding out from under me, but in snow a fall doesn't hurt as it does on rocks; it only makes you wet, and in this air you can't take cold.

Tomorrow we get up the big glacier to have a look at one of the snow peaks at its upper end. The moraine at the foot is enormous: dirt, small rocks and boulders twenty feet thick piled in the wildest confusion with a big milky stream breaking out of it. We go roped together about fifteen feet apart. When we come to a crevasse the first man finds a place where it is bridged with snow. He pokes the haft of his axe into it to find out whether it is firm and then crosses, the next man keeping the rope taut meanwhile.

THE DISCOVERY OF PARADISE VALLEY

Letter of August 3

On Monday (July 30) Wilcox, Allen and I took Warrington out "just for a little walk to show him the mountains." He had no previous experience of them. We left the Chalet at eight o'clock and went up the southeast branch of the glacier to its head up among the big peaks. Of course we used the rope, keeping it taut between us; and the need for it soon appeared, for as we were crossing the neve, or snowfield on top of the glacier, Warrington who was third on the rope suddenly disappeared to his armpits. He had broken through a bridge into a crevasse. Wilcox and I pulled him out without difficulty, however; and we went on up to the foot of a big snow and ice slope, which seemed to lead up to a pass between two very sharp rock peaks. The peak to our right we called the "Mitre" from its shape. Its precipices are continually swept by falling rocks.

Up the snow and ice-slope we climbed, Allen leading and cutting steps as we went, for in places it is quite steep. It is wonderful how solid such steps are as long as you stand up straight, instead of leaning toward the slope as a beginner wants to do. Your axe gives you a good hold to steady yourself. Sometimes our way along the lower lip of a long crevasse about ten feet wide that reached down into the darkness. But as the lip was easily wide enough to walk on with nothing worse than a slope on one side and a hole on the other, I found it nothing like so trying to one's balance as a bridge of a nine inch log across, and several feet above, one of the roaring mountain brooks hereabouts. We were over two hours in climbing the 1200 or 1500 feet up this pass. I was second on the rope and kept it taut in case Allen should slip. This forced me to keep quite still, and one of my toes was frostbitten.

Near the top we stopped on some stones to eat our sandwiches; all of us rather cold and miserable. Then with Wilcox leading we moved quickly to the summit of the pass and looked over; and there burst upon us the most beautiful view I have yet looked upon. Far below us was a circular valley a mile or two in diameter, its bottom covered with green meadows dotted with tamarack trees and crossed by sparkling brooks, while on every side towered wild fantastic peaks each wholly unlike the others in shape but all thoroughly characteristic of the Rockies. The sheer walls of bare rock rise two or three thousand feet to where a stratum of softer rock begins and from there on up to the peak there is often a single white cap of ice. Across the head of the valley is a big horseshoe-shaped glacier. As we are the first to surmount this pass and to see this valley we built

a cairn and named our valley Paradise valley.

On the side of the pass leading down into the valley there is a snow-slope which curves down from about thirty degrees near the top until it runs off nearly level at the bottom a quarter of a mile or more below. It looked safe and easy; but we decided it would be better to keep on the rope, as Warrington was new to the business. We started merrily down, but had not gone far when Warrington, who was third, tripped, jerked Allen, who was last, off his feet, and with Warrington on his face and Allen on top of him they slid down past me and knocked Wilcox down. The jerk on the rope took me off my feet also; but Wilcox and I dug heels and axes into the snow and after sliding some distance we all came to a stop. Then we sat down and laughed until we could hardly stand. It certainly was the funniest thing I was ever in. From that point on down we had no more mishaps.

In the valley we found a beautiful waterfall in a stream which Wilcox and I followed on down several miles. Near its junction with the Bow river we cut across through the forest to the Chalet which we reached at eight o'clock. We had been walking twelve hours. Meanwhile Allen and Warrington had lagged more and more, so that when night fell at nine o'clock they were still several miles out. They built a fire, and as the woods are extremely inflammable at this season, they had to keep it very small and blow at it with bad effects on their eyes. The thermometer fell to 45 degrees during the night and they had only light underwear and thin coats. When they turned up at the Chalet next morning they were a stiff and sleepy pair, but took everything in good spirit, including our jokes on their "love of the woods."

Yesterday everyone else was either busy or tired so I went alone over into Cascade valley. After eating my sandwich by the lake I took a nap and then waited until about four o'clock, the time when the ptarmigan come down from the upper slopes. Then inside of fifteen minutes I shot four—all that I wanted—out of perhaps three dozen that I saw. They are a kind of grouse with dark meat but delicious. Their plumage is mottled brownish-gray and white. In winter they are snow white all over. They are so tame that you have to throw rocks at them to make them fly before you shoot.

Wilcox is getting his mapping and photographic apparatus ready and we are all going over into Paradise valley to camp on Monday. Allen and I are going ahead tomorrow if the weather is favourable. We will get the tents set up, build at lean-to and a fireplace and get everything ready for the others when they come over. We will take a couple of Indians and two pack-horses and follow a trail which Wilcox and' I have blazed through the woods and muskegs almost to the entrance of the valley.

THE CAMP IN PARADISE VALLEY

Letter of August 8

The letters from home reached me the night before last in camp in Paradise valley back in the mountains. They were brought out there to me by Wilcox and Frissell and were read in intervals between showers by the light of the camp fire. Golden tablets from Heaven would not have been more welcome than were those letters from home. This is what we have been doing.

Saturday morning Allen and I put a tent, sleeping bags and some provisions on a pack-horse and with an Indian boy to lead him we started along the trail through the forest that Wilcox and I had blazed a day or two ago to the entrance of Paradise valley, under the tremendous crag that we have named "Sheol." Another young Indian with a horse and more provisions was to start after us in an hour or two. We left the Chalet at ten o'clock and picked our way through brush and

over fallen trees—for the trail is not a path, but only a series of blazes—to the river which drains the valley. I scared up a fool hen on the way that lit in a tree and our young Indian hit it in the head with a stone. It fell into my hands and thence into the provision bag. We had lunch on the bank of the river and then turned up along the stream. It is glacial water, milky white, from fifteen to forty feet wide and comes roaring and boiling down so swiftly that a pole driven into it with all your might is carried away before reaching bottom. To cross it on a fallen tree is a ticklish business.

Sometimes we had to make our way through fallen timber a little back from the shore, breaking branches, avoiding passages too narrow for the pack, and jumping the horse over stumps. Once the horse put his foot into a hole and, began to rear and flounder. I came to the Indian's aid and was nearly pitched into the river. Luckily at that moment the saddle, pack and all, slid over his hind legs to the ground and the horse became quiet.

At five o'clock we were still some distance from the upper valley, so we set up our tent on two ice-axes in a little open space, built a fire and I broiled some bacon and toasted some cheese. The second Indian joined us there; and Allen, who has studied philology and Sanscrit under Whitney, spent the time until full darkness in getting the sound and meaning in the Indian language called Waesgabee, with which we have named some of the mountains. One of these names is Hungabee, for the peak at the head of Paradise valley. Then we filled the tent with boughs, got into our sleeping bags, gave each of the Indians a blanket and slept the sleep of the weary until daybreak. I cooked more bacon and cheese for breakfast when our savages announced, "No good eat," struck for more pay, and that being refused started in Indian file down the valley. So I tied on the packs, and each leading a horse Allen and I went I on. We had several mishaps, one on a steep slope above the river where one of the horses, not liking his load rolled down hill nearly into the water, until I fell on his head and held him while Allen undid the pack.

We reached the valley about eleven o'clock, and after selecting a dry and grassy spot near a beautiful spring on the southeast side of the valley, we set up the tent, built a fireplace, and put some rice, beans and bacon on to boil while I cleaned the fool hen and toasted it on a stick. As we were finishing dinner we discovered that one horse had escaped, but Allen finally caught him a mile down the valley with his bridle tangled in a tree. I was off in another direction and came across fresh goat tracks and a small animal that I thought at first in the distance was a bear cub, but that proved to be a big porcupine.

SENTINEL PASS AND DESOLATION VALLEY

Next morning Allen and I set off to explore. We went up a gorge between the mountains, to the east and then up a very bad slope of loose rocks. Above us were enormous aiguilles. One must be over 500 feet high and barely a hundred feet through at the base. At the head of the gorge we found a pass (Sentinel pass) which we surmounted by an hour's climbing up snow and scree, loose rocks, which started sliding so easily that we had often to run sideways to avoid being carried down. From the top we looked down into a wild valley that we now call "Desolation valley" (Valley of Ten Peaks) bounded on the further side by what Allen calls the "Unnamed range" because it is represented by a blank space on the map. It is a wall of sheer rock some 2000 feet high and several miles long without a break. Its top is jagged with sharp rock and snow peaks, and at its foot is a big glacier which half fills the valley and supplies water to many little lakes among the enormous rock piles of old moraine. The water in these lakes from a distance looked jet black. With dark storm clouds drifting overhead and snow falling on the peaks it was an awe inspiring sight.

We went down into this valley for lunch, finding many goat tracks in the snow, but as usual the goats themselves kept out of sight. Once we found where a bear had recently crossed a patch of

snow. We went quite a way up this valley and then climbed over another pass (Wastach pass) back into Paradise valley. It was very steep in places, but we got up through a gulley that was almost a chimney. We had barely reached the summit and started down toward camp when a fierce rain storm broke upon us. Luckily the slope on that side was fairly easy with many nice snow patches. One big patch had a narrow place near the middle where it passed between two rocks and was rather steep and icy. As I was going through there on the run my feet shot, from under me and away I slid for quite a distance, but stopped quite comfortably in soft snow below. In such tumbles a twelve-pound rifle on one's back is something of a handicap. But I like snow better every time I try it. A slip on rocks is worse than a fall on snow, for snow is generally as soft as a feather bed. If you keep your head and your axe, stopping is easy even without the additional safeguard of the rope. Of course ice-slopes are different; but we avoid them when possible. Indeed the way these mountains are built, steep ice-slopes are chiefly confined to the hanging glaciers up toward the summits of the higher peaks. I am not particularly keen on doing peaks, passes are more interesting, and I most want a goat.

We reached the tent wet to the skin by rain that was almost snow. So we took off everything, rubbed down with a rough towel and I put on a dry undershirt and sweater, the only extra clothes I had. Then we got into our sleeping-bags; and seated upon a pile of tamarack boughs in our warm dry tent we fell upon our supper of bread and butter, cheese and canned tongue, and the stewed apples which we had brought with us in a tin bucket. Just as we were in the midst of what seemed to us a most delicious meal, we heard a shout above the rain and the roaring of the river. Putting my head out of the tent I saw Wilcox wrapped in a big oilskin, coat standing on the opposite shore. I could not hear him from there, so throwing my rubber cape over my sweater I waded bare-legged down to the shore and standing among bushes wet with rain that was almost sleet I made out by repeated shouting that Frissell was a mile down the valley with another horse. On my wet clothes went again and I sallied forth to his assistance. But in the gathering darkness I missed him and after wandering around for an hour returned to find Wilcox and Frissell chopping wood and trying to build a fire with wet logs. Allen and I should have cut fire wood that morning, instead of going off exploring.

It seems that the Indians—both our savages and those Mr. Astley had hired—suddenly found the climate too cold and moved in a body. Wilcox had been unable to get a man to lead another horse, so Warrington and part of the provisions had been left at the Chalet. As my shoes were fast falling to pieces, I volunteered to take the three horses back and to bring out Warrington and another horse load of food. Next morning, that is yesterday, we boiled some rice and fried some bacon for breakfast, and I dried parts of my clothing. By noon I was ready to start, and put saddle and bridle on all three horses. I turned two of them loose expecting them to follow while I led the third. There are too many holes to make riding safe. Instead of following, the other two fell to eating and refused to be recaptured. Allen helped chase them for awhile; and then said that, if I would wait until he went back and got on his underclothes, which were still wet and were hung before the fire, he would come all the way with me.

While he was away I caught one truant tangled in his bridle and with the third horse following set off. Luckily I only got one or two showers, although the brush was waist deep, dripping wet, and the streams which I waded and the muskegs where I was mired half way to the knees kept my trousers clinging round my legs and my shoes going chug chug. However I covered the distance, some nine or ten miles by the way I came, in five hours which is good time considering that beside brush, fallen trees and mountain torrents, two of the horses balked on an island, one got lost and I

had to go back for him a quarter of a mile, and the same fellow reached the top of a hill without his saddle and I had to find it in a thicket.

But I did have the help for the last three miles of a, trail that was almost a path. For it seems that the little fire made by Allen and Warrington the night they slept out, although quenched with several brandy flasks full of water, still retained heat enough to burn up 400 acres of forest. Twenty section hands were up fighting it and they had used, the line of our blazes to reach it, thus tramping out a real trail.

Last night and this morning I luxuriated in the comforts of the Chalet. I was to have gone back this morning; but after looking at the steady downpour, Warrington and I decided that, as the other fellows have eleven loaves of bread and two cans of corned beef, they could live another day without us.

BACK TO PARADISE VALLEY

Letter of August 12

The next morning after my last letter the fine weather returned. So Warrington and I loaded a horse and set off. We followed a new route part of the way and found it much easier than the old. On the way we met Frissell marching down to the Chalet wrapped in an enormous yellow oilskin coat, his rifle on his back and his feet protected by shoes whose uppers the camp fire had destroyed. He had found wet blankets and a diet of bread and water too much for him. But our big bags and extra shoes made him turn back and great rejoicing greeted our arrival. Wilcox and I were cooks. He had the pots and kettles and made tea and cocoa and boiled rice and oatmeal. At this altitude it takes much longer to boil cereals to softness that at sea level; beans take all day. At first he boiled the tea and destroyed the sleep of the party for a night. Now he does it properly and with brown sugar and condensed milk the tea is good. I had charge of the frying pan and bacon. I had asked Astley to get some corn meal thinking that I would make hoe cakes such as we used to have at home in Kentucky; but he got yellow meal, and even after treating it with boiling water, letting it stand twenty minutes, and then frying it in cakes it was little better than polenta. But everyone seemed to like it, for no sooner was the can full used up than Allen took more meal, poured cold water on it and put it in the pan. The result was five cases of dyspepsia. (After forty years I still remember that stomach-ache).

In the afternoon I took my shotgun and went after ptarmigan but found that I was badly out of practice on wing shooting. However, I am becoming a fairly good shot with the rifle. When four of us went over into Desolation valley and along the foot of the unnamed range I shot the heads off two of them at seventy-five feet.

Five men in a small tent was pretty crowded but it helped to keep us warm for in the mornings we found the water in our spring and in other pools frozen over. I sleep comfortably; warm in my blanket-bag except that the end of my nose gets cold.

Friday morning I was up at five and patrolled the upper valley for goats. I saw tracks of both goat and bear; and on Saturday I was up at half-past three and climbed up where I could get a view of the whole valley; but saw nothing. At nine I returned to camp and with Frissell and Warrington and the pack horse we started for the Chalet. I have learned to tie a pack pretty effectively but wish there were someone to teach me the diamond hitch. Anyway my packs stay on. When we reached the place where we had crossed the river two days before we found the log washed away. So we rolled a fallen tree, about the size of a small telegraph pole into the water. Before I could run down to the narrow place we had selected it got there and wedged one end into the opposite bank in such

a way that a foot of water poured over it. There was a call for a volunteer for dangerous service; and Frissell took off his shoes and socks and with a pole to steady him started across. The water piled up around his calves and the log shook; and sometimes two or three lunges had to be made before the point of the pole could reach bottom. Then he would make a step, and so on until he was across. It was a good job and not too easy. After Frissell had pulled the end of the log well up on the bank I walked safely across it; and while Frissell was redressing, I went up stream and Warrington threw an ice-axe across with a climbing rope attached. The other end of the rope was tied to the horse's halter. I pulled on it expecting the water to be three or four feet deep but no sooner had the fore feet of the Cayuse left the bank than there was a splash; and horse, pack and all disappeared under water. Another moment and he came dripping and snorting ashore. His packs were still tight.

We reached the Chalet without other adventure. Wilcox came in an hour later and Allen turned up this afternoon. Much against our advice he had gone off alone to explore a pass (the Wenkchemna pass) at the southern end of Desolation valley and the valley beyond. I have been cursing my fate ever since his return; for he walked up within fifty feet of a herd of eleven goats lying in a little hollow in the snow. He had no gun, while here I have carried a twelve pound rifle for a month and have never come on one.

We are going put to Paradise valley again toward the end of this week; and while the others climb some peaks, I shall devote four days to goats. We were all pretty well used up last night. I had worked hard seven days out of eight, but a good dinner and thirteen hours of sleep have cured everything except blistered feet. I am reading Shakespeare's Histories and am now deep in Henry IV, part two.

FIRST SHOTS AT A GOAT

Letter of August 16

At last I have got a shot at a goat and feel encouraged although I ought to have killed him and didn't. As we are now pretty well recovered from the effects of raw corn meal and porcupine soup, Wilcox and I went to the head of the lake yesterday and then worked up the gulley between the lateral moraine and the glacier for two or three miles. Up near Victoria at an altitude of about 8500 feet Wilcox worked round to where he could get a view and photograph of the face of the hanging glacier here about seventy feet thick, from which pieces of ice are constantly breaking off and thundering down the cliff. I went along the top of the precipice looking down on the ledges below for a goat. Seeing none I started back to rejoin Wilcox. Suddenly on the steep slope of loose rock above me, and about a hundred yards off I saw what looked at first like a big yellow mastiff. It was cantering and jumping along the rocks at a wonderful pace for such a place. I guess the way he jumped about bothered me and the result was the four shots in my rifle merely splintered the rocks around him. He went up over a ledge and disappeared. It made me very tired to let the goat get away after my recent success in shooting off the heads of fool hens, but it was my first try at a rapidly moving target.

ASCENT OF MOUNT TEMPLE

Letter of August 20

As we had planned, Wilcox, Allen, Frissell and I went out to "Starvation Camp," as we call it, in Paradise valley again on Thursday. Warrington preferred to stay at the Chalet. On Friday and Saturday the other three made ascents of two of the biggest peaks around here (Aberdeen and

Temple), while I spent the time hunting. We were far more comfortable than before—the weather was fine, our beds of tamarack boughs felt delightfully soft to weary muscles. I did most of the cooking with Wilcox as assistant, our bill of fare including corn meal mush, rice, oatmeal, hash of canned corned beef with onions, baked beans, bacon, flapjacks, tea and cocoa with condensed milk, canned preserves, crackers etc. Really we got on so well that I hated to come down to the Chalet yesterday.

We always get up early but on Saturday (August 19) Allen called the rest of us at half-past three and we crawled out of our bags to find the fire lit and oatmeal boiling. The east was still perfectly dark, but the full moon—which seldom rises high enough to be seen from the valleys here—was riding close beside the sharp rock peak of Mount Hungabee. The light it gave was fearfully cold and cheerless. That day I was walking and climbing alone eleven hours; I hunted goats and tracked one through the snow, but he must have seen me first, for I got no sight and lost him without a shot. I crossed the pass (Sentinel pass) to Desolation valley and explored it and returned through the Wastach pass.

As I got back to camp first I had half a gallon of mush and other provisions in proportion ready for the others when they came in from the ascent of Mount Temple. They were very tired and hungry. It seems they went up without any special difficulty, but on the way down they missed their way and had trouble in getting past one of the precipices.

On the way back from the valley Frissell was leading the Cayuse when he tried to jump him over a log—as he had to. But the horse's feet got caught in the branches of a small tree and he came down on his head, and turning a half somersault landed flat on his back. And there he stayed with his head pointing the way we had come and his feet sticking straight up in the air, while the big packs on each side of his saddle propped him up and rendered him helpless as a turtle. Simultaneously the recoil of the tree caught Frissell on the nose and laid him flat. Frissell, as soon as he recovered himself, was for cutting the packs off; but I thought there might still be life enough left in the Cayuse to get to the Chalet. So I took him by! the forelegs and turned him over on his side. He made a desperate scramble and was on his feet as well as ever. I had tied the packs on, and I was rather proud to find that the tumble had not loosened a rope.

For five successive days I had walked from an early breakfast to a late dinner with only a couple of sandwiches between. I came to regard even the rude table made of half a log, which I had rigged up by the tent, as a luxury. On the whole this trip was more one of pleasure and less of adventure than any of the preceding. I have developed by continual study into something of a woodsman, but far short of an Indian. I can follow an animal's tracks through a virgin forest, and tell the age of signs much better than at first. No one—to look at me—would think that I had ever been out of the backwoods. My corduroy hat, coat and trousers and my grey flannel shirt are faded, torn, and stained with everything imaginable—from blood to batter. My canvas leggings are frayed at the creases till they look like yellow fur. My two pair of heavy climbing boots, after less than six weeks, and in spite of frequent coats of vaseline, are rapidly coming to pieces, the hobnails in the soles are knocked off or worn flat to the leather. Still they will hold together for another week or so. My hair bristles and hangs round my ears and down my neck in a heavy yellow mop. My face and neck—as much as is not hid by a ragged brown beard—are the color of beefsteak; my hands are stained with turpentine from the trees we have to struggle through beyond the possibility of cleaning, while the many skinned places make washing painful. For three nights and four days I had not had any of my clothes off except my hat, coat and boots.

Moraine Lake And The Valley Of Ten Peaks. *Photo Can. Pac. Rly.*

Camp In Paradise Valley. *Photo Walter D. Wilcox*

Allen, Warrington, Henderson And Frissell. Mt. Hungabee in background.

The Goat. *Photo Walter D. Wilcox*

Astley In Front, Henderson Following

Letter of August 28

After three more days of wandering around the cliffs in search of the phantom goat, not just between breakfast and dinner, but from the first peep of day till dark—I waded a flooded glacial stream twice before six o'clock—I had about decided to go with Frissell down to Glacier this morning. But yesterday afternoon we had a snowstorm, the thermometer fell to 35 degrees and the wind blew so many trees down that the road to the station was completely blocked. However Frissell goes tomorrow and I have sacrificed my beard ready to start. Still as Wilcox is going to stay I think I shall devote a day or two more to the goats. Warrington and Allen have already left. But their place is taken by a fine young fellow who is in the Canadian North West Mounted Police. In fact he has been here for some days now. He is stationed here to prevent any more forest fires. But he does not object to my hunting; indeed I do the game very little harm. Like many of his corps he is an Englishman of good birth and education, well up in Greek and chemistry. He has been a welcome additional member of our circle round the fire in the Chalet in the evening.

AT LAST A GOAT

Letter of August 31

I have killed my goat. After seven weeks spent in vain, on the first day of the eighth I got him. As I said in my last letter I had about decided to leave Tuesday, but a storm accompanied by two inches of snow beginning Monday and lasting over Tuesday felled so many trees that for a time the road to Laggan was impossible, and we were completely shut off from the outside world. So I lay in a big chair and dozed in front of a log fire all day instead. Frissell insisted on going Wednesday but I—luckily— determined to have just one more trial. So Wednesday we both got up at five o'clock and after breakfast he drove off down to the station, and I waited round the Chalet till the clouds lifted a little from the lake. Then I walked down to the other end of the lake and up toward the big Glacier. The valley or gorge—for it is only a hundred yards wide—is shut in on each side by rock bluffs and rows of narrow ledges one above another surmounted by the sharp fantastic pinnacles of Castle Crags 2500 or 3000 feet above me. I have spent whole days along the western side either climbing or hidden among the rocks, but the other side had always seemed too bare and arid and in some places too steep even for a goat. But I looked at it anyway, although without much hope, as the clouds were rolling round the top and every crevice was filled with fresh snow. Suddenly far up I noticed one little white speck about as big as a pinhead which was exactly like the snow specks all round it except that it was a little more regular in shape—a little longer that it was wide. For some seconds I watched it steadily, then the distance between it and the next widened and I shouted right out loud, "At last."

I took out my telescope and watched it moving along a ledge. Even through the glass it did not look bigger than a fly on a wall across a big room. Pretty soon it lay down; and after marking its position and all the possible ways of approach and escape, I divested myself of every unnecessary weight and started for it. That was at half past eight. At first I kept in, some tall bushes till I came to the glacier stream. This I crossed by jumping from one stone to another and kept up the bank where the water had cut it away into a gulley. This brought me close to a clump of fir trees which ran a little way up the slope, so I used their shelter and was soon safely hidden from everything above me by a bluff about 300 feet high from whose top the ledges begin. Along its foot I went till I came to a kind of gulley 200 feet wide and filled with loose rocks and gravel which slid down at every step. Up I went until I was within a few hundred feet of Castle Crags, and I thought I must be well above my goat and in a position to leave the gulley. Here I had one of the strongest temptations to

take a chance that I have ever had, for the gulley had been worn down until it was sunk nearly a hundred feet into the face of the mountain and the side was too steep to climb. The strata were nearly horizontal and in places afforded fair ledges. I started along one and had gotten within ten feet of the mountainside when it narrowed from fourteen to about two inches. I looked up and found the handholds all right but the rock below almost sheer for nearly a hundred feet. The thought that if I fell I could not get that goat turned me back, and I found a safer way down below.

Once on the mountainside I found it not so bad as it looked from below. The slope was not over 40 degrees and the tiny ledges into which the rock was broken would have been as easy as a flight of stairs except for the snow which often concealed loose rocks. So I went carefully along looking down continually. But no goat appeared and after going several hundred yards I came to another gulley much like the one I had ascended. There under an overhanging rock I found where the goat had slept and close by in fine scree some fresh tracks. Of course there were no footprints in scree but the holes were like commas or tadpoles. Now an animal never drags its foot in raising it so I knew the points of the tracks were in the opposite direction from the animal. Up the gulley there extended a band of snow but no tracks on it; below the ledges was a sheer cliff, so that goat must have gone up. And as I looked, there already far above me was the goat. It was already a long way off and at an angle of 30 degrees above me, going along one ledge until it found a good place, then climbing on to the next one and going along it as before.

Unfortunately in a slip I got a few days before I had knocked the ivory bead off my frontsight, but I saw that I should get more than one shot. So I rested my rifle on the edge of the ledge above me and fired, after covering the goat with just the tip of the sight. The bullet struck too low. I raised my rear sight two notches and fired again. The bullet broke one of the goat's hind legs and its attempts to continue climbing were unavailing. A third shot—and with a wild leap the goat fell from its ledge and landing on another twelve feet below, picked itself up and disappeared. I thought it must have fallen behind some rock, and in wild excitement I started up after it. It was eleven o'clock when I shot and for an hour I hunted in vain. The goat was gone.

Finally I went down to where I had seen its tracks in a patch of snow, and traced it from one ledge to another till I found where it fell. But there was no blood even there much less a goat. Then it occurred to me that it might have fallen into the gorge, and when I got where I could see, there it was standing in the loose rocks. When I tried to get near, it jumped and went rolling with a lot of big stones down the gulley. Still it wouldn't die. It made me right sick with its struggles and I almost wished I had not shot it. Finally I put a bullet through where I thought its heart must be.

From its being alone I had expected it to be an old billy. But I found that it was a two-year old female with fine soft woolly hair and pretty little horns, but quite a big animal. As the gorge seemed to be quite dangerous from falling rocks I hauled and rolled her down 500 feet and then left her. In the afternoon Wilcox returned with me and after taking out the intestines we tied the feet over a pole and started down. She was remarkably heavy and the gorge rough going. Thursday Astley helped me to get the skin off and to stretch it on a frame to dry. It will take till Saturday afternoon so I shall not leave here until Sunday, the second of September. The meat is excellent, something between mutton and venison. Astley says it resembles antelope. I have "jerked" some of it in the sun, so that any one of my classmates at college who doubts that it is goat can eat it.[2]

2 Note. For a more systematic and detached account of the party and its doings see Walter D. Wilcox, *Camping in the Canadian Rockies,* Knickerbocker Press, New York, 1896.

DISCOVERERS OF THE JAPANESE ALPS

(A Note from the Japanese Matterhorn)

By K. P. Kirkwood, F.R.G.S.[1]

Sessho hut, Japan Alps, Aug. 31, 1934

I am storm-bound in the Sessho hutte on Yariga-take ("Spear Peak") 10,432 feet, called the Matterhorn of the Japanese Alps because of its sharp-pointed spire, and generally regarded as the highest peak of the Alps, (though disputing that claim, by a matter of about eleven metres, with the peak of Mae-Hodake). While wind and beating rain and dense cloud keep me and my guide, and two or three other Japanese climbers and their guides, confined in this *hutte*, warmed by a charcoal brazier and wrapped in futons or thick Japanese quilts, the conversation has turned to the early explorers of the Alps, especially Rev. Walter Weston; and in this enforced detention I am jotting down these notes with a desire to mention specially Bishop H. J. Hamilton, a Canadian who shares the honours of pioneering these splendid ranges.

The Japanese Alps, which comprise now three groups of high mountains, viz: the North or Hida range, the Central or the Kiso range, and the South or Akagi range, run parallel, and they form a backbone in the central part of the main island of Japan. Each of these groups includes many peaks as high as 10,000 feet above sea-level. It may be noted, however, that the mountains of each group have their own characteristic nature and geological character, mode of growth, and different appearance and features. The mountains in these Northern Alps are mostly rough and rugged with perpetual snow, while those in the South are high and steep but generally undulate with little or no snow in the summer.

The name "Japanese Alps" appears to have been given to them by a British engineer, Mr. William Gowland, who in the early days of the Meiji era, about sixty years ago, explored mine deposits in the Hida mountain ranges. It was not, however, until about 1892 that foreigners first came to know these mountains, and it was Mr. Walter Weston's book *"The Japanese Alps"* published in 1896, which first brought them to the attention of Japanese and foreigners alike.

KOMANJI KANUJO

Here in this hut, among the several Japanese guides who are recounting tales of the mountains, is one young lad named Komanji. He is the grandson of the famous Japanese guide, Komanji Kanujo, who conducted Weston, Hamilton, Belcher and Weston's other companions over these ranges and peaks, before the present trails had been broken open and well-beaten. Readers of Weston's classic will find full justice has been done to the old Komanji in the pages of narrative.

Komanji's former house stands in the valley close to Lake Miyojin, not far from the new mountain lodge Kamikochi Hotel; and here a few days ago I visited the little shack and saw early photographs of Weston and his guide.

Komanji was a hunter and trapper in these mountains. His grandson has been telling us in this hut of his forbear's exploits; how he knew the mountains, and the possible routes of ascent, so well, that he made an invaluable guide to the ardent missionary who, usually with his companion, Hamilton, or Belcher, determined to conquer the major peaks. Honour be to that guide who little

1 Canadian Legation, Tokyo.

guessed that he was a trail maker for the tens of thousands who have since found pleasure in these mountain heights. This young Komanji is justly proud of the services rendered by his grandfather to Japanese mountaineering.

REV. WALTER WESTON

I need not refer much to the Rev. Walter Weston whose name is foremost in the annals of Japanese mountaineering. His best monument is his classic book *"Mountaineering and Exploration in the Japanese Alps"* (John Murray, London, 1896), long out of print but still discoverable. The presence of young Komanji has turned the attention of those of us around this *hibachi* of glowing coals to Weston's work and fame. I learn that a Japanese translation of his book is now being prepared; though it is now principally a fascinating historical document of exploration—the description of routes and trails, of heights and conditions—being long obsolete for practical utility. Japanese alpinists in Tokyo are also said to be at present agitating for a suitable monument in stone to be erected somewhere in the Alps in honour of Weston, even as a weather-enduring porcelain statue of Komanji is now being prepared to commemorate the memory of that guide.

It was Weston's book, illustrated by Hamilton's photographs—among the first ever taken in these Alps—which opened the eyes of the world to these mountains. As Keats discovered Chapman's Homer, like stout Cortes sighting the peaks of Darien, so the world discovered "The Japanese Alps," like one sighting the peaks of Yariga-take and Hodake-yama; and a new realm was opened to those whose feet seek high mountain trails.

At the Shimidzu-ya Onzen at Kamikochi there is a manuscript record book of later climbs in the Alps, which on August 23, 1914, Mr. Weston commenced by a historical note and diary entry and left for future climbers to record their experiences in. In Mr. Weston's first note, he writes that "the first known foreign visitors to the spot were the Rev. Walter Weston and the Rev. H. J. Hamilton in 1894, on their way from the first ascent of Kasa-dake from Yamada. A record of this and other expeditions in this region (including ascents of Yari-ga-take and Hodake-yama, etc.) is to be found in *"Mountaineering in the Japan Alps"* by the former traveller. At that time there were no shelters to be had, beyond the Tokuga hut, and the tracks were few and indistinct." This brief entry, referring to various expeditions and explorations by Weston and his friends between the years 1891 and 1895, has now been supplemented in this MSS. book by the descriptive notes of subsequent travellers to these mountains; so that jottings about trails, weather-conditions, huts and other pertinent information are of constant value to prospective climbers.

BISHOP H. J. HAMILTON

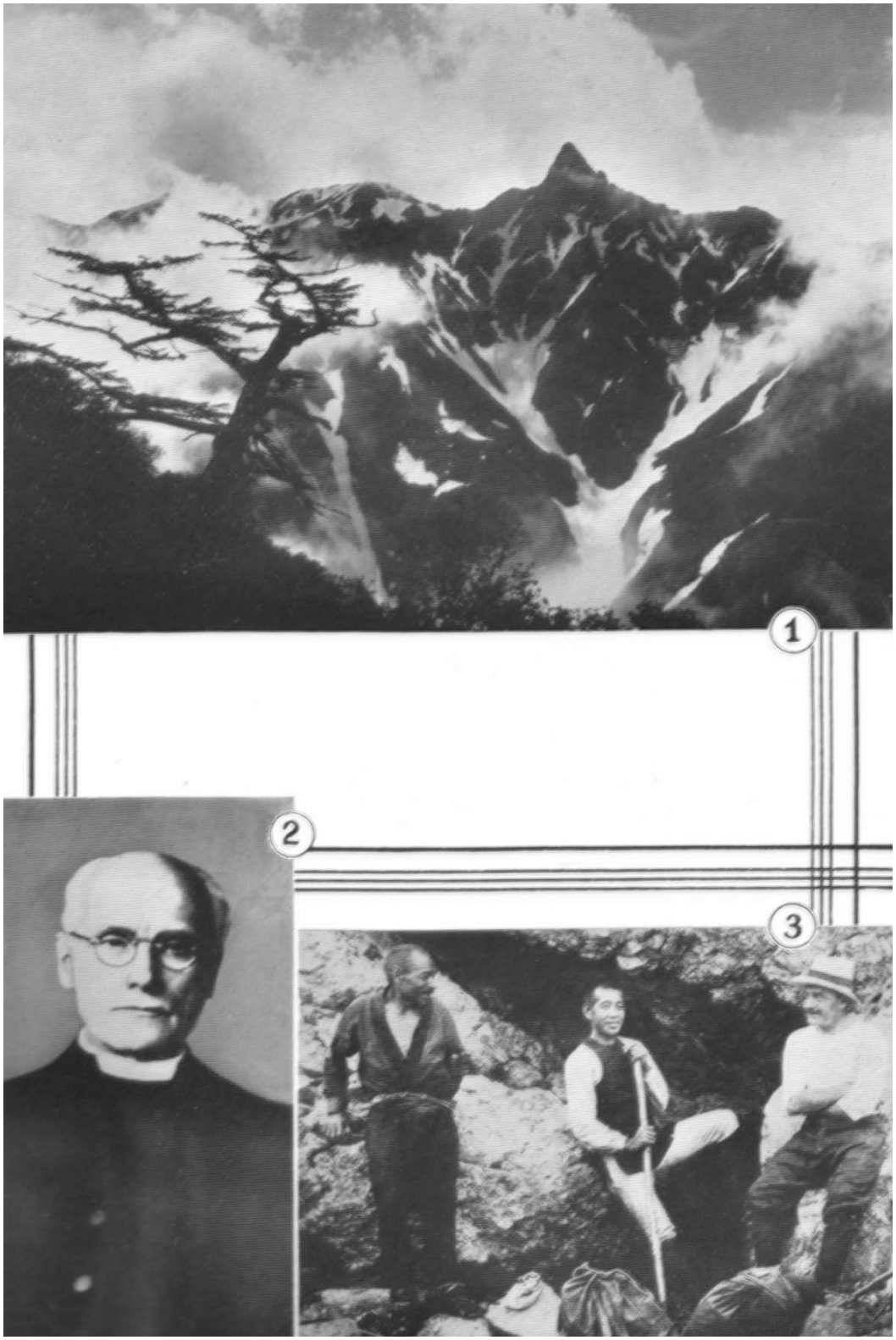
Hitherto most of the credit for the discovery and exploration of the Northern Alps has gone to Weston, by virtue of the revelations of his classic book. But, as I have tried to impress upon these guides and travellers stormbound with myself in this hut, more recognition should be given to the companion to whom Weston has made frequent reference in his work. This is the Right Rev. H. J. Hamilton, until this year Bishop of the Mid-Japan Diocese of the Canadian Church of English Missions in Japan. Bishop Hamilton, in June this year, (1934) retired from his 42 years' missionary service in Japan and returned to Canada. Whether or not he will ever personally write of his earlier days of mountain exploration, he will, let'us hope, be increasingly remembered as one who broke the trails and pioneered with Weston in the opening up of these Japanese Alps.

Bishop Hamilton is a Canadian, having been born in Ontario seventy-three years ago. After an education at the University of Toronto and Wycliffe College, Toronto, he became Dean of the

latter institution in 1889. Coming from Canada when only thirty in 1892, he assumed his missionary work in Japan; and two years later, he and Mr. Weston traversed the then almost unknown peaks in the region of Pyashirazu, Renge, Yari, Yonen and Ontake, and closely observed the customs and manners of the people they met. Hand cameras were practically unknown in those days, and the two missionary alpinists, carrying heavy and awkward photographic instruments took a series of pictures of the lofty peaks, gorges, snowfields and ravines, which when they were published in London with an account of their trip, created a sensation both at home and abroad. Just before his departure from Japan last June, Bishop Hamilton modestly said, "The only part I played was that of a camera-man. The real introducer of the Alps is my former colleague Mr. Weston, who is an expert mountaineer. He scaled the peaks every year as long as he lived in Japan. Guides were not as plentiful as they are now, and we had to hire hunters of the regions as guides. Accompanying us on the trip in 1894 was Professor Uraguchi of the Taihoku (Formosa) Imperial University who was then Secretary to Mr. Western."

Just before Bishop Hamilton's departure, the Japanese Alpine Club, founded many years ago by Mr. Weston, gave him a special farewell party, in which due recognition of the Canadian missionary's collaboration in the exploration and the subsequent published description of the Japanese Alps was accorded him.

Now, having paid my small tribute to the memory of Romanji the guide, to the exploits of Weston the pioneer, and to the honour of Bishop Hamilton whose aging years is a regret to Japanese mountaineering and whose retirement is a loss to Christian and social work in Japan, I close these scribbled notes. The storm has not ceased, though we hope for a fair morrow; the kerosene lamp is dim; the chatter of the Japanese guides and climbers has subsided; and the thick atmosphere of wood-smoke is drowsy. I must curl up under my futon, and to the savagery of the wind and the rattle of the rain outside, must find sleep; for tomorrow, weather permitting, we shall make a ten-hour march along the ridges and over the peaks of Nishi-dake, Dai-ten-jo, and Tsubakuro-dake to the next hutte of Tsubakuro.



(1) Mt. Yarigatake.

(2) Rt. Rev. Bishop Heber James Hamilton (1934).

(3) Rev. Walter Weston With Guide, Komanji Kanujo, And Porter (1894).

A WINTER ATTACK ON MT. COLUMBIA

By Peter Withers

During the summer of 1932 the possibility of ski-ing across the icefields from the Columbia glacier, at the head of the Athabaska river, to the Athabaska glacier, near the head of the Sunwapta came under discussion between four members[1] of the Jasper Ski Club. The main snag was, as far as we knew, the ice-fall on the Columbia glacier. However, it was decided to make the attempt and a winter attack on Mt. Columbia also became a definite part of the scheme.

The first move was made in October 1932 when food supplies were sent out by pack horse to the wardens' cabins at Waterfall and Brazeau lakes, the latter being the nearest cabin in Jasper National Park to the Athabaska glacier. It had been our intention to send a food supply to Camp Parker which is only seven miles from this glacier, near the foot of which we subsequently had our main camp, but this was found to be impossible owing to the heavy snow on Nigel pass.

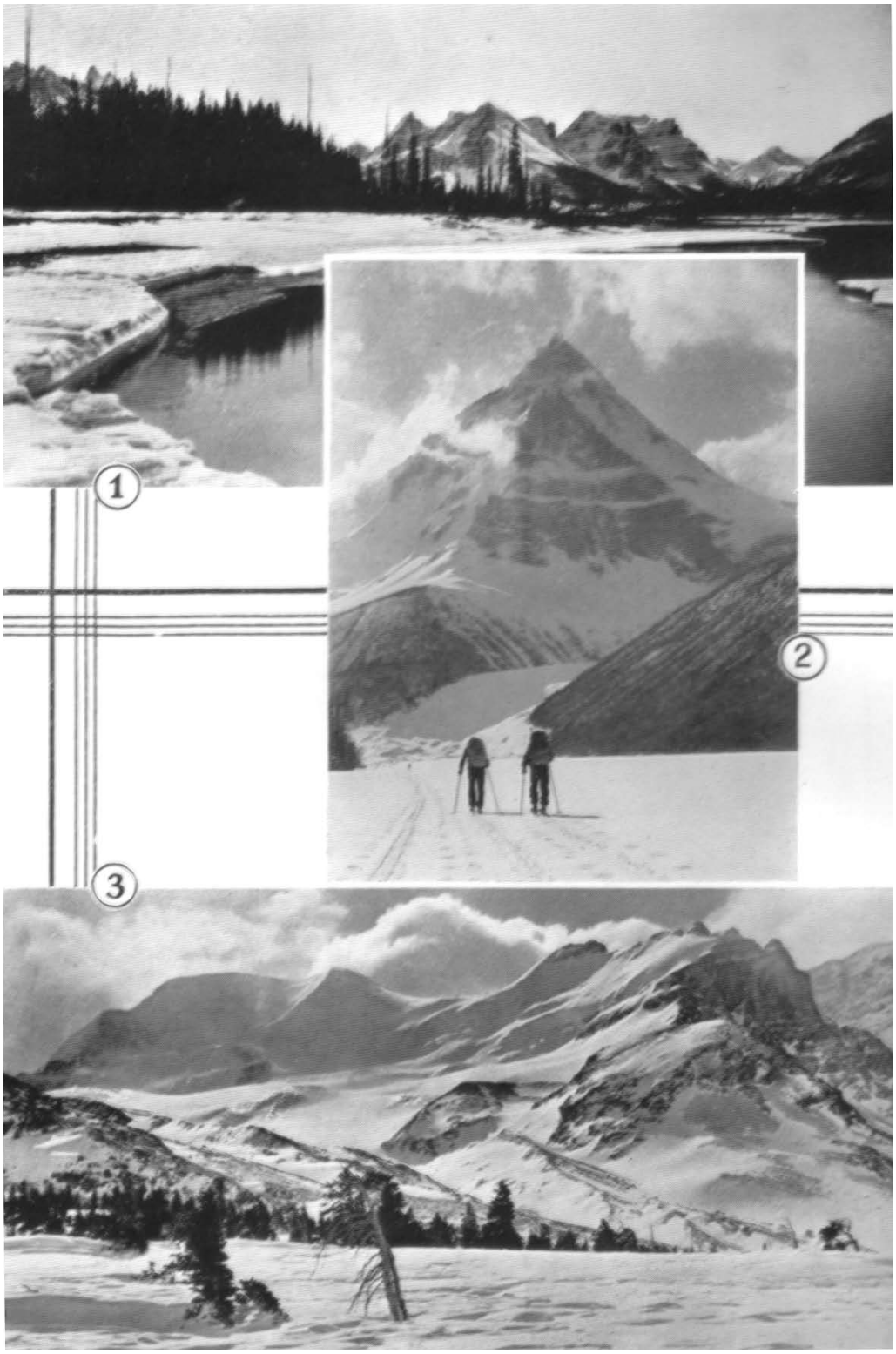
A preliminary ski trip to the head of the Athabaska was necessary for two reasons: first, to take in the climbing equipment and other supplies in order to lighten the packs on the final trip and, second, to size up the ice-fall on the Columbia glacier and, if that appeared impossible, to find some other route on to the icefield. Accordingly, early in February, two of the party made this trip and the conclusion was reached that the ice-fall, though offering certain difficulties, was climbable with the combined use of skis and crampons.

On account of the impossibility of taking food supplies to Camp Parker in October, a further preliminary trip became imperative as a food cache as close as possible to that side of the icefield was an absolute necessity, but, instead of a couple of weeks' supplies which we would have had in that country had our original plans materialized when pack horses were available, all that two men on skis could take in addition to their own requirements was five days' food for four men; this had a very adverse effect on the main trip as it cut down the time finally available for the attempt on Mt. Columbia; this cache was put in at the end of February.

On March 14, the party of four set out, going by automobile to the Whirlpool bridge and ski-ing from there to Sunwapta falls which we reached that evening. On March 15, we reached a point roughly half-way between Sunwapta falls and the head of the Athabaska, and on March 16, we camped about two miles below the tongue of the Columbia glacier where we picked up our climbing equipment, etc., left there early in February. The day of March 17 broke in doubtful weather with clouds over the peaks and a heavy mist on the icefield—not the best conditions for our venture—but as morning advanced things looked a little brighter and we decided to make a move, though it was then at least a couple of hours later than our intended time of starting.

The tongue of the Columbia glacier rises at a very gradual slope for some miles until the ice-fall is reached at the foot of which the surface is broken by séracs, forming a labyrinth through which we skied in an erratic course. The exceptionally heavy snowfall of last winter made it possible to use skis in climbing the ice-fall for about 250 feet, the grade being steep but the snow firm enough to hold as we switchbacked up the face. As we continued to climb, the snow became softer and at last at the foot of a narrow tongue, where we could no longer switchback and where the snow was so soft that the skis went out of sight, we had to take them off and climb on foot planting the skis and poles ahead of us and pulling ourselves up to them and repeating this ad infinitum.

1 J. Weiss, C. V. Jeffery, A. D. Jeffery, A. L. Withers.



(1) Valley Of The Athabasca River Near Chaba Junction. *Photo J.A. Weiss, Jasper*

(2) Mt. Columbia. *Photo J.A. Weiss, Jasper*

(3) Mt. Athabasca. *Photo J.A. Weiss, Jasper*

At the top of this snow tongue, we found ourselves in surroundings suggestive of a mammoth quarry. Blocks of ice, some the size of a house, piled in all directions and through these we had to find some kind of a way, using crampons as the going was slippery and broken to the last degree. Having negotiated this country of pitfalls sometimes by forming a line and passing skis, poles and packs from one to another, we gained a point abreast of the lower ridge of a snow-slope which reached without further obstruction to the icefield above, but between us and that desirable route was a rather ugly-looking crevasse crossed by a snow-bridge about the width of a pair of skis and at a good downward grade. However, beggars can't be choosers, so we took a careful sight with the points of our skis and, in turn, let go, crossing without accident. We had now reached the top of the ice-fall but we had also reached 5.30 in the afternoon, the ice-fall climb having taken rather more time than we had estimated.

With still 18 miles to our cache at the foot of the Athabaska glacier and 2000 feet to climb, it was obvious that our bed that night would be on the icefield. However, there was nothing for it but to carry on, which we did until 9 p.m., when we were at about the highest point of the icefield, approximately 10,000 feet; there we dug a hole in the snow, spread our eiderdowns, took off our boots with some difficulty, as they were frozen solid—and so to bed! The snow which fell and which blew on to us during the night, made it a bit warmer toward morning when we took our boots to bed with us in order to thaw them out sufficiently to get them on.

We turned out at 8 a.m.—the 19th—and in three hours reached the foot of the Athabaska glacier where we made camp, having found our cache intact, but even so with only three full days' food available for Mt. Columbia on account of our curtailed food supplies and the fact that the next supply was at Brazeau lake cabin, two days distant.

The weather on the icefield is doubtful at best and lived fully up to its reputation on the 19th. It was blowing a gale and the high country was black with storm clouds so there was nothing for it but to stay around camp. On March 20, we started out at 7 a.m. under fair conditions but as we climbed the Athabaska glacier, it became obvious that Columbia was out of the question that day—we were again met by a gale worthy of Cape Horn and the visibility on the icefield was nil.

This left us only one day, the 21st, when we left camp at 6 a.m. under a clear sky but, with the handicap of a fresh snowfall of six inches on the icefield. This meant considerable reduction in speed and consequent increase in the time taken in the 20-mile trip to the foot of Columbia which we reached at 1.30 p.m., in weather alternately brilliant and stormy. We left our skis at approximately 11,500 feet and there took to crampons and roped for the final climb. Our progress was extremely slow as the fresh snow had now become very soft and considerably deeper and the occasional lack of visibility did not help; but we climbed to a point on the south-west ridge approximately 300 feet vertically below the summit when it became obvious that it was not possible to reach the final peak on account of recurring snowstorms and the lateness of the hour so we reluctantly decided to turn. We reached our camp across the icefield at dark having travelled 40 miles and climbed 7500 feet.

The next day, March 22, we broke camp and headed for Camp Parker where we spent the night and incidentally cleaned up the remains of our food, intending to make the Brazeau lake cabin in time for lunch on the 23rd. However the snow on the Brazeau was in anything but the best condition and we did not arrive until 5.30 p.m., very empty but now with an almost unlimited food cache at our disposal. We remained there on the 24th and 25th, mostly taking aboard nourishment. On March 26, we reached Waterfall cabin via Poboktan summit, which, by the way, is as good a ski country as any we saw; and on the evening of March 27, camped at the upper end of Maligne lake, having come over the Henry MacLeod glacier and down Coronet creek. The Chalet at the

lower end of Maligne lake was reached on March 28, Medicine lake on March 29 and Jasper on March 30.

The total distance travelled was about 225 miles and the various climbs aggregated approximately 22,000 feet. The distances quoted throughout are not as the crow flies but the estimated distances skied. In ski country where it was necessary to switchback, the increase in distance travelled is very considerable.

AN EARLY WINTER CLIMB IN THE ROCKIES

By T. R. Deacon

In response to your request for an account of what I believe was the first ascent of Cascade mountain[1] at Banff, may I state that this ascent was made by the writer in 1887, early in December I believe, speaking from memory? The writer was assistant to Mr. Arthur St. Cyr, D.L.S., on the survey and exploration of the original park reservation of 260 square miles. The easterly and westerly limits were N. 35° W., astronomically, ten miles long, and the northerly and the southerly limits were S. 55° W., twenty-six miles long. About September 7 or 8 we started on the northerly boundary from a point near Cascade siding about seven miles west of the present Banff station. By the most strenuous labour, we had only advanced the line by the end of November to its intersection with Fortymile creek, as the snow came about September 10 and remained, increasing in depth nearly every day. From our line as a base we were endeavouring to establish trigonometrical stations on the adjacent peaks. After cutting the line from the east side of Fortymile creek to the upper edge of timberline, we saw that the line would pass, when projected, slightly north of the summit of the main peak of Cascade mountain, which as you know is a twin peak. It was decided to try and establish a station on the main peak, slightly off the line of the boundary.

Accordingly after having moved a fly camp to the upper edge of timberline, the writer left camp the following morning before daylight with one man named Walter Fulmer, who, I believe, still lives at Banff. As there appeared no way to get up directly, we turned northward along the shoulder of the westerly peak and rounded this into the valley at an elevation of about 9000 feet above sea level. As the snow was very deep, we could stick on to the sides of the peak and concluded we might get up that way. When we were partly up, Fulmer slipped and badly sprained one foot. He had on a pair of long-legged heavy boots and when his foot began to swell, he was in great pain and could not go on. I asked him if he could go back alone and he said he could, so he turned back and I went on alone. An hour or so afterwards, when it appeared to me I should be able to make the summit, I sat down to rest and in the stillness of the upper air 1 thought I heard a faint cry. I knew it could come from only one source and I hurried back. I found Fulmer lying on the snow not far from where I had left him, unable to walk. I pulled off my own coat and mitts, put them on him and taking hold of the back of the neck of his coat dragged him on his back down to a little clump of trees in a small valley and making a fire of dead limbs, I thawed out his boot, which was frozen solid, preventing the injured leg from swelling and causing great pain, and I split and cut off the boot. Having made a bed of boughs and placed a pile of dead wood near him to replenish the fire, I hurried back to camp, brought out three more men and a blanket for a stretcher and got him to camp about nine o'clock at night.

I was sure I had found a way up so I left with another man at five o'clock the next morning and by 11.30 a.m. we were on the top. I had a powerful pair of field glasses but just as I picked up the chief at the instrument nearly a mile distant, a cloud came along and blotted out everything. It was a swirl of snow and so dense we could not find our own tracks and were afraid to move for fear of falling over the sheer sides of the peak. We had to lie down for perhaps twenty minutes and when the cloud pulled off, our hands, feet and faces were frozen and we had to crawl over the side and thaw them out by rubbing them in the snow. We even had to take our boots off and rub the frost

1 See, however, *A Climber's guide to the Rocky Mountains of Canada,* p. 42. (Editor).

Cascade Mountain. *Photo Byron Harmon, Banff*

out of our feet. However, the sun shone brightly again and we returned to the top and saw a sight which, though it is now nearly forty-seven years ago, remains clear and bright in my memory, so marvellously beautiful and magnificent was it. The ranges west of us were distinctly visible for at least fifty miles north and south and covered with dazzling white snow. The waterfalls were all frozen, each one surrounded by a rainbow which gave the effect of great banks of white flowers sparkling with dewdrops and the irridescence around the waterfalls gave a variegation of colour and brilliance impossible to describe in words. After gazing at this magnificent picture for some time, we descended and the next day I returned with four men and dragged to the summit a small spruce tree about four or five inches in diameter for a flag pole, built a cairn around it and put the names of all the party in an empty baking powder can in the cairn with the date of the ascent. A cotton flag was fastened on the pole and this point subsequently tied in by triangulation.

I have no doubt that the wind whipped the flag to pieces in a few days but twelve years afterwards, I was told by Mr. Ellis of Toronto that he had been up and found the baking powder can in the cairn. There were many other incidents of interest in this ascent but they could not for want of space be incorporated in this article.

ON SKIS IN THE LITTLE YOHO

By A. A. McCoubrey, Jr.

The week following my twelfth birthday I spent in the little Yoho valley, having the good luck to climb Mt. President and Kiwetinok Peak with Lawrence Grassi. After the Paradise valley camp in 1933, I again visited the little Yoho, this time spending two weeks with a party from the Winnipeg section and getting, during that time, a little better than a nodding acquaintance with the peaks that surround the valley. When, therefore, my father suggested that I come with him in April 1934 to Twin falls cabin and visit the little Yoho on skis, I did not take long to make up my mind.

Our party consisted of Bob Guthrie, Nicholas Morant, Dad and myself. The long trek in from Field was made with heavy packs in two short days. Snow conditions then and throughout the trip were abominably heavy. Early on the morning of the 25th the entire party left Twin falls cabin with the object of exploring some of the peaks of the little Yoho. After going a short distance I had trouble with my ski-harness and Bob felt unwell so that we both had to turn back. It was an unfortunate start as Nick was new at the sport and burdened with heavy cameras. However, the others continued without us although the delay and the circumstances rather spoiled their day. They had a fine photographic trip and Dad made solo, the first ski ascent of Emerald pass, leaving Nick below the summit to continue his photographic studies.

Next morning (April 26) while the others rested, Bob and I left the cabin at 6 a.m. bound for the head of the little Yoho. We traversed round the east end of Whaleback mountain, which separates the little Yoho from Waterfall valley. Continuing the traverse along the south side of Whaleback for three hours, we reached the top of the ridge. We then dropped down 500 feet to just above timberline. At 11.30 a.m. we lunched, then pushed on towards Isolated Peak (9234 feet). After a very steep climb, we reached the foot of the rocky summit of Isolated Peak where we left our skis and scrambled up the remaining 200 feet to the summit, arriving at 2.15 p.m.

On top we busied ourselves taking movie and still pictures. The view was magnificent. We could see Mt. Assiniboine, the cloudless sky making the visibility very good. Part of the valley of the Ten Peaks could be seen, also the peaks surrounding the Ptarmigan and Skoki country, while to the north the view was amazing.

We left the summit at 3 p.m., reaching our skis half an hour later and started once again across the glacier towards the north side of Mt. McArthur (9892 feet). We reached the final pitch (approximately 250 ft.) at 5 p.m., just as the sun started to set, throwing the north side in shadow. We noticed a huge cornice on the east side which overhung considerably. The snow had now begun to harden in earnest, so much so that it was necessary for Bob to cut steps for our feet with his jack-knife, big enough to enable us to balance ourselves with both skis and ski poles on our backs. We climbed painfully upward at a steep angle until we reached the top at 5.30 p.m. We stayed on top for fifteen minutes, just long enough to take a picture and leave a record of our climb.

At 5.45 p.m. we started down to the ridge between Mt. McArthur and Mt. Pollinger, arriving there at 6 p.m., where we finished our last morsel of food. Leaving our skis and rucksacks on the rocks, we started for the top of Mt. Pollinger (9008 ft.) a little summit of broken rock which was reached at 6.20 p.m. ;The last of the movies for the day were taken of the sun and moon.

The fast descent started at 6.35 p.m., down a huge snowfield which eventually led to the valley floor after a 3000-foot drop in altitude. For 3000 feet, skis and skiers careened down the snowfield, throwing caution to the winds and once in a while the odd ski cap or ski pole. Bob

had left five minutes before me in breathtaking fashion, ski-ing diagonally across the snowfield, crouched low, and enjoying to the full, the joy of speeding in such surroundings. The snow was getting harder all the time making the speed difficult to control. At the end of the snowfield we cut across a snow gully, around a rock ridge and down to the last 500-foot pitch. As it was too steep to descend on skis, we tobogganed downward getting a heavy shaking up in the process and the biggest thrill of the day.

We reached the valley bottom at 7.10 p.m. and started slowly down the creek bed towards the cabin four miles away. The moon was high in the sky as, with leaden feet, we wended our way through the larch and spruce forest that fills the valley floor. The moonlight, filtering through the trees, left in our minds an impression of beauty hard to describe. We journeyed on round the shoulder of Whaleback, arriving at the cabin at 9.30 p.m., thus ending one of the finest days in my mountaineering experiences.

After a good-sized meal had been disposed of, fatigue got the upper hand and two very tired individuals were soon lost in the sea of unconsciousness.

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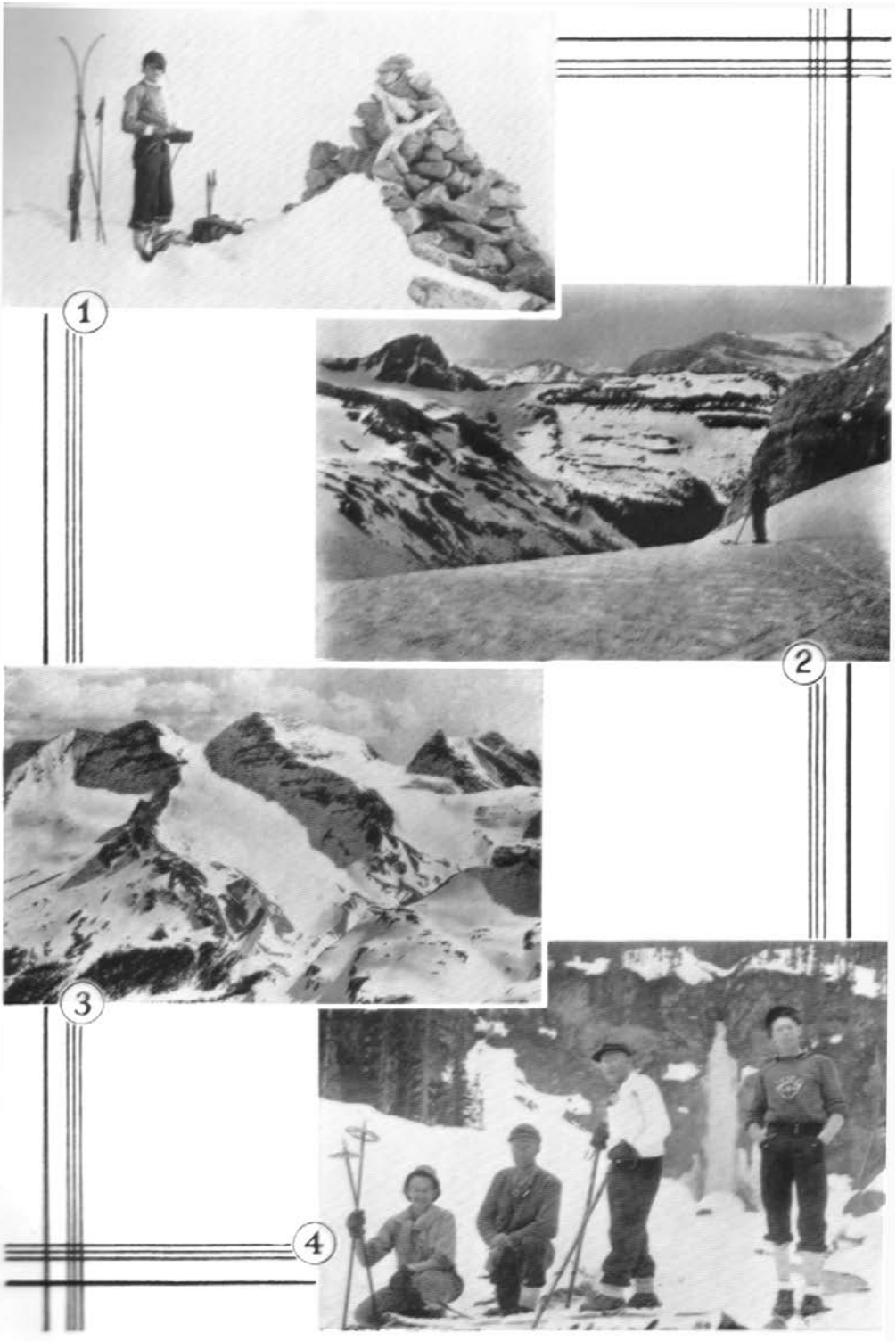


(1) Summit Of Mt. McArthur (9892). *Photo R. Guthrie*

(2) Descent From Emerald Pass. *Photo Nicholas Morant*
Isolated Pk. And Whaleback Mtn. In Middle Distance.

(3) President Range. *Photo R. Guthrie*
The Vice President, President Pass, The President, Emerald Pass, Mt. Marpole.

(4) The Party At Laughing Falls. *Photo R. Guthrie*

WHAT THE DUDES DID DO

By Erljng Strom

When the westbound passenger train stopped in Banff on March 4, in 1928, six pairs of skis were unloaded at one end of the platform. Native bystanders looked on in amazement. What could this mean? There was no carnival to be held now. As a matter of fact that year's carnival had been successfully completed weeks earlier, and all skis had been returned to dusty attics long ago. There was not even snow enough in Banff to ski on, nor in the immediate vicinity. The skis must have been unloaded by mistake. But then came knapsacks, ski poles and other equipment piling out, and at last the owners themselves, four men and two women, Easterners —dudes. Can you beat that?

A great deal of talking and headshaking was done around the fireplaces in Banff that night. Where did these people come from, and where did they think they were going? Rumour soon answered the last question. To Assiniboine camp. Well, of all the foolish ideas! Did they know they had thirty-two miles to go and over two high passes at that, a trip bad enough to make in summer time with horses? Old-timers had seen crazy dudes before, but none quite as nit-wit as these.

Such was our first reception in Banff. We were not only looked upon with sympathy, we were actually advised not to attempt to cross Brewster pass in winter, because of the great danger of avalanches. Little did these advisors know that the leader of this first ski trip to Mt. Assiniboine had gone through the entire World War as commander of storm troops on skis in the Italian Alps, and that it would take more than a few old-timers in Banff to change his mind.

Just on what ground our advisors based their belief, we never found out. Banff at that time knew very little about the general use of skis for winter travel. Ski-ing had been introduced through ski jumping, and like most other places on this continent, people had been led to think that "skiers must jump." For winter travel they had the Indian snowshoe, and even to this day one can get into heated arguments as to which of the two forms of ambulation is the more practical.

When our little party of "dudes" left Banff in the early morning of March 5 that year, we were much less concerned about avalanches on Brewster pass than about lack of snow at Assiniboine. Starting out in an automobile over a perfectly dry road gave us a somewhat dubious feeling. Fortunately it did not last long. Three miles west of the town we could drive no farther. We put on our skis and kept them on. After passing Healy creek, one of the tributaries to the Bow river, we gained altitude rapidly and found more and more snow. By the old logging camp near Howard Douglas creek it had reached a depth of two feet, and long before Brewster creek cabin, our destination that day, we found much more snow than really necessary- We were now twenty miles from Banff, and already more than half-way to Assiniboine. From a skiers standpoint the day had not been particularly interesting. Most of the way had been uphill and through burnt timber, which is seldom pretty. This burnt timber has one advantage, however. It provides good visibility and enables one to see whatever game might be wintering in the valley. We saw two head of moose this first time, and have since then, seldom failed to see moose along Brewster creek. Our second day proved to be as hard as the first one, although we actually covered but twelve miles that day. As an eye-opener we got a two thousand-foot climb to the top of Brewster pass. A beautiful pass it is, in winter as well as in summer. Eight thousand feet above sea level with wild and jagged peaks on all sides. Since this first trip I have crossed Brewster pass thirty-one times in winter, and only twice have I had bad storm on the top, which is a very good average for a high mountain pass. The wonderful downhill running this pass offered was payment in full for our struggle to get on

it. In no time we were down on Allenby creek, and had still a good bit of running until we crossed Bryant creek right at the foot of Gibraltar Rock. We had been going in a southerly direction, but turned west at this point and began to gain altitude once more. Assiniboine pass was now ahead of us. It did not seem high, nor did it seem very far away, and yet from year to year it has presented itself as an everlasting proof that one must not always believe one's own eyes. We thought we were reaching the top at least three times before we were actually there. In spite of it all we felt thoroughly repaid. We entered, at this pass which forms part of the Continental divide, one of the prettiest little valleys in the world, and one as adapted for ski-ing as we had ever hoped to find. My enthusiasm for this spot has no limit. Mount Assiniboine itself, the center of the picture, is of all mountains the most perfectly shaped. Almost 12,000 feet high, it rises far above the surrounding peaks, fully deserving its nickname "The Matterhorn of Canada."

Needless to say, our three weeks at Assiniboine Camp surpassed our wildest expectations. We did not miss one day of ski-ing. And such ski-ing! Wide open slopes up and up in all directions, an inexhaustible amount of runs, all with a vertical drop of two thousand feet or more, and all ending near camp. Enough timber right around to provide good and sporty ski-ing on stormy days, and over all the most perfect snow we had ever seen—from five to ten feet of it on the level.

We returned to Banff, tanned to a shade of brown that has not yet been seen on any southern beach. Banffites were more amazed than ever, but not until we came back the next year with a larger party did any of them sit up and take notice. Some of the boys in Banff (I think Cliff White and Cyril Paris were in the group) asked permission to come out and visit us that year. They blew in one late afternoon, spent a few days and left again full of enthusiasm and future plans. With that trip the ball started to roll. The following year five or six young men from Jasper made the 220-mile trip to Banff on skis for the first time. The same year a group of ski enthusiasts from Minneapolis beat that record by covering 250 miles from Jasper to the Columbia ice-field and return.[1] These men had all been at Assiniboine the previous year, and were kind enough to invite me on the trip. We missed the Snow Dome by several miles. In a blinding snowstorm Alfred Lindley and I climbed a shoulder of Mount Castleguard instead, and did not discover our mistake until late in the afternoon on our way back. We were then completely out of food and could make no further attempts. One year later in 1931, a member of our party Russell H. Bennett with the assistance of Cliff White of Banff succeeded in making the first winter ascent of the Snow Dome.[2]

Since then, many more successful trips have been made and ski-ing in the Canadian Rockies is now an established fact. An almost unbelievable variety of skiing can be found. Norway, Switzerland and Austria with a few hunks of Alaska thrown in and the scales would no more than balance. Most of the ski-ing is above timber-line, with runs many miles in length, starting near the very tops, usually finishing between open growing larch raid spruce in the bottom of the valley. These runs have a vertical drop of from two to four thousand feet. Although not quite as long they are just as steep, fast and sporty as any ski runs in the world.

Two stationary ski camps have been developed in the Banff district during these last years. One is east of the Bow valley not far from Lake Louise and is called "Skoki." It is now operated by James Boyce of Banff. The other and older one is "Mount Assiniboine Camp," thirty miles south of Banff, which is operated by myself. Both places offer as good ski-ing as can be found. Skoki is the more accessible and can be reached in four or five hours from Lake Louise station. With Jim Boyce as manager the place can not be recommended strongly enough. Jim is one of the best

1 *C.A.J.,* 1930, p. 112.

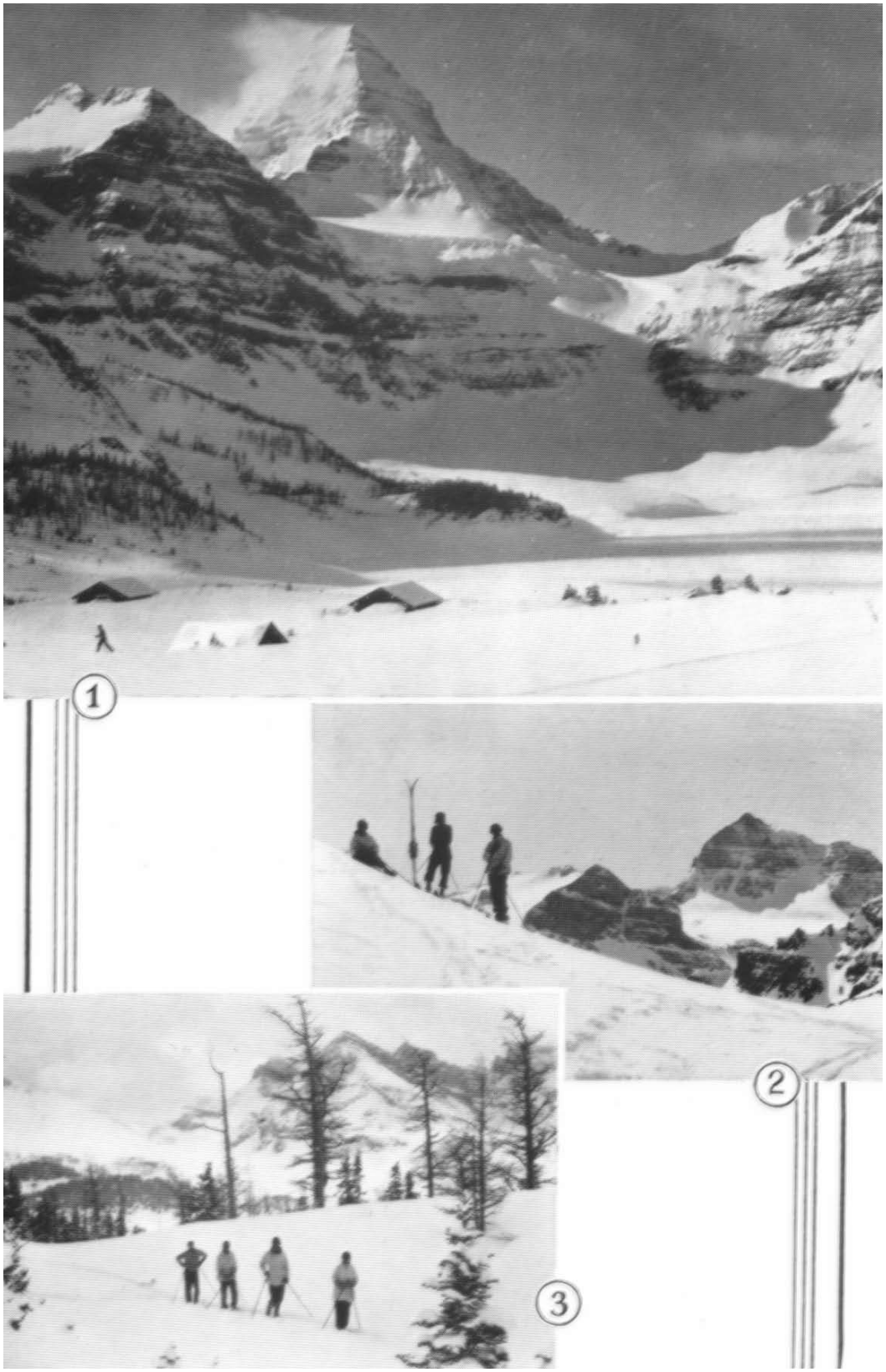
2 *C.A.J.,*1931, p. 107.

known summer outfitters in Banff. His ski-ing may still be improved on, but his cooking not. For this reason he does his own cooking while he usually has the Austrian ski expert and mountaineer Victor Kutschera to assist, instruct and guide the skiers.

Assiniboine cannot be reached in less than two days, and is no place to run out for a weekend. Inexperienced skiers should not attempt the trip alone. For this reason I have established a weekly guide (and mail) service.

One of my men is to be found in Banff every Thursday. He starts out on Friday morning during our season, March and April. At Assiniboine I do the guiding myself, being one of the two awarded a so-called "1st Class Alpine Ski Mountaineering Guide's License" (no less). Victor Kutschera is the other.

From time to time, other camps will surely pop up. North America's best winter playground is in the making. We started something only seven years ago that no power in the world could stop today. And in years to come the leader of that first trip, of which I have told, Marquis degli Albizzi, and myself, who then acted as his assistant, will look back on the trip wondering if we ourselves at that time realized what the dudes did do.



(1) Mt. Assiniboine.

(2) And (3) Ski-ing Near Mt. Assiniboine.

RECORDS OF GLACIAL OBSERVATIONS IN THE CANADIAN CORDILLERA 1933 AND 1934

By A. 0. Wheeler
Chairman, Committee on Glaciers and Glacial Action

The Committee's report to the Annual General Meeting appears in The Gazette, No. 24, October, 1934, pages 15 to 21[1]. In condensed form it gives a synopsis of the work accomplished during the year 1933 but, owing to the large amount of data, it was not found possible to fully include the records obtained. Such records are here given so that they may be available for use and comparison when further observations of the glaciers dealt with are being made.

OBSERVATIONS MADE UNDER CLUB AUSPICES

Observations of the Yoho glacier were begun in 1906 and carried on annually by the writer for thirteen years until the recession of the ice rendered a continuation of the series no longer possible.

During this period observations of the Illecillewaet, Asulkan and Victoria glaciers were periodically made by George Vaux Jr. and Miss Mary Vaux.

The records of such observations appear in the respective Club Journals, 1906 to 1918.

In 1911 observations of the Robson glacier were begun by the writer and made at three other intervals: by the writer, 1913, 1924, and by H. F. Lambart, 1922. The records appear in the respective Journals.

In 1931 an expedition comprised of H. E. Sampson, A. S. Sibbald and the writer visited the Yoho, Illecillewaet, Asulkan, Victoria and Robson glaciers and checked up the changes that had taken place. A report of their findings appears in the 1931 Journal, pages 120-142.

At the Annual General Meeting of 1932 a Committee on Glaciers and Glacial Action was created, subsequently sub-committees of a number of the Club's sections formed and a programme outlined for the year 1933. The results are here dealt with.

GLACIERS OBSERVED IN 1933

The New York and Minneapolis sections, represented by J. Monroe Thorington and H. S. Kingman, made observations of the Bugaboo, Bow and Peyto glaciers; the Winnipeg section, represented by A. A. McCoubrey and Roger Neave, of the Yoho and President glaciers; the Regina and Saskatoon sections, represented by H. E. Sampson and A. S. Sibbald, of the Upper Wenkchemna and Opabin glaciers; the Calgary section, represented by H. F. Dickson and I. Vanderburg, of the Balfour and Peyto glaciers; the Edmonton section, represented by C. G. Wates, of the Para glacier; the Vancouver section, represented by Don Munday, of the Scimitar glacier; and the Vancouver Island section, represented by Lieut.-Col. E. 0. Wheeler and A. 0. Wheeler, of the Illecillewaet, Asulkan and Victoria glaciers. In all, thirteen glaciers were dealt with and the records of marks placed for future reference are here given in the order of their naming.

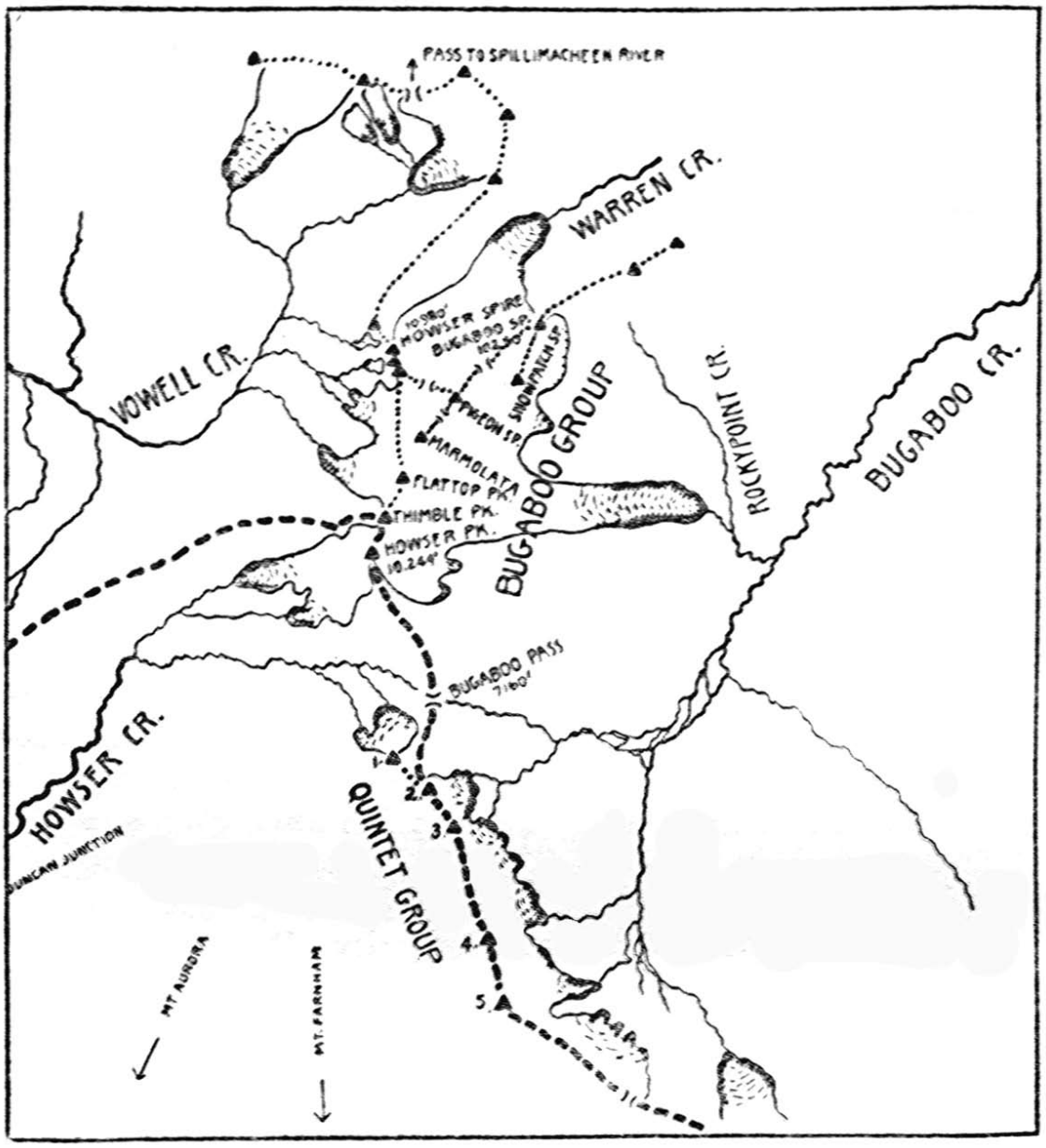
Reference to "the Report" means the report to the Annual General Meeting as published in the Gazette previously referred to.

1 On p. 20 the last word of the third paragraph of report on Illecillewaet glacier should read "ice" instead of "rock."

BUGABOO GLACIER

Report by J. Monroe Thorington

The observations were made by Dr. Thorington, assisted by Mrs. Thorington, on June 25, 1933. They established a photographic station on the old terminal moraine, slightly less than half a mile from the ice. This point was selected as being easily recognizable by anyone approaching the glacier. The large and highest angular boulder of the moraine, on the north side of the stream, was marked by a large circle of white paint. "This terminal moraine is one of the oldest and best-formed; it crosses the valley in a wide arc and is timbered on the down-stream side. Between this and the ice the Bugaboo gravel flats are broken by several smaller, less continuous ridges of terminal moraine, possibly evidence of cycles of arrest of retreat. The exposed lateral moraines are amazing in their height and, in its former extent, the tongue must have been magnificent."



Sketch Map Of Bugaboo Glacier

A large square boulder at the ice terminus, close to the stream on its north side, was marked and dated. Lateral photographs were taken of this stone and the ice. The marked boulder is the nearest permanent mark available, not more than five feet from the ice seen in the picture.

See also "the Report" to the Annual Meeting.

BOW GLACIER

Report by J. Monroe Thorington

No measurements of the glacier have been made. Its change is shown by photographs taken at intervals from 1897 to 1933. Photographs by Dr. Thorington in 1922 and by H. S. Kingman in 1933 serve to show the marked shrinkage of the ice.

See also "the Report" to the Annual Meeting.

PEYTO GLACIER

Report by J. Monroe Thorington

Observations of the Peyto glacier were made by Dr. Thorington, assisted by H. S. Kingman of the Minneapolis section, on July 17, 1933.

Dr. Thorington writes: "No previous measurements of it have been made, but it was photographed by Wilcox in 1897 and by the present writer (Dr. Thorington) in 1923, so that we have a useful record of its considerable retreat and subsidence." . . . ''Based on examination of photographs, we estimate the retreat from 1897 to 1933 to be 700-800 feet. Of this approximately two-thirds took place in the interval 1897-1923. In the interval 1928-1930, the retreat was about 150 feet, with an even slower recession since that time."

On July 19, the observers established a photographic station on a conspicuous boulder of the east lateral moraine, some 250 feet below the ice, and marked it by a large circle of white paint, "within or just above which was painted 'Camera 1933.' It is visible for at least 100 yards as one approaches the tongue."

"The ice terminus was fortunately against a smooth, permanent rock outcrop. I marked a vertical streak about 5" high directly up from the ice contact and added the numerals '1933.'"

"An extremely useful natural marking of the ice terminus on the western lateral moraine occurs through the fact that the ice has retreated exactly to the small rocky canyon occupied by the stream from Cauldron lake, this stream no longer running beneath any part of the ice, but joining the glacial torrent along the ice front."

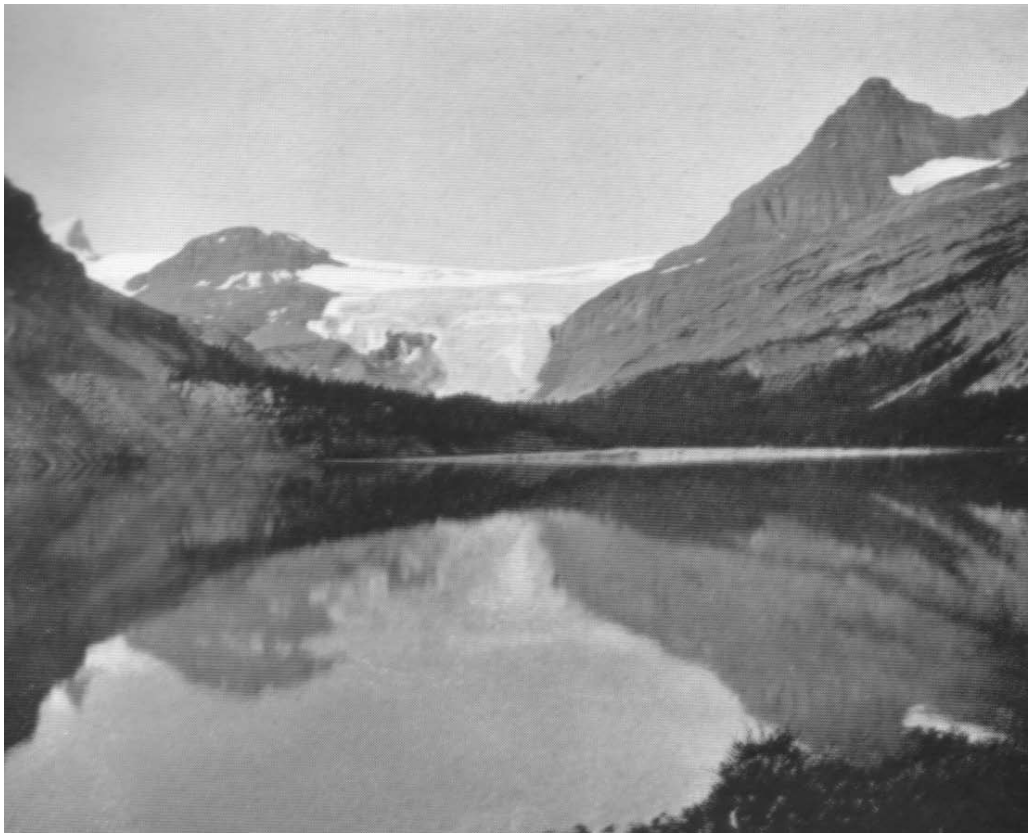
See also "the Report" to the Annual Meeting.

YOHO GLACIER

Report by Roger Neave

On August 15, 1933, Mr. Neave visited the Yoho glacier with the object of marking the position of the ice: "It is a well-defined snout bounded on either side by steep, well-polished rock walls, that on the true right being the cliffs of Yoho peak and on the left a prominent rock rib. On the face of this latter and about ten feet above the stream I marked the rock, in white enamel, with a vertical line and the following inscription: 'R.N. Aug. 1933, 80 ft. to nearest ice.' I also took a photograph of the tongue from the point marked."

For comparison with Mr. Neave's photograph refer to the Canadian Alpine Journal, 1931, illustrations opposite page 123.



Bow Glacier, 1922. *Photo J. M. Thorington*

Bow Glacier, 1933. *Photo H. S. Kingman*

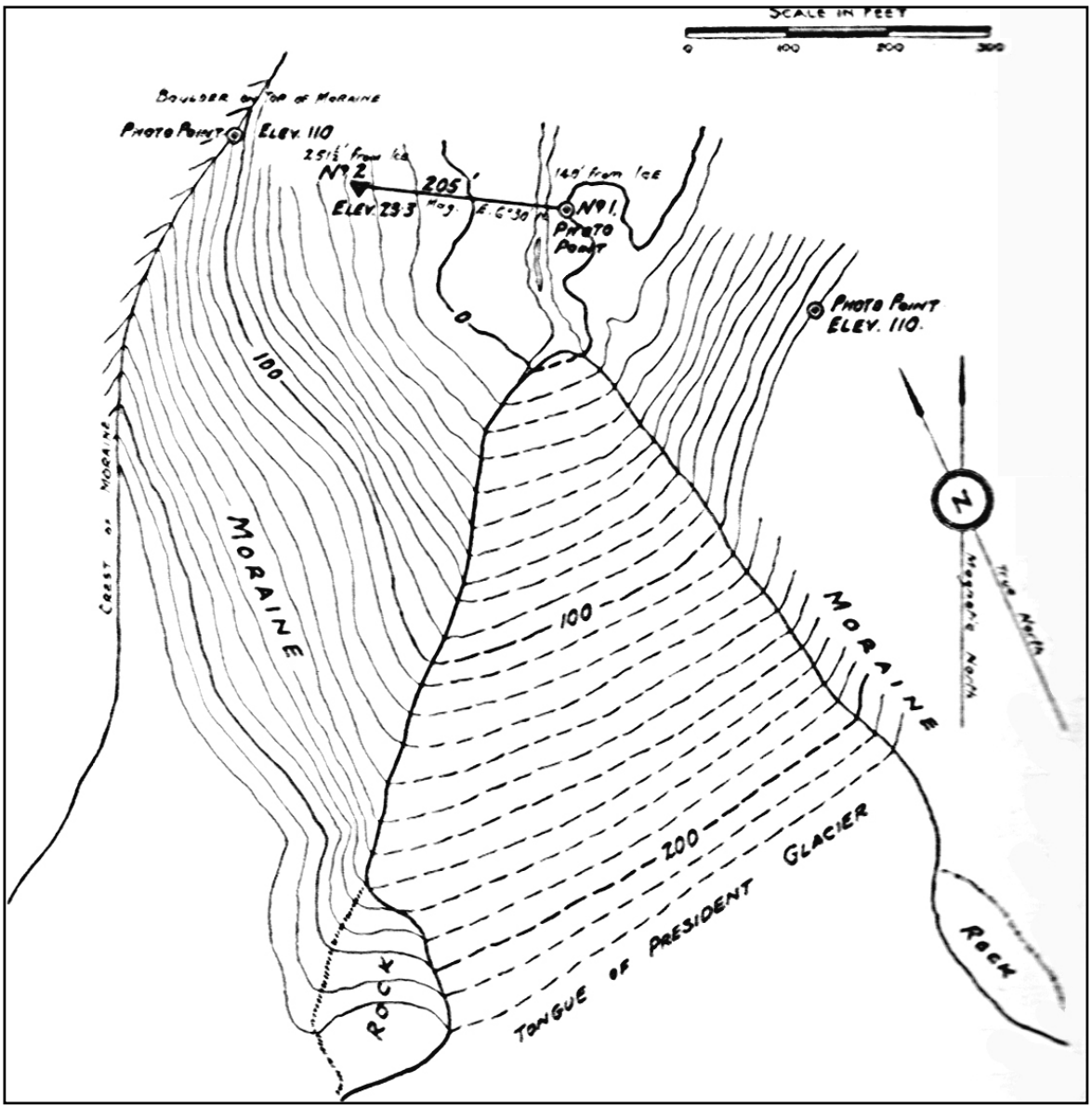
PRESIDENT GLACIER

Report by A. A. McCoubrey

See "the Report" to the Annual Meeting.

A sketch map of the plane table survey was constructed by Mr. McCoubrey from field notes furnished by Mr. Roger Neave.

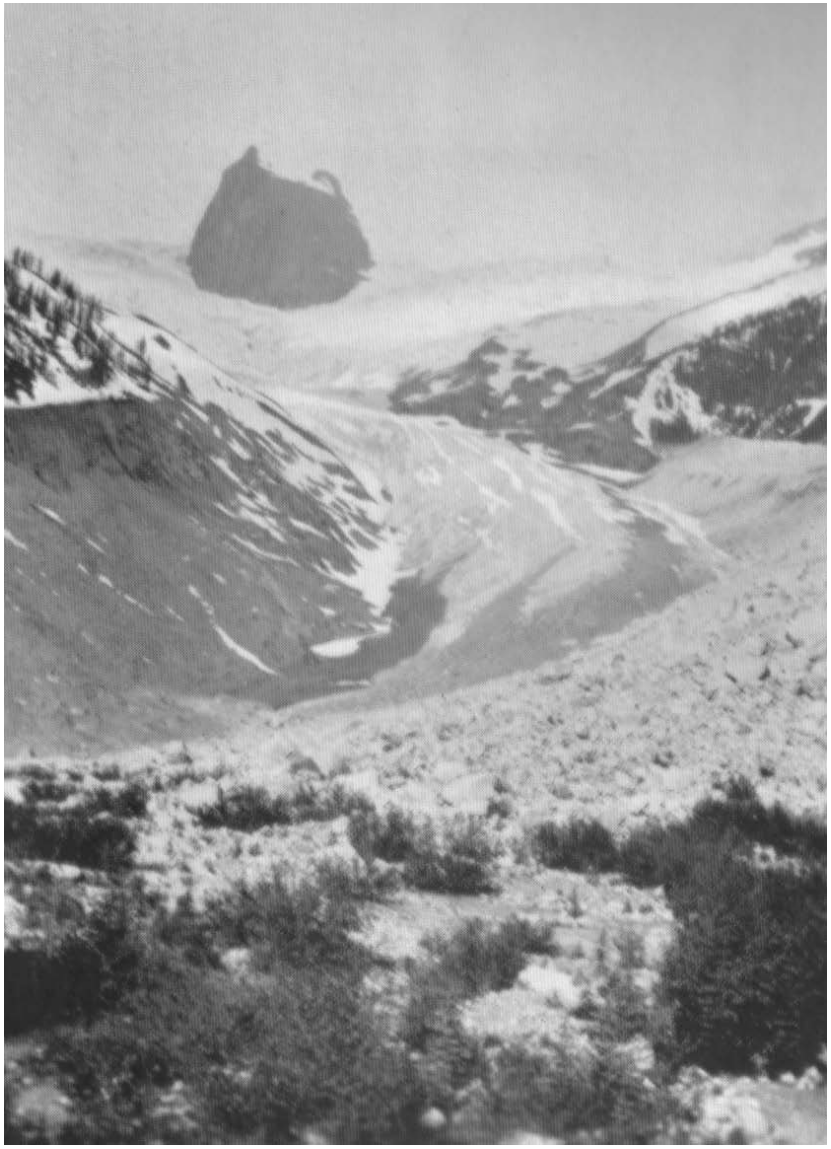
Mr. McCoubrey has a good picture of the tongue of the President glacier taken by him twenty-six years ago and believes it may be possible, by the aid of other pictures taken between then and now, which he is trying to collect, and by additional field work to reconstruct the story of the retreat of the glacier in that time. He is also gradually arranging an album containing some hundreds of pictures, which will illustrate the Toby glacier over a period of years.



Sketch Map Of Tongue of President Glacier

Contour interval 10 feet

Marked Boulder At Terminus Of Bugaboo Glacier, 1933.
Photo J.M. Thorington



Bugaboo Glacier, 1933 From Camera Station On Terminal Moraine.
Photo J.M. Thorington

President Glacier, 1933 From Photo Point (El. 110) On Left Lateral Moraine. *Photo R. Neave*

President Glacier, 1933 From Photo Point 1, 140 Feet From Ice. *Photo R. Neave*

UPPER WENKCHEMNA GLACIER

Report by A. S. Sibbald and H. E. Sampson

July 15, 1933, Andrew S. Sibbald, assisted by H. E. Sampson, visited the ice-forefoot of the Upper Wenkchemna glacier above the Fay hut and selected and marked two viewpoints. Viewpoint No. 1 is S.E. from the ice-foot on top of some sloping, ice-scored rock about one-eighth of a mile from it. The rock is marked with white enamel paint and a low cairn was built to identify it. Photograph taken therefrom looks N.W. across the ice-tongue with No. 6 of the Ten Peaks and an outlier on the sky-line.

Viewpoint No. 2 is a white boulder, 5 x 2½ x 3 feet, imbedded in the west lateral moraine at the foot of the ice-tongue. Distance therefrom to foot of the ice is 93 feet 4 inches. Direction from viewpoint No. 2 to foot of the ice is 36° E. of N. (corrected for declination).

Viewpoint No. 2 was marked as such with white enamel paint. Mr. Sampson standing in the snow and slush at extreme tip of the ice indicates its position in the photograph.

OPABIN GLACIER

Report by A. S. Sibbald and H. E. Sampson

See "the Report" to the Annual Meeting.

BALFOUR GLACIER

Report by H. G. Dickson and I. Vanderburg

The observations were made on July 27, 1933. Photographs marked "Balfour V.P.I" were taken from the first large boulder in the centre of the gravel wash approaching the glacier from the lake. The boulder, of light grey limestone, was marked "A.C.C., July 27/33, Viewpoint No. 1." The camera tripod was placed on the highest point of the rock at a spot marked by a cairn.

The observers then followed up the gravel wash, crossing streams, to two dark-grey boulders used for a second photographic point. These boulders are the two largest in the gravel wash. The photograph, marked "Balfour V.P. 2" was taken from the top of the smaller boulder at the spot marked ⊕. The E.S.E. face of the boulder was marked "A.C.C., July 27/33, No. 2." Above this mark is an arrow pointing to the spot used in taking the photographs.

A six-shot panorama was taken about two hundred yards from the forefoot. The spot could not be marked as there was no suitable boulder and a cairn would have been useless, owing to flow of water from the glacier. The two men standing at the right of the big ice cave give an idea of its size. They are forty feet from the face of the ice.

Measure point A: a six-foot block of dark-grey rock was marked "A.C.C., July 27/33, nearest ice 84 ft. 3 in., Measure Point A." The rock was also marked with an arrow on the other three sides.

Compass reading to nearest ice 251° mag. Compass reading to right side of large ice cave 192° 30' mag. Compass reading to highest peak of Mt. Balfour 202° mag.

Compass reading to sharp peak (second to left of Bow Peak, looking down the valley) 346° mag.

Measure point B: Directly in line between the sharp peak referred to above and the lower rock peak of Mt. Balfour was found a natural cairn, or rough pile of morainal rock, seven to eight feet high. At the top of this the observers wedged a slab of grey rock, streaked with white, about two and a half feet long by one foot wide, This was marked "A.C.C., July 27/33, Ice Cave 109 ft. 11 in., Nearest Ice 60 ft. 2 in., Measure Point B." The measurement to the ice cave was to the right

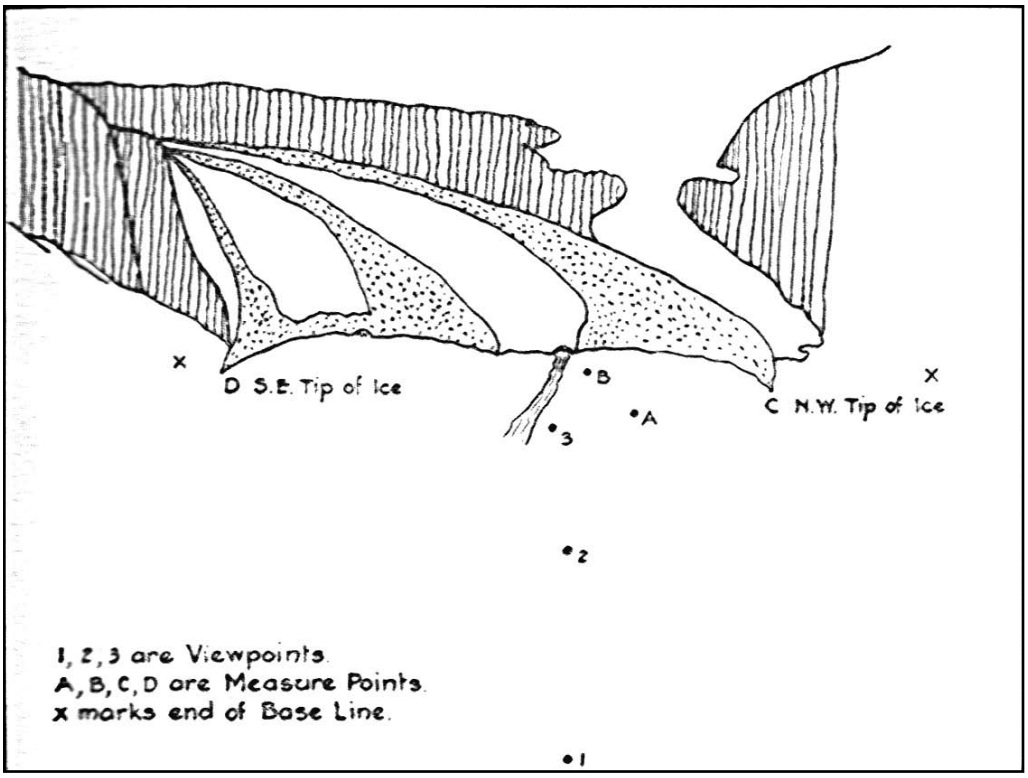


Diagram of Balfour Glacier Tongue

side and a compass to the same point 207° mag. Compass reading to nearest ice 265° 30' mag.

Measure point C: A cubical block of brown stone (about four feet each way) straight down the valley from the N.W. tip of the forefoot was marked on its S.E. face "AC.C., July 27/33, Nearest Ice 150 ft. 7 in., Measure Point C." Compass reading to lower rock peak of Mt. Balfour 185° 30' mag. Compass reading to point on west wall of valley where black and brown rock faces meet, probably 200 yards away, 329° mag. The nearest point of rock wall, used as N. end of base line, is approximately 125 yards away.

Measure point D: At the opposite side of the valley, approximately 80 yards west of the south end of the base line, a mark was painted on a horizontal band of grey rock just below a band of yellow. The ice projected 31 feet beyond this point. It was marked "A.C.C., July 27/33, End of Ice 31 ft. N., ⊕, Measure Point D."

South end of Base Line: Is on a jutting grey rock some 50 or 60 feet above the level of the stream. A compass reading to the lower rock peak of Mt. Balfour was 191° mag. and to the sharp peak mentioned before 343° mag. The photograph taken from here is marked "Balfour, S. end of Base Line." On this photograph the N. End of base line is marked "1" and the N.W. tip of the forefoot is marked "2." The crossed circle marks the spot from which compass readings were taken. The rock is marked "A.C.C., July 27/33, S. End of Base Line, N. & S. Forefeet 319° E. of N.,⊕."

North end of Base Line: The light outcropping of rock on which the observers painted their mark faces a large, dark-grey boulder. The mark is 10 or 15 feet up the wall from the boulders and is 349 ft. 8 in. from the black outcropping marked "3" on the photograph from the S. end of the base. The photograph taken from the crossed circle has a horizontal arrow pointing to the man with the flag on the end of the ice at the N.W. tip of the glacier and a vertical line joins the marked rock

(S. end of base) to the end of the ice at the S.E. tip of the glacier. The rock was marked "A.C.C., July 27/33, End of Base Line, N. & S. Forefeet 137½° E. of N., ⊕."

"For the benefit of future observers we suggest that the base line be first found and that all 'Measure Points' except C will be between the line and the ice, owing to the crescent shape of the forefoot. C and D will then be easily found, as distances marked on them are measured from the tips of the crescent and so can be measured directly from the line."

A rough sketch is furnished with the report showing the approximate positions of the viewpoints, measuring points and base line.

See also "the Report" to the Annual Meeting.

PEYTO GLACIER

Report by H. G. Dickson and I. Vanderburg

Viewpoint No. 1 is on the exposed rock and gravel shoulder farthest N.W. of the summit of Bow pass. It is approximately N.E. of the forefoot of the glacier and forms a natural lookout point for a view of the lake and glacier. The photograph is marked "Peyto V.P. 1" and shows clearly the tree-clad promontories referred to below in describing the other viewpoints. A photograph taken from the glacier on July 29 has all three viewpoints marked on it.

Viewpoint No. 2: Was taken where the gravel wash opens out above the first big tree-clad promontory seen in the photograph from V.P. 1. The picture was taken from the middle of the gravel wash.

Viewpoint No. 3: Is on a boulder just beyond the next and last tree-clad promontory. A photograph showing this viewpoint accompanies the report.

The forefoot of the glacier projects between two rock walls. On the west side the rock wall is lower and, a short distance behind the forefoot, the ice extends over the rock and back to a high moraine. In this part there is an ice wall over nine feet high covered by heavy debris. It was from the top of this the picture showing the three viewpoints was taken. In front of the ice wall was found a boulder, part of which was dry enough for marking.

Measure point A: Is a large yellow-brown boulder, shown in a photograph with one of the party standing on it. The marking was put on the side opposite to that photographed, as follows: "A.C.C., July 29/33, A." On top of the rock an arrow was painted in line with the front of the ice walls. The distance measured to nearest exposed ice was 149 ft. 6 in. from the nearest point on the rock and in line with the arrow.

Crossing the stream that flows from the ice cave some marks were found, presumably made by Dr. Thorington in the previous week. This was most fortunate, as all the rocks around the forefoot, owing to the continuous heavy rainfall, were too wet to paint. On the rock wall to the east of the glacier was the word "Camera" with a circle around it and, nearer the glacier, the inscription "Ice 1933," and a stripe of paint on the rock wall and another stripe on a boulder, about five feet closer to the stream, seemed to have marked the end of the ice at the time of his visit. Using a line drawn through these two stripes as a base, the ice had receded eleven feet. A measurement taken from the stripe on the rock wall, marked "Ice 1933," to the nearest ice showed a distance of 18 ft. 6 in.

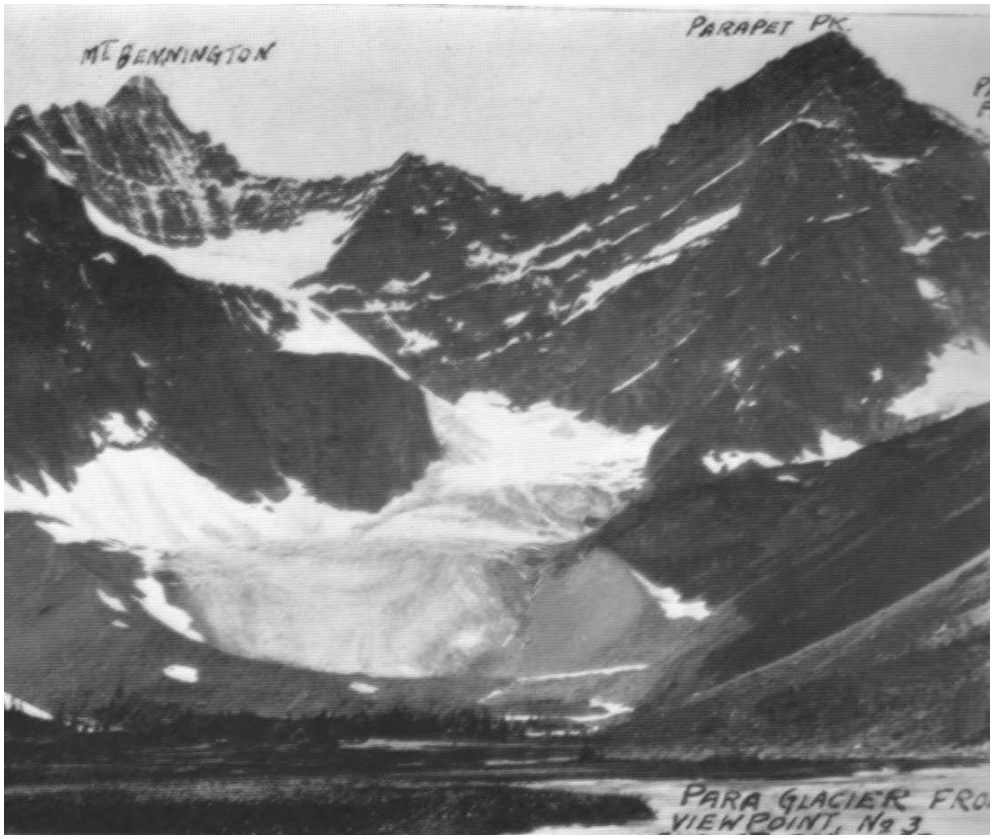
"We would recommend that on the next visit marks for the ends of a base line be made on the rock walls on both sides of the ice tongue." Storm conditions prevented this being done.

See also "the Report" to the Annual Meeting.

Peyto Glacier From View Point No. 3. *Photo Dickson And Vanderburg*

Peyto Glacier From Dr. Thorington's Camera Point. *Photo Dickson And Vanderburg*

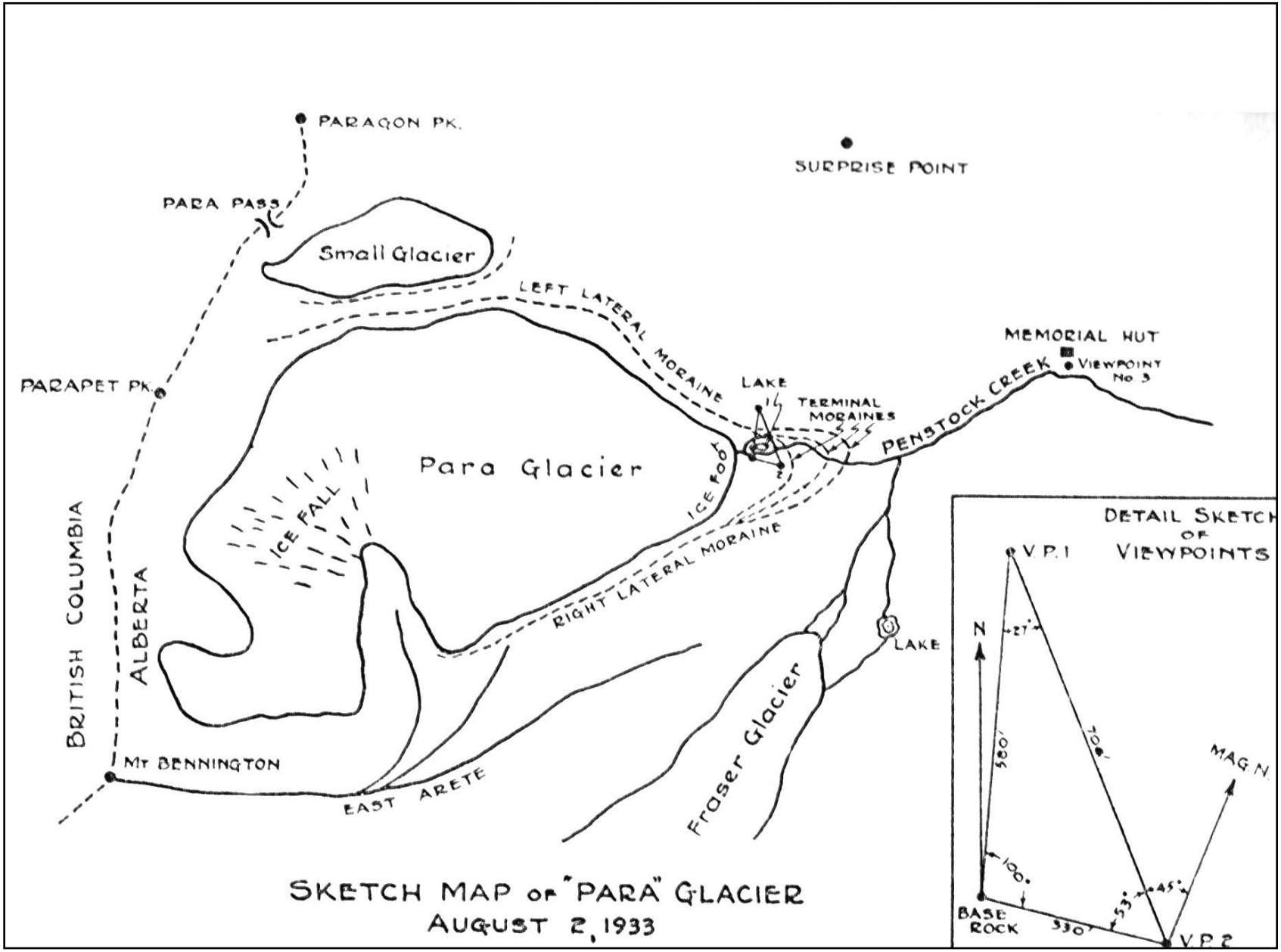
Outstretched arms are to show line marked by Thorington.



Para Pass

Para Glacier, 1933. *Photo C.G. Wates*

Para Glacier, 1933. *Photo C.G. Wates*



SKETCH MAP OF "PARA" GLACIER
AUGUST 2, 1933

PARA GLACIER

Report by C. G. Wates

The main ice stream flows approximately east. It is almost entirely free from crevasses and has an angle of descent of about 20°. It is fed chiefly by a steep and much broken ice-fall descending from the east arête of Mt. Bennington. There is very little debris carried by the centre of the glacier at the present time and almost complete absence of such phenomena as glacier tables, sand cones, etc.

A small secondary glacier descends from the pass between Mts. Paragon and Parapet (Para pass). It has formed its own terminal moraine, which separates it from the main ice stream. It is problematical whether this small glacier is still united to Para glacier under the moraine. It would appear that complete separation has taken place, since the small terminal moraine seems to be intact and no part of the debris from its lower edge is carried down by the Para glacier.

A large and symmetrical lateral moraine follows the true right edge of the main ice stream. A smaller lateral moraine follows the true left edge below the slopes of Surprise Point. There are three well-marked terminal moraines, indicating three periods of retreat of the ice, including that now in progress. The terminal moraines are crescent shaped. On the south side they unite in the crest of the right lateral moraine. Near the north side of the valley they are cut through by the stream which issues from the ice tongue.

Immense quantities of glacial flour and silt are being formed. The valley of Penstock creek for half a mile below the last moraine is filled with this silt, over which the stream meanders in a constantly shifting channel. Silt is also being' deposited between the nearest moraine and the ice tongue, resulting in the formation of a small glacial lake.

Four stations were established for observations as follows:

Base rock: This is a flattish rock about four feet across and purplish-grey in colour. It is (or was) situated on the south side of the terminal lakelet, about one-third of the way from the right lateral moraine. It is marked with red paint on top "⊙ ←" and on the N.W. side "A.C.C., Edmonton Section, Aug. 2nd, 1933, To ice 188 ft."

Viewpoint No. 1: A large flattish rock, grey in colour and partly covered by lichen. It is situated on the slopes of Surprise Point above the N. lateral moraine and about fifty feet below a very prominent square, light-brown rock. It is marked "A.C.C., Edmonton, Aug. 2nd, 1933, Viewpoint No. 1."

Viewpoint No. 2: A large light-brown rock on the crest of the right lateral moraine or, more correctly, on the crest of No. 3 terminal moraine, about fifty feet elevation above the level of the ice tongue. The N. face of the rock is marked "A.C.C., Aug. 2nd, 1933, Viewpoint No. 2."

Compass bearing from V.P. No. 2 to Base rock— 262° mag.

Compass bearing from V.P. No. 2 to V. P. No. 1— 315° mag.

Distance from V.P. No. 2 to Base rock—330 feet. Direction of photograph from V.P. No. 2—towards Base rock.

Viewpoint No. 3: Is situated on the north bank of Penstock creek close to the bridge at the Memorial hut.

It was used to obtain a photograph showing the general conformation of the glacier and the adjacent peaks.

All markings were made with red paint. It is not certain that the base rock is permanent, as there is a possibility of dead ice under the silt at this point. The compass bearings and the measured distance, V.P. 2 to base rock, will enable future observers to check any movement of the rock. The

sum of the two measurements, V.P. 2 to base rock 330 feet and base rock to ice 188 feet, may be taken as the distance from V.P. 2 to the ice, with a possible error of two feet, as the three points were approximately in line.

An approximate sketch, which serves to show the general topography of the glacier and location of the points established, accompanies Mr. Wates' report.

See also "the Report" to the Annual Meeting.

SCIMITAR GLACIER

Report by Don Munday

No view or measuring points were established as, unfortunately, Mr. Munday lost his tape measure. His report is a general description of the action and characteristics of the glacier, accompanied by two, photographs.

See "the Report" to the Annual Meeting.

ILLECILLEWAET GLACIER

Report by Lieut.-Col. E. 0. Wheeler

Owing to inaccessibility, on July 10, 1933, a plane table triangulation was made. A base of 458 feet was measured from the Vaux 1910 rock, A B on the accompanying photograph. This base was extended by graphic triangulation to a wider base C D between the lateral moraines. Rays to the snout were taken from both ends of the short base and from both ends of the extended base, viz: from A, B, C and D, making four in all, and the graphic triangulation was carried out on two scales. A good mean position of the snout was thus found; it is thought that the error in the distance so obtained does not exceed 1/100.

For fuller details see "the Report" to the Annual Meeting.

Refer also to the 1931 Journal, pages 124-127.

ASULKAN GLACIER

Report by Lieut.-Col. E. O. Wheeler

See "the Report" to the Annual Meeting.

Refer also to the 1931 Journal, pages 127-129.

VICTORIA GLACIER

Report by Lieut.-Col. E. 0. Wheeler

See "the Report" to the Annual Meeting.

Refer also to the 1931 Journal, pages 129-133.

A portfolio of photographs and sketches, attached to the several reports, accompanied the Chairman's report to the Annual General Meeting, which is published in the Gazette. It obviously would not be possible to reproduce all of these in the limited space of the Journal. Access to this data, as well as to the full reports of the observers, can be had by future observers on application to the Chairman of the Committee on Glaciers and Glacial Action.

OBSERVATIONS IN 1934

FBESHFIELD GLACIER

Report by J. Monroe Thorington

Dr. Thorington's report is here given verbatim.

Refer to the 1931 Journal, page 139, for fuller information of methods.

"The following comprises the fourth series of measurements of the Freshfield glacier made at four year intervals, the first observations having been made in 1922. The 1922, 1926 and 1930 results having been published previously, the present note deals only with the 1934 measurements, made on July 4 and 7 by the writer, assisted by Mr. H. S. Kingman.

1. Measurement of the Rate of Surface Velocity:

"Of the 1922 line of plates, Nos. 5, 6, 8, 9, 10, 11, 12 were discovered on the ice. No. 11 had overturned, having doubtless formed a small table and fallen from its pedestal. It was located by pacing. The remaining plates have probably fallen into crevasses.

The plates found, being comparatively close together in the central part of the glacier, do not lie in any considerable arc, all being within approximately 30 ft. of a line transverse to the glacier.

Plate No. 8 is now 980 ft. below the 1922 line A-B. This gives an average daily motion of 2.49 inches for a twelve year period against a July daily motion in 1922 of about 4.5 inches. Since, however, during the interval 1922-26 these stones had maintained an average daily motion of 3.1 inches per day, it is evident that the general advance is slowing as the stones approach the ice terminus.

2. Observations on the Tongue and its Retreat:

"Test photographs were taken from Station C and reveal the vertical subsidence and lateral and terminal ablation. Terminal ice is now 900 ft. from rock H, which was in contact in 1922. This gives an average daily retreat of 2.54 inches, practically equal to the rate of advance of the numbered plates on the ice during the same period. The vertical shrinkage is a more noticeable feature than the terminal retreat.

3. Erratic Boulders:

"The great boulder now rides on an ice pedestal pierced by a large hole, through which it is possible to walk almost upright below this enormous mass of rock (estimated 10,000 cubic feet). It is situated 275 ft. above the line A-B, having advanced 1276 ft. or 8.56 inches per day since 1922. This rate has steadily diminished: 505 ft. (1922-26), 426 ft. (1926-30), 345 ft. (1930-34).

The triangular erratic painted "1922" now lies directly on the line A-B. It is 410 ft. from the great boulder, this distance having increased from 350 ft. in 1922.

4. General Features:

"The secondary tongue in the lateral depression adjacent to the Niverville meadow has now practically disappeared, retreating and flattening so that its terminus is practically in line with the northern margin on the main tongue,

"Conclusions: The Freshfield glacier continues in a state of retreat, all motion becoming more sluggish as vertical shrinkage diminishes the mass of the ice stream."

(Owing to lack of time no measurements of the Lyell tongue could be carried out).

FRANKLIN GLACIER

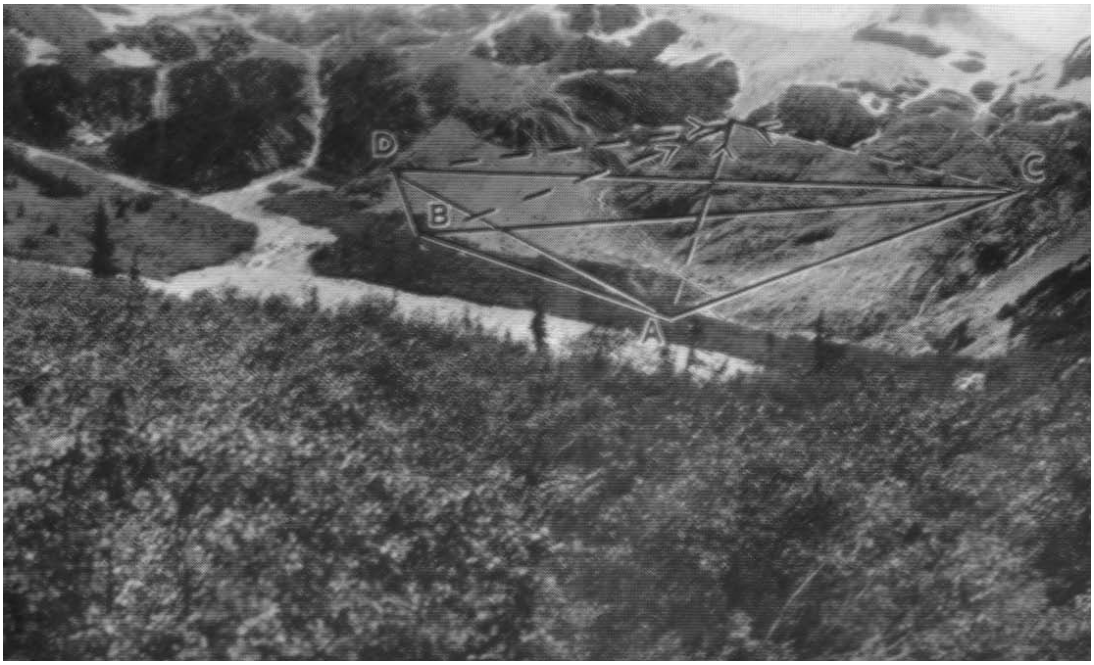
Report by Don Munday

Mr. Don Munday, assisted by Mrs. Munday, succeeded in 1934 in measuring the recession of the Franklin glacier. It was found to have receded 1545 feet since 1927. Two big rocks were painted to mark this retreat. Mr. Munday states: "As it seems likely other parties will be into the region it may be possible to continue observations."

Refer to the 1931 Journal, pages 140-141 for fuller information.

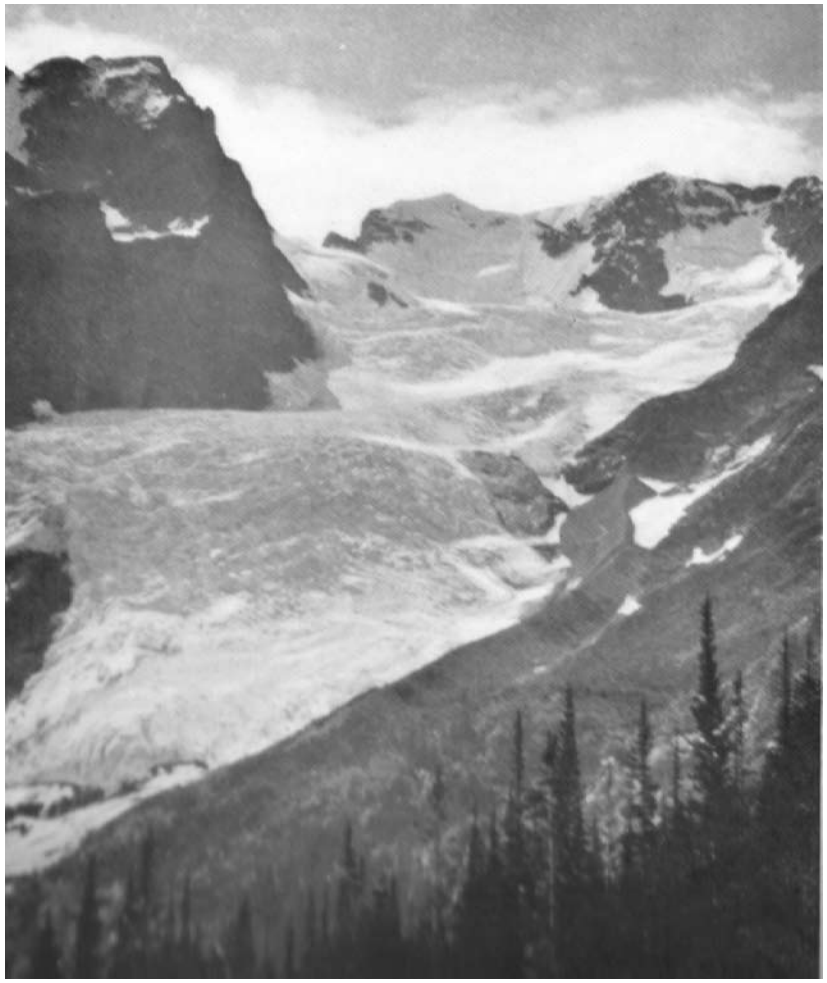
Balfour Glacier, 1933. *Photo Dickson And Vanderburg*

From View Point No. 2



Illecillewaet Glacier, 1933. *Photo E.O. Wheeler*

From "Photo Rock" Showing Triangulation



Tobaggan Glacier 1933. *Courtesy Canadian Mining Journal*

Tobaggan Glacier, 1911. *Courtesy Canadian Mining Journal*

This glacier is in the Bulkley Mtns. In lat. 54° 45' and near Smithers.

SCIMITAR GLACIER

Mr. Don Munday states: "My observations of Scimitar glacier forced me to reconsider the whole subject of glacial advance and retreat in that region, and I find widespread evidence of a considerable advance prior to the present retreat."

We hope to present a report on the subject in the next Journal.

VERTICAL EXTREMES

By N. E. Odell

In the interesting article by Dr. Neal M. Carter, entitled "Vertical Extremes on the Coast of British Columbia," in the Canadian Alpine Journal for 1932, striking figures are given of the remarkable differences in elevation that have recently been determined on that section of the Canadian coast-line. In citing some extreme depths in other parts of the world which exceed the deepest in British Columbia, namely 2440 feet in Homfray channel of Toba inlet, Dr. Carter mentions Songe fjord, Norway, 4000 ft. deep and Messier channel, Patagonia, 4252 ft. Incidentally Messier channel has been regarded as the deepest known 'longitudinal' fjord, while Baker fjord, which is connected with it, until recently had the deepest sounding, viz., 4081 ft., of any known 'transverse' fjord: that is, one running in direction across the trend of the mountain ranges and the coast-line.

Last summer (1933) I visited Northeast Greenland, which has perhaps the most magnificent system of fjords in the world. Our ship carried an echo-sounding apparatus and with this remarkable instrument we were able to determine the depths of such fjords as time and circumstance enabled us to traverse.

The great Franz Josef fjord runs some 120 miles inland from the coast, and its greatest ascertained depth proved to be 416 fathoms, or 2496 ft. The interesting thing about this depth is that it is opposite one of the sheerest and most impressive cliffs that it has been my good fortune to gaze upon: this is the great wall of Attestupan, which rises almost perpendicularly from the waters of the fjord to an altitude of 5904 feet, and would appear to be the highest fjord or sea-cliff known. These figures give a vertical range from the fjord-bottom of 8400 ft., which exceeds, it may be said in passing, all the British Columbian vertical ranges given by Dr. Carter, except that of the upper end of Jervis inlet, 9565 ft.

But farther south on the east coast of Greenland is Scoresby sound, which seems to constitute the world's longest as well as deepest single fjord system. The Danish Expedition under Dr. Lauge Koch discovered in 1933 that the bottom drops to 4500 ft. Since mountains in the neighbourhood rise to 2100 metres, or 6890 ft., we have in Scoresby sound a total vertical range of about 11,400 ft. Moreover Scoresby sound is an example of a transverse fjord.

In bringing forward these figures there is, of course, a certain element of choice as to what shall be taken as the highest neighbouring elevation relative to the particular deep sounding for the determination of the 'total vertical range.' In the case of Franz Josef fjord mentioned above, Attestupan rises in one unbroken slope of 8400 ft. above the bottom of the fjord. If the highest mountain in that neighbourhood were taken, namely Petermann Peak, 9650 ft., which, however, is some 20 miles from the fjord, a total vertical range of 12,146 ft. could be registered.

But particular interest attaches to those cases where there is a continuously steep slope from mountain top to fjord bottom.

New Zealand would seem to be able to offer notable examples, but I cannot find record of greater direct and continuous vertical range than in Milford sound, where Mitre Peak, 5560 ft. which forms part of the southern wall of that magnificent inlet drops to a depth of 1284 ft. at a point directly opposite, thus giving a vertical difference of 6844 feet.

Now that the old lead line is superseded by the revolutionary echo-sounding apparatus, which is able to take a continuous record of the depth of the bottom whilst the ship proceeds on its

way, we are quickly obtaining more and more information of a character that should, in the case of fjords, enable us to understand better the intricacies of their formation, and also should throw light upon such questions as the rigidity of the outer crust of the earth, and its ability to maintain these abrupt and immense vertical extremes.

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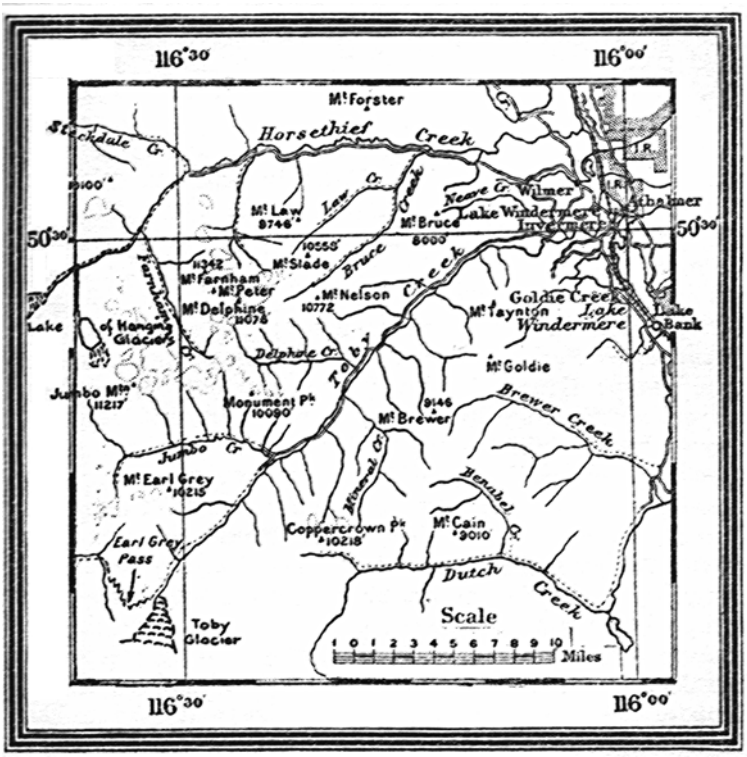
A STUDY OF THE FLORA AND FAUNA OF THE REGION DRAINED BY HORSETHIEF CREEK, BRITISH COLUMBIA

By Titus Ulke Ph.D.



The following notes refer to the plants and wild life of that little-explored portion of the Kootenay District of southeastern British Columbia which is drained by Horsethief creek, and thus includes the eastern slope of the Purcell range, above Starbird and Maye glaciers, and the region about the Lake of the Hanging Glaciers.

Horsethief creek is a moderately broad and shallow stream located about 60 or 70 miles south of Yoho park, B.C., in latitude 50° 30' approximately and extends from its source, in the snout of Starbird glacier for about 42 miles in a general eastwardly direction to its mouth at the Columbia river, a few miles north of the town of Wilmer. (See the subjoined map).

The elevations above sea level of the creek at its mouth and at its source are about 800 and 2000 meters, respectively. It flows through a gravel-strewn glacial valley, enclosed by many lofty peaks, some of which tower up to over 3400 meters in height.

Barring the stream and glacial gravel deposits of Pleistocene and Recent age found along the creek, the rocks of the area studied seem to belong almost entirely to the late Precambrian age and consist of slates, limestones, conglomerates and quartzites, with an occasional stock of granite.

Our picturesque main camp, where we members of the Alpine Club of Canada had our headquarters from July 19 to 31 in 1928, was located on Horsethief creek a mile or so below the Lake of the Hanging Glaciers at an elevation of about 1900 m.

It was reached by an 18-mile long rough pack-trail from the base camp, which was pitched near the junction of Horsethief and Gopher creeks. This base camp located near the old Starbird

ranch, was accessible over a 21-mile long, rough auto road from Wilmer, which little town is situated near the end of the scenic Banff-Windermere highway, and is located about 105 miles southwest of Banff, Alberta, on a bench above the valley of the Columbia river near its source.

Botanical excursions were made from our main camp to the Starbird and Maye glaciers and climbs effected of Mts. Dome and David Thompson, each about 3300 meters high.

The flora of the Horsethief creek region, if the foothills along the Columbia river be included, is, in general, remarkably like that of the Yoho park area, some 60 or 70 miles to the north, which flora, according to my recent census, numbers about 600 species. In less than two weeks of actual collecting the writer discovered about 405 species.

Along the trail to our main camp we passed through many rather heavy stands of coniferous woods, consisting chiefly of Engelmann spruce, Douglas fir, giant cedar, western larch, lodgepole pine and balsam fir, which occasionally included soft woods such as black cottonwood, mountain maple and aspen, and through rank thickets of fireweed, cow parsnip and thimbleberry associations and devil's club and alpine lady-fern plant formations.

Among twenty-six plant species collected about Horsethief creek, but not as yet discovered in Yoho park, and most of which are characteristic of either more southern or more western watersheds, the following are of special interest: *Woodsia glabella,* collected in a crevice of shale rock above the Lake of the Hanging Glaciers; Western Larch *(Larix occidentalis)* growing at the lower altitudes; Mariposa Lily *(Calochortus elegans)* found scattered about Wilmer, together with *Zygadenus paniculatus,* the Death Camas; Sanson's Willow *(Salix brachycarpa* var. *Sansoni Ball)*, noted in an alpine meadow; Pursh's buttercup *(Ranunculus Purslii)* growing in a shallow pool near the base camp; Gray's White Water-crowfoot *(Batrachium grayanum)* floating in a pool 3 miles beyond Starbird ranch; James' Whitlow-wort *(Paronychla Jamesii)*, a single specimen secured in dry soil near the mouth of the creek; *Smelowskia americana,* high up on Mt. David Thompson; Red Stonecrop *(Khodiola integrifolia)* found near the Lake of the Hanging Glaciers; Suksdorfia *(Suksdorfia violacea)* found by N. B. Sanson on mossy ground near the main camp; Tall saxifrage *(Saxifraga moniana)* occurring on a slope above the Lake of the Hanging Glaciers; Scouler's St. John's Wort *(Hypericum Scouleri)* abundant at the foot of the Starbird glacier moraine; Glandular blue Beardtongue *(Pentstemon virens)* scattered on the grassy slopes north of the main camp and the Four-angled Cassiope *(Cassiope tetragona),* abundant about timberline.

A very showy, white-flowered variety of the Alpine fireweed *(Epilobium latifolium)* not heretofore reported by others, as far as I can ascertain, was discovered growing there abundantly, together with the common pink form of the Alpine fireweed, in the alpine meadows just below the snout of the Starbird glacier. Its cultivation, because of its striking beauty, should certainly be attempted.

Other usually rather rare or strikingly pretty plants noticed were the moonwort, low selaginella, white-bark pine, Lyall's larch, reticulated blue larkspur, large coral root, white mitrewort, fleshy saxifrage, arctic raspberry, salmon berry, dwarf-swamp laurel, large false forget-me-nots, large purple fleabane and purple aster, and Hooker's thistle.

The effect of the much greater precipitation in the Purcell range and Selkirks than in the Rockies is very noticeable in the increased luxuriance of the vegetation resulting therefrom, in passing westward across the valley of the Columbia river. The trees are not only of a larger growth, but of a greater variety, and the undergrowth much richer.

As to the fauna of the region studied we found an unexpected scarcity of big and small game, probably due to the legal or illegal hunting and trapping. On the way in, a large yellow-

haired porcupine was observed on the trail, but no large mammals, and on the way out a single American moose and a wapiti were seen. Mountain goats were observed in small bands on the rock slopes above our main camp. Two mule deer were seen on the Starbird glacier moraine. A black bear coming suddenly on the trail stampeded one of our pack trains.

Of smaller mammals, Richardson pine squirrels and mantled ground squirrels were plentiful, and Columbian ground squirrels not uncommon. A number of hoary marmots and rock rabbits (Pikas) were observed on the boulder field below the Lake of the Hanging Glaciers, and at the bases of the perpendicular cliffs above our main camp nests of the bushy-tailed wood rats (pack rats) were noted. A little shrew was observed travelling across a wet meadow near our main camp.

As regards birds, sandpipers (the spotted sandpiper only being identified), and a belted kingfisher were seen feeding and flying about the shores of the creeks and small lakes. Richardson's grouse (blue grouse) and a few southern white-tailed ptarmigan, some with their young, were noted about the Lake of the Hanging Glaciers, and a specimen of Franklin's grouse was encountered on the trail. Some ptarmigan were also observed on the snowfields.

A golden eagle was seen soaring about the peak of Mt. David Thompson, and from the crest of the peak the writer noted far below what appeared to be a fight between several grey-crowned rosy finches and a sparrow hawk.

American three-toed and northern hairy woodpeckers and red-shafted flickers were observed climbing and pecking on dead trees at the main camp and along the trails.

A number of unidentified humming birds with dark gorgets, and therefore, males only, were encountered skimming over the snowy fields and glaciers, and probably feeding on the tiny insects of many kinds which were often observed crawling over or imbedded in the surface of the ice and snow. Probably these tiny gems of the air were of the rufous humming bird species, as this is the common humming bird of British Columbia, and is seen in suitable localities everywhere.

In this connection it may be of interest to note that at Banff on August 1, numbers of rufous humming birds, but only females, were observed visiting flowers and engaging in fierce miniature battles among themselves, while males were totally absent. Apparently, as Taverner surmises, the gay Lothario leaves his mate to her maternal duties, follows the flower season up the mountain sides, and in the alpine meadows at higher altitudes finds a prolonged flower-producing spring, as well as an abundant supply of the tiny insects, necessary to its welfare, on the snowfields.

Flycatchers were noted in the woods along Horsethief creek, but not identified. The black-headed and Canada jays, as well as the western crow and Clarke's nut-cracker, were frequently observed about the camps. White-crowned sparrows and western snowbirds were seen and heard singing in the brush and forests of the lower altitudes. MacGillivray's warbler and the western yellow throat were heard and seen in the bushes along the trail.

A Bewick's wren was observed singing at the very top of a balsam fir just below the Lake of the Hanging Glaciers. Gambel's chickadees, as well as the ruby-crowned and golden-crowned kinglets, were quite common in the coniferous forests.

The beautiful song of the solitaire and the carol of the western robin were frequently heard about our main camp.

Soon after the writer's arrival there he was delighted to discover a nest of the Sierra hermit thrush, with three greenish-blue eggs in it, two and one-half feet from the ground in a small balsam fir tree. On July 22 two of the eggs hatched and thereafter the mother was kept busy feeding her young every ten or fifteen minutes. Some films were made of the feeding process. This hermit

thrush apparently gathered most of her food while running along the ground. Early at morn and in the evening solitude the waiter listened with rapture to the entrancing notes of this superlative songster, pouring forth its melody in ascending cadences and ventriloquial effects in perfect harmony with the wild world about it.

It was astonishing to find numerous insects, of many different orders, flying over, crawling on or imbedded in the snow of the lofty névé fields or ice of the glaciers.

Of the beetles, curculionids and bark beetles predominated in numbers. One lively little sand beetle *(Tachys sp.)* was discovered under a stone near the top of Mt. David Thompson at 10,000 feet. At about 8000 feet elevation four or five fritillaries were seen flying over the snow field and seemingly playing a game of tag with each other. A pretty moth *(Gnophaela vermiculata)* with, black-bordered wings provided with greenish-white areas thereon, was found crawling on the snow. Subsequently numbers of this species, some of them mating, were captured in the fireweed thickets at a level of 5000 feet along the trail.

The following insects were collected about the main camp: Butterflies—The White Admiral *(Basilarchia lorquini),* Mourning Cloak *(Vanessa antiopa),* Milbert's Tortoise-shell *(Vanessa milberti),* several Arctics and Alpines of the Wood-Nymph family, as well as Scudder's Blue. Beetles—Several white-spotted brown long-horns *(Monohammus sp.),* and a grey-green tiger beetle (probably *Cicindela albolabris*) were taken, as well as the brilliant green *Buprestis langi.*

A horn-tail *(Tremex sp.)* flew into our tent.

Mosquitoes were not annoying, but this cannot be said of the horseflies *(Tabanus sp.),* the well-named "Bull Dogs" of the Canadian Rockies, which were exceedingly active and numerous about our camp.

This brief outline indicates that the fauna of the Purcell range and Horsethief creek, while apparently not very extensive, is quite interesting in its varied features and worthy of much further study.

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(1) Near The Source Of Farnham Creek (South Fork Of Horsethief Creek). *Photo L.H. Marvin*

(2) Starbird Glacier At Source Of Horsethief Creek. *Photo L.H. Marvin*

(3) Lake Of The Hanging Glaciers. *Photo L.H. Marvin*

IN MEMORIAM

ALEXANDER HARDIE DALGLEISH

1907-1934

"Every heart that has beat strong and cheerfully has left a hopeful impulse behind it in the world and has bettered the tradition of mankind."

—STEVENSON

On the sky-line of Icefall point above the Franklin glacier stands an imposing cairn of granite rocks erected to the memory of Alec Dalgleish, whose form lies eight miles to the north-east, nestling as it were in the arm of the mighty Waddington, below the southern cliffs from which his gallant spirit passed on, while he was attempting, with his chosen companions, the conquest of that great peak on June 26, 1934. Others will take up the task he laid down and carry it to completion, but in the hearts of those who knew him he has left a record of a full and well-rounded life that in the years to come will prove a source of inspiration to those who shall follow after.

The son of Mr. and Mrs. Loudon Cross Dalgleish of Vancouver, Alec Dalgleish was born in Dalkeith, Scotland, on August 1, 1907. He first came to Canada with his parents in 1913 and after a brief return to his native land settled with them in Calgary in 1917. Here he spent his boyhood days, graduating from Crescent Heights High School in 1924. The sky-line of the Rockies, rising above the foothills, must have often called to his adventurous spirit, but it was not until 1925 that he came to Vancouver with his parents and sister and finally entered his mountain home.

He joined the engineering staff of the British Columbia Telephone Company in 1926 and during that and the succeeding year made his first ventures into the local mountains.

During 1928 he made his first visit to Mt. Garibaldi with Stanley Henderson of the Alpine Club, climbing that peak and also making one of the few ascents of Mt. Mamquam. In the same year he became a member of the Alpine Club of Canada, together with his sister, Miss Amy Dalgleish, the present Secretary of the Vancouver section. He at once entered into all the activities of the section, later serving on the Executive for a number of years.

In 1929 he first tasted the joys and sorrows of exploration work, when with Eric Brooks and Stanley Henderson he visited the little-known district just across the International Boundary south of Chilliwack lake to the east of Mt. Baker.

In June 1930 with Tom Fyles and Stanley Henderson he explored the source of the Teaquahan river at the head of Bute inlet, this being the first climbing party to penetrate the great Homathko snowfield.

During the fall of 1930 and on through 1931 he was one of the surveyors of the transcontinental telephone line in the Boundary country and through the Crowsnest pass, and from this district in 1931 he attended the Alpine Club camp in Prospectors valley. Here he came in contact with the officers and members of the main club and took part in a number of climbs, leading a party on an ascent of Mt. Wenkchemna. Doubtless many who attended that camp will recall his happy personality.

The lure of the unknown, however, proved greater than the urge to ascend the, well-known and oft-climbed peaks of the Rockies and Selkirks, and in 1932 with Tom Fyles, Dr. Neal Carter and Mills Winram, he explored the headwaters of the Lillooet river and made several interesting first ascents.

A.H. Dalgleish

Again in 1933 the same party carried on further exploration to the southeast at the source of the Toba river, making the first ascent of Mt. Julian (9150 ft.)!

An artist by temperament and ability, he definitely entered upon his chosen work in the winter of 1933-1934, when he attended the B.C. College of Arts. This was in fulfillment of the ambition of many years during which he had devoted his spare time in the winter months, to the study of art. He has left little finished work but the promise of greater things which he displayed had caused the well-known Canadian artist, Mr. J. W. G. McDonald, his instructor and close personal friend, to predict for him a brilliant future in the realm of Canadian art.

Plans for an attempt on Mt. Waddington matured during the winter of 1933-1934, when, in co-operation with Alan Lambert of the B.C. Mountaineering Club, Eric Brooks, and later, Dr. Neal Carter, a careful program was drawn up. The party was well equipped and although only three weeks were available for the effort, ample time was allowed for the main attack. The party of four finally arrived at the mouth of the Franklin about the middle of June and from then until the day of the final climb there was no untoward incident or delay in the carrying out of their plans.

Possessed of a quick wit and keen sense of humour, Alec always proved a delightful companion both in sunshine and storm, while his writings and lectures on mountain subjects revealed a mind alive to the many aspects of mountaineering. Above all he was a lover of beauty in every form and his great passion for the hills did not end in the mere conquest of peaks, but led him towards other heights, in the attainment of which he has passed from our midst.

—F.H.S.

CONRAD KAIN

1883-1934

Conrad Kain was born at Nasswald, a village of Lower Austria, not far from Vienna, on August 10, 1883. His father, a miner, died in 1892, leaving a large family of whom Conrad was the eldest child. Their circumstances being very poor, Conrad left school at the age of fourteen to become a goatherd on the Raxalpe, whose cliffs form the technical playground for Viennese mountaineers. Several years later we find him at work as a quarryman and, during this interlude, a mountain guide evolved from a poacher.

One noted guide had already come from the Rax district: Daniel Innthaler had added to his local reputation by conquering the north wall of the Planspitze in 1885, and it was through him that Conrad obtained his first employers.

Kain began guiding in 1904, and in this season was taken to the mountains of the Ennsthal as well as to Tyrol, where he climbed in the Ortler, Zillerthal and Dolomite groups. In 1905 his travels extended to Courmayeur, Chamonix, Zermatt; then back in Austria, in the Dolomites and the Dachstein region. In 1906 he went to Corsica, with Albert Gerngross of Vienna, and later in the summer was at Chamonix once more and finally in the Kaisergebirge and other Austrian sections. In 1907 he visited the Dolomites, Silvretta group, Chamonix, the Brenta group and Dauphine, making many notable ascents. In 1908 he went to Vienna to study English in the family of Erich Pistor, a well-known Viennese climber who secured the Canadian engagement for Kain. During that summer Conrad visited the Maritime Alps, Dauphine, the Dolomites, as well as the peaks of Zermatt and Chamonix.

Kain arrived at Banff in the spring- of 1909, a young man of twenty-five, a guide “of very great promise.” He assisted Fynn and others in setting up the Lake O’Hara camp, climbed Victoria

Conrad Kain After The First Ascent Of Mt. Robson, 1913.

alone and led several groups up Mt. Huber. He went to Sherbrook lake and took part in the crossing of Balfour snowfield to Yoho valley. After the climbing was over he went to Glacier, ascended Sir Donald alone and assisted Wheeler with measurements of Illecillewaet glacier as well as with survey work on Adams lake.

His desire for adventure and experiment led him to spend the winter at Fort Saskatchewan, near Edmonton, to see how prairie people lived. In the summer of 1910 he took part in the Bow valley-Yoho expedition, and went with Wheeler and Longstaff across the Purcells.

Space will permit of but the barest outline of his subsequent activities: the Yellowhead expedition of 1911, when Resplendent and Whitehorn fell to him; the winter 1911-12, which he spent with Donald Phillips trapping on Smoky river; the summer of 1912 when he accompanied Hollister to the Siberian Altai and saw his home in Austria for the last time.

1918 brought him the conquest of Mt. Robson, and the three succeeding winters his engagements in New Zealand, where his coaching of native guides raised the standard of mountaineering in that country. In addition to many new ascents he twice traversed Mt. Cook.

In the summer of 1914 Conrad was at the Yoho camp, and afterward led MacCarthy to the summit of Mt. Farnham, loftiest of the Purcell range. In the following summer he accompanied MacCarthy and Stone on their explorations in the Purcells. 1916 found him making his most difficult Canadian ascents: Mt. Louis and Bugaboo Spire. The lure of the trap-line again attracted him, and the winter of 1916-1917 was spent in a cabin on the Simpson river, without human companionship from September until February.

He married in the spring of 1917 and settled down on a little farm in the Columbia valley, but mountaineering was not entirely put aside for he turned up at the Cataract valley camp that summer.

In March, 1919, Conrad made a solo ascent of Mt. Jumbo on snowshoes, the first high winter ascent in the Purcell range. That summer was spent with the Inter-provincial Survey at Thompson pass, on the Athabaska river and Fortress lake. He remained at Thompson pass for the winter, trapping on the Bush headwaters and coming out on foot to Lake Louise in February.

In 1921 he took part in the search for Dr. Stone, who perished on Mt. Eon, earning high praise for his strenuous efforts. 1922 found him with Harmon, visiting the Lake of the Hanging Glaciers.

Ladd and I made a fruitful expedition with him to the Columbia icefield in 1923, and he went with Strumia and myself to Athabaska pass, Tonquin valley and Mt. Robson in the following year, Kain remaining at the A.C.C. camp and conducting parties up Mt. Robson. Later, in the same season, he accompanied Hickson and Palmer up the Athabaska.

Conrad was raising mink, marten and chinchilla rabbits at his Wilmer farm, and taking out hunting parties with his pack-train, frequently working over toward the Rockies on the headwaters of Cross and Palliser rivers. In 1925 he was taken on a bear hunt to southwestern Alaska.

I saw him again in 1928, when he went with Cromwell, Hillhouse and myself up Toby creek and across to the A.C.C. camp in Horsethief valley. In 1930 we travelled up Dutch creek, to the source of the Columbia, and later he took Cromwell and Peter Kaufmann to the Bugaboos. In 1931 we visited the head of Findlay creek.

Our last climbs together were in 1933: my wife and I with him in the Bugaboos; Kingman and I climbing with him from Peyto lake. He dropped in at the Paradise valley camp, saw old friends at Banff and climbed Mt. Louis (for the third time) on his fiftieth birthday. His final ascents were made in August with I. A. Richards, whom he took to the Bugaboos and the mountains immediately north.

He became ill in December and, despite every care, died of lethargic encephalitis in the Cranbrook Hospital on February 2, 1934. Dr. Bell saw him a few days before the end came.

Conrad was buried at Cranbrook beside his wife who predeceased him by less than a year. They rest in the Purcell mountains, on the edge of the "rough country" that Conrad loved and which had been his home for many years.

In 1917 A. L. Mumm expressed the opinion that Conrad's record of new ascents must be "one of the longest and most remarkable held by any guide now living." On the Corsican expedition of 1906, Capo Tafonato was his first virgin peak. In New Zealand he made at least thirty first-ascents, and in Canada (Rockies and Purcells) more than sixty. He was the first, and is still the only one to have ascended the three highest peaks of the Canadian Rockies.

Mt. Conrad in New Zealand, Mt. Kain and Nasswald Pk. in the Rockies, as well as Birthday Pk. in the Purcells, hold him in remembrance.

Conrad Kain, however, will be remembered for much besides his feats of mountaineering. There have been plenty of peasants who were well enough as guides, who could ably face the rock and snow problems of their local peaks, but few of them have accepted with equanimity the hazards of foreign travel and sea voyages. But a new country was always an adventure to Conrad, and he adapted himself to the ways of the Canadian trail, delving into natural history, acquainting himself with the handling of a pack-train. He brought glamour and imagination into the sport of mountaineering as few guides have done before him. Recalling his personality and amusing stories one should not forget that his approach to mountains was first and foremost an esthetic one; he saw a peak first as something beautiful—the technical problem was always secondary—and nothing counted beside that vision. It is well that our sport should have at least one outstanding figure upon whom we can look back with admiration. Conrad Kain will never be forgotten in Canadian mountaineering, and a little of hero-worship, one feels, will do no harm. "Whoso touches a joy as he flies, lives in Eternity's sunrise," might have been his epitaph, but I think he would have preferred the simpler one that his neighbours wrote when he died: "He will be much missed, for he was a kind, honest man."

—J.M.T.

TOM WILSON

1859-1933

The Club mourns the death of Tom Wilson of Banff, one of the original little band of enthusiasts that gathered at Winnipeg in 1906 to found the Alpine Club of Canada. An Active Member from 1906 to 1924, he was then created an Honorary Member. We all loved Tom Wilson, who was a true lover of the mountains and one of our most enthusiastic and helpful members, when the going was hard and we had not yet got into our stride. He had a charming personality and a keen sense of humor, and it was a joy to listen to his yarns of pioneer days in the mountain wilderness.

He was one of the last surviving members of the early days of exploration for a route through the mountains by the Canadian Pacific Railway and was closely associated with Colonel A. B. Rogers in 1881 when the line of the railway was located over the Main and Selkirk Ranges by way of the Kicking Horse and Rogers passes. He was present at Craigellachie, in 1885, on that thrilling occasion when the last spike of the great transcontinental line was driven by Sir[1] signifying the consummation of National hopes and fears, and of magnificent enterprise in the overcoming of superlative difficulties.

1 Donald A. Smith (the late Lord Strathcona and Mt. Royal).

Tom Wilson

Tom Wilson well earned the distinctive title of "Trail Blazer" in its highest sense. He was the first white man to discover the far-famed Lake Louise, and the ever increasing thousands of tourists who visit it yearly may see there a monument erected to his memory. He traced out and re-blazed many of the old Indian trails, notably that around the wonderful Yoho valley and was one of the earliest to see its glories: the Takakkaw Falls, Twin Falls, Yoho glacier, Emerald Lake and many others. His pioneering explorations extended far and wide through the mountains: over the Bow pass to the headwaters of the Saskatchewan, up the Blaeberry river to Howse pass and southward from Banff to Mount Assiniboine. During the course of his explorations he climbed to the summits of high peaks to prospect the routes on which he was set, and so acquired a keen zest for mountaineering and a fascination for the "Land of Beyond."

Tom Wilson was born at Bond Head, north of Toronto, on August 21st, 1859, and was educated at Barrie, Ontario. He served with the North West Mounted Police for several years and was stationed at Fort Walsh in southwestern Saskatchewan. Hearing of the advance of the Canadian Pacific Railway through the Rockies, he resigned from the Force and joined one of the railway survey parties in 1881. It was while attached to these survey parties that he made his very remarkable discoveries of beauty spots in the portion of the Rocky Mountains, served by the Canadian Pacific Railway, that have since made his name famous.

During the 1885 Riel rebellion Tom Wilson served with Steele's Scouts in the Northwest Territories and, on the completion of the Railway, took up his residence at Banff. He then established a horse ranch and trading post on the Kootenai Plain with headquarters at Nordegg, Alberta. He was closely in touch with the Indians living in that locality and was to them a great white chief. I believe he was adopted into the tribe. In 1921 he moved with his family to Enderby, B.C., but the call of the Great Hills, who were his personal friends, brought him back to Banff in 1926, where he lived for the remainder of his life. His last few years were marred by failing eyesight and he died of angina pectoris on September 20th, 1933, at the age of 74 years.

Tom Wilson had an exceptionally fine collection of books of the history of travel and exploration in the Canadian Rockies and in British Columbia, and of the early days of the Hudson's Bay and North West Fur Trading Companies' explorations and doings, of which he was very proud and claimed that it was comparable with that in the British Museum. Among other rare records, he had a full set of the reports of the Palliser Expedition of 1857-60 and was known to Sir James Hector (then Dr. Hector), the expeditions's geologist and geographer, who discovered the Kicking Horse pass.

Among the histories of the early explorers the history of Tom Wilson is not insignificant. His personal charm, his fund of information on Canadian mountain lore, his infectious sense of humor and outstanding gift as a raconteur have made him beloved by all who knew him. His sympathetic assistance to the Club in its early vicissitudes will not be forgotten and we trust that his Happy Hunting Grounds may contain all that he loved so well and that has made his life's work so memorable.

—A. 0. W.

With the death of Tom Wilson has gone almost the last of those with whom I had to do in my early days in the Canadian Rockies, only Bill Peyto is left. It was Tom who outfitted all my first expeditions into the wilds. He was the only one who, as far as we could judge, had been over part of the ground. There were no maps, but Tom gave us a very fair description of the country.

Although it is a quarter of a century since I last saw him, we always kept up a correspondence and his last letter to me was only a year ago.

Nothing can give a better appreciation of the man than some of his letters, and it is well worth while to quote from them at some length:

Enderby, Mar. 17, 1924.

Dear Dr. Collie,

I was glad to have yours of 26th ult. No I would not change if I could. I saw the buffalo and the Indian as he was—I saw towns and cities grow where I had pitched my tent—I saw the railway come into the country, bringing preachers and men with white shirts, who built churches and jails—I have seen the coming of the electric cars and light, telephone, autos, flying machines, and the radio, so if I finish up in an old man's home nothing can cheat me out of that part of my life. If I have any regrets, it is that I did not at least have one good trip with you. And now let you and me make strong medicine to the God of the high mountains and his cousin the God of the winds, that the party on Mt. Everest have their one week of good weather, at the appointed time. I am beating the Tom-Tom now—Wilcox is busy with his lumber in Cuba—Prof. Fay is, as usual, really wonderful for his age. I am enclosing some copies of notes between Harkin of the Parks Dept., and myself, also one to Mr. Wheeler.

Yours—Tom

P.S. Of the large party of us who came into the hills in 1881 for the C.P.R., I only know of two others that are alive today.

Yes it is no wonder that Tom came back to Banff. The call of the wilds, once one has heard it, there is no appeal. Those spacious days however of fifty years ago are gone, when the unknown bulked large, and one was free to wander in an unexplored land.

Some, years ago I got a letter from Fred Stephens saying he had found a valley hidden away and unknown, where there were cariboo, bear, raspberries and beautiful trout:—"Say, friend Norman," he wrote "come, and let the whole damn world race for dollars."

Tom's letters were on just such lines. Fortunate was he to have lived that free life, and amongst some of the most beautiful mountain land in the world. A land of great mountains, rushing rivers, mysterious woods, and fairy lakes that mirror the silent peaks, and are lit up by the setting sun till night comes on hiding all in darkness.

—J. N. COLLIE

HENRY MILLER GENDREAU

Miller Gendreau's circle of mountaineering friends would undoubtedly have widened beyond Vancouver if he had not died in that city at the age of 25, on Aug. 23, 1934.

His father is Mr. Henry W. Gendreau of Montreal, Que. Miller Gendreau was born in Granby, Que. At the age of four he began long snowshoe excursions with his father who hauled him on a toboggan when tired. He became a good swimmer and expert canoeist, making long voyages with his father and others on rivers of Eastern Canada.

After attending the Ecole des Beaux Arts, Montreal, he spent several years there as a commercial artist. Snowshoeing yielded to ski-ing, and when he came to Vancouver in 1931 he found this sport beginning to make headway against prejudices of local mountaineers. Though somewhat retiring and reserved in nature, he soon made many friends among members of the

H.M. Gendreau

A.C.C. He had a quick sense of humour of the less boisterous type, a high sense of personal honour, and was conscientious and painstaking to a degree.

He inherited the spirit of the pioneer settlers of Canada, showing sympathetic insight towards the efforts of all those who in any way pitted their strength against the wilderness, and in himself he proved that the pioneer's high courage, imagination, fortitude and determination could still find scope in the city life required by his chosen vocation. He did not enjoy very robust health while in Vancouver. Undaunted by depression years, he created an outlet for his ability; it may be that the long strain weakened him so that he succumbed to illness just when life promised so much. His work was winning deserved recognition; he was engaged to Miss Alice M. Macpherson of Vancouver; and he hoped to give more time to mountaineering with and without ski.

In "Mountain Memories" Lord Conway defines mountaineers as people "interested in mountains." Although Miller Gendreau had trodden no long list of alpine peaks he will be remembered among his friends as one at heart a mountaineer.

—D.M.

KENNETH MURRAY CHADWICK

1878-1934

The late Mr. Chadwick was born on August 11, 1878, in Leeds, England. Educated as a civil engineer, he came to Canada in 1907 and eventually settled in Victoria. He joined the Alpine Club of Canada in 1928 and was an energetic and prominent member of the Vancouver island section, having filled the post of Secretary for some time. He attended nearly all the local camps and outings and will be much missed by the section.

JOHN ALEXANDER MACARTHUR

In the death of Dr. MacArthur, in August 1934, the Alpine Club of Canada has lost one of its original members.

Dr. MacArthur, a leader in the medical profession, was educated in Middlesex, Ontario and at McGill university and after spending several years in Clinton, Iowa, he returned to Canada in 1884 and came west to Winnipeg. He took an active part in various branches of his profession, being one of the founders of the Manitoba Medical College and professor of Medical jurisprudence and toxicology in that institution. He became president of the Winnipeg Medico-Chirurgical society and took an interest in all affairs of the Canadian Medical association, which he served as vice-president for Manitoba. In 1910 he was named as delegate to the world's Medical Congress in France and attended in that capacity.

In many fields outside of his profession, he was also prominent, being president of the Liberal association and candidate for the provincial legislature in 1904 and again in 1907. He took great delight in club life and shared the activities of numerous clubs, among them, the Canadian club, Carleton, Manitoba and Commercial clubs and the Masonic order, as well as being a member of the Burns' club and at one time a president of the St. Andrews society. Always an enthusiastic worker in the cause of temperance, he served as president of the Manitoba branch of the Dominion Temperance Alliance.

In his early days especially he was deeply interested in all forms of outdoor sport and not

only did he act as physician extraordinary to the Winnipeg lacrosse team, whose games he never failed to attend, but for many years he was the president of the Winnipeg lacrosse club.

Musical and art clubs were also given his support and he was the president of the Playgoers society.

Although he did not attend the Annual camps of the Club, Dr. MacArthur was a loyal supporter of all phases of the activities of the Winnipeg section and his kindly presence will be much missed.

—M.D.F.

BERTRAM S. SMITH

We regret to record the death of Bertram S. Smith of Calgary. Mr. Smith became a member in 1907 and attended early camps of the Club. He died on May 16, 1934.

NEW ASCENTS AND VARIOUS EXPEDITIONS

SOUTHERN ROCKIES[1]

Sir Douglas Group

Mt. Smith-Dorrien (10,300). First ascent, Mt. and Mrs. Fraser, Edward Fern, August 1933. A very fine rock ridge climb.

Assiniboine Group

1934

Mt. Sturdee (10,300). August 25. We (Georgia Engelhard and Victor Kutschera) followed the usual route from Assiniboine camp up the Assiniboine glacier and Assiniboine- Wedgewood col to the Assiniboine-Sturdee col and made the first ascent of the northeast face of Mt. Sturdee by the ice wall (600 ft.) which terminates at the depression just below the final rocks. The ice wall is practically vertical and necessitated step-cutting all the way. Time, eight hours; descent by east arête to Assiniboine-Sturdee col.

Mt. Towers (east tower). Ascended September 4. We (G. E. and V. K.) reached the base of the peak, over shale and loose rock from the Wonder pass trail. The peak was ascended on the east face — first up two chimneys and thence along the jagged ridge leading to the final scree slopes by which the summit is easily reached. The rock is exceedingly rotten and great care had to be exercised as the ridge is in places very narrow. The descent was by the southwest ridge over broken cliffs and scree. Mt. Magog. Traverse and also first ascent of east wall above Terrapin col. September 5. We (G. E. and V. K.) ascended Terrapin glacier to Terrapin col and thence up the almost vertical wall on the east face of Mt. Magog directly above the col and to the right of the Golden Stairs, the route used by MacCarthy. The wall is almost 200 feet in height and the holds are very tiny — merely slight grooves in the rock where the tips of the fingers can catch hold. We believe that this is the first time this wall has been ascended. The usual route was followed for the rest of the traverse. Total time, thirteen hours.

Banff Area

Mt. Louis (8800). Second traverse. I drove out from Banff about 3 a.m., August 10, 1933, intending to repeat the orthodox ascent of Mount Louis and examine an alternative route I had remarked the previous year. The sun dawned on a perfect day as I topped Edith pass. By six o'clock I was at the familiar tree, with everything but a rope and some chocolate cached in its branches, and sneakers donned in place of heavy boots. Climbing directly upwards above the great eastern couloir, I tried without success each of a series of small chimneys which lead towards the insignificant true eastern ridge which bounds the great couloir on its right (north) side. Two hours of fruitless effort drove me to the couloir's bed and a final trial of the last chimney which originates

1 This section of the Journal is designed to present in brief form the new ascents and expeditions of interest each year. Where extended accounts appear In the current Journal, details are not given here but, in lieu thereof, the page number on which will be found the detailed account. In a few cases where specific details are not given in the extended account, these details, taken from the official records of the Club, have been added.
On account of the fact that it has not been possible to obtain data in all cases noted, certain omissions occur. The degree of completeness in future issues will depend upon the co-operation of members who are invited to contribute to this feature. Contributions should be sent in as early as possible and not later than December 1st each year. (Editor).

in it—a uniformly steep and smooth narrow cleft which proved to be difficult only at the very top where it emerges on a generous broken ledge, adorned by a great spike embedded by previous visitors. Thence the crest of the east ridge was attained by an easy traverse to the right. The ridge provided exhilarating but not difficult climbing for some distance to a tiny level saddle, which abutted a fearsome 12-15 foot overhang. No traverse was possible, and a direct ascent promised to be too strenuous to try alone. Almost resigned to retreat, I tried the rope as a last resort. After some twenty-odd tosses a loop caught firmly over a secure belay above the mauvais pas and by knotting the rope I was able to climb up it quite securely.

The rest of the ridge—some 250 feet—provided the best climbing I have ever enjoyed, a series of very steep 15-20 foot buttresses, not unlike some pitches on Castle tower but far more exacting and continuous . . . and taking two full hours to negotiate, including the delay at the overhang. A last strenuous bit led suddenly onto easy broken rocks above the ridge, leading into a small irregular amphitheatre, which lies high in the east face of the mountain to the right of the huge yellow slab which towers above the central couloir.

The great final chimney in the south face has an exact counterpart straight through that section of the summit mass, rising a shorter distance and less steeply, from the amphitheatre mentioned, in the very heart of the mountain. It seemed only a matter of minutes round the broken rocks and up its easy but debris-laden bed to the very point where the orthodox route emerges from its chimney—and on to the summit at 11.20 a.m., just three hours after leaving the couloir far below.

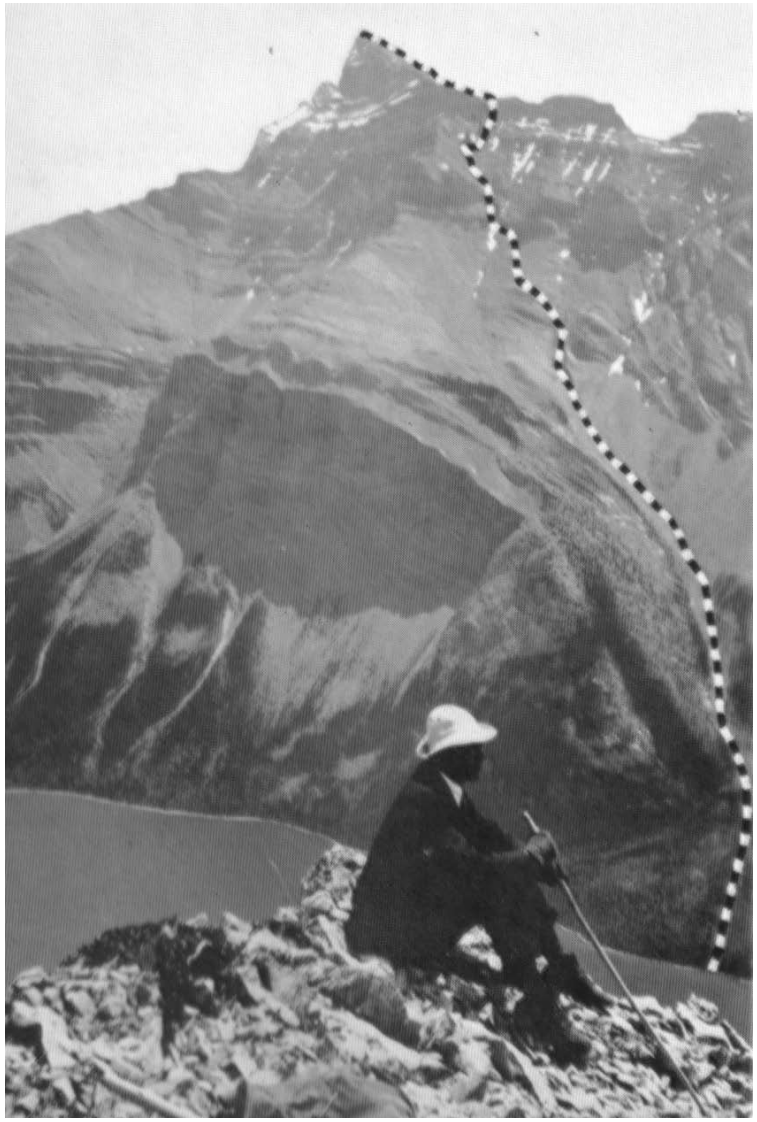
The familiar descent seemed pleasantly easy, after a morning spent on the east ridge, and the tree and food were reached in less than two hours.

This route of traverse strongly recommends itself as a much more interesting and exacting climb than both ascending and descending by the southern ribs and chimneys. A fixed rope might very well be placed upon the short overhang.

—CAMPBELL SECORD

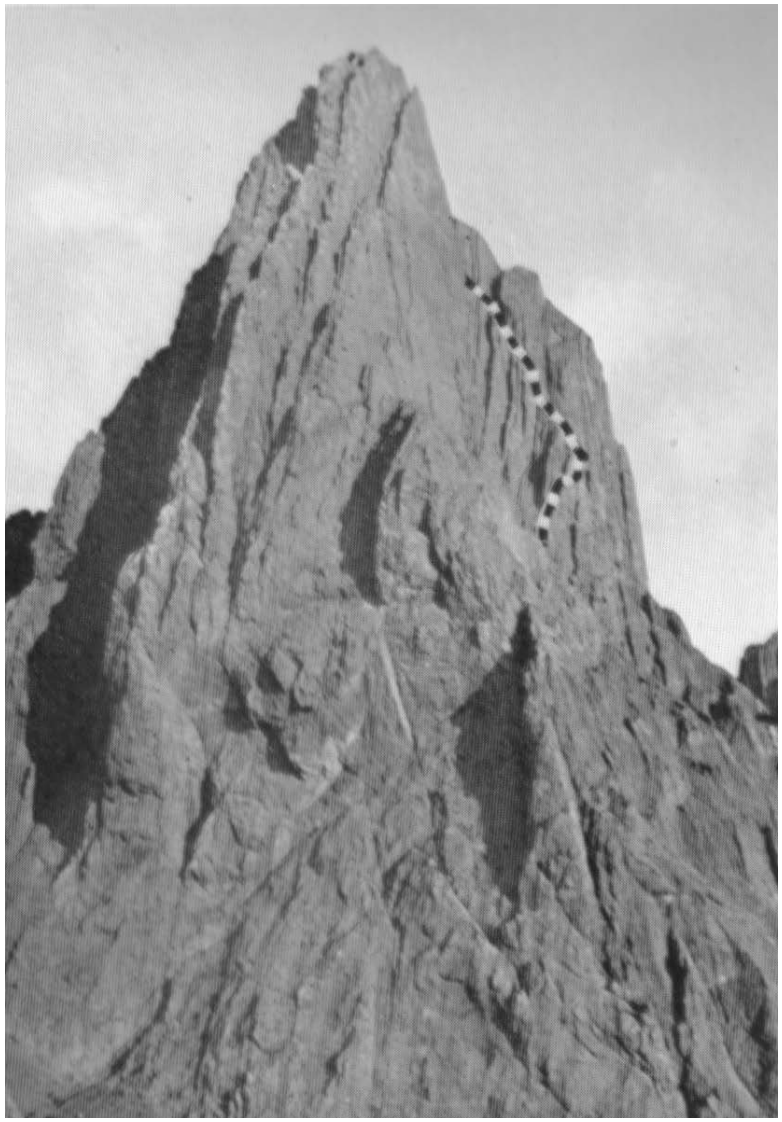
Cascade Mt. (9840). First ascent by east face. On Tuesday, August 21, 1934, Lawrence Grassi and Joseph Miskow made the first ascent of Cascade Mt. by the east face, just to the west of the waterfall. Great difficulties were encountered but surmounted and the summit was reached after eight hours and forty-five minutes. The descent was made by the south face.

Mt. Inglismaldie (9725). First ascent by northwest face from Lake Minnewanka. “Of course you know that Inglismaldie is impossible from this side.” These were the parting words of Captain John Standy, veteran proprietor of the Chalet at Lake Minnewanka for a quarter of a century, to a party of the Calgary section as they pulled from the pier to cross the lake to the starting point for a climb by the northwest face of the mountain on June 17, under the leadership of Lawrence Grassi. A landing was made at a little bay at the foot of the second draw west of the buttress known as Gibraltar. Climbing started immediately through woods up a stream bed filled with boulders and flanked with piles of scree. This was followed by small cliffs, a chimney, and a long scree slope leading to rock ledges. These were traversed until a narrow outwardly-sloping ledge of exceedingly rotten rock was reached from which an overhanging cliff of about sixty feet rose. Here a rest was made while Grassi negotiated for a possible route in his stockinged feet. His appearance on the top announced his success and with the aid of the rope the party followed to another ledge with a second overhang of about sixty feet above it. This in turn was successfully ascended and brought the party out on the summit ridge, which led over broken rocks to the summit



Mt. Inglismaldie. *Photo S.R. Vallance*

Route dotted



Mt. Louis. *Photo C. Secord*

Route of ascent dotted

itself after forty-five minutes, at 4.20 p.m. Magnificent views were obtained; Mt. Assiniboine towering to the southwest, while to the east the prairies could be seen beyond the lake. The party roped off over the overhanging cliffs on the descent and the cabin was reached at 10.30 p.m.

The party on this climb consisted of the following:—Lawrence Grassi, leader; Miss Joyce Packer, Miss Helen Foster, Miss M. C. Wylie, Messrs. Dickson, Sadler, Miskow, Betts, Innes, LeCouteur and Vallance.

Mount Ishbel. On September 3, 1933, a party from the Calgary section led by Lawrence Grassi made the first ascent of Mt. Ishbel, a prominent peak in the Sawback range just east of Johnson creek and north of the Banff-Lake Louise highway. The party comprised Miss Doris Day, Miss Joyce Packer, Miss Violet Waters and Messrs. J. Farish, F. LeCouteur, William Innes and John Sterling. A camp was pitched the previous evening in a meadow and the following morning a start was made at 7.25. For one and a half hours the way was taken through thick underbrush luxuriant with all kinds of berries, which somewhat retarded progress—the berries, not the underbrush; thence up a long grassy slope until a narrow rock ledge was reached. The mountain is composed of huge perpendicular slabs, all the ledges and steep rock being covered with loose stones in large quantities, and the climbing was rendered more difficult on this account. A halt was made for lunch in a steep couloir, after which one and a half hours fairly stiff climbing brought the party to the ridge, from which the summit was reached in twenty minutes. The ascent was made from the southwest. One hour was spent on the summit, which is composed of loose boulders, and Grassi having, with a modicum of assistance, erected a worthy cairn, the descent was made by the north slope. Apart from an overhang which was encountered, coming down presented no especial difficulty, and camp was reached at 7.25 p.m., exactly twelve hours having been occupied by the climb.

Lake Louise Group

Mt. Quadra (10,420). Ascended July 27, 1934 (Georgia Engelhard and *Ernest Feuz*) by new route up the northwest ridge. We started from the Fay hut and crossed the glacier to the base of the northwest ridge which we followed up steep and moderately firm rock to the foot of the final tower about 200 feet below the summit. From here we worked our way up by a series of vertical cracks which provided excellent climbing, but about fifty feet from the summit we were blocked by an overhang. Descending to the foot of the tower, we traversed along the west face via easy ledges to a couloir leading to the south ridge, which we then followed via the usual route to the summit. Time, 6 hours. We made the descent by the south ridge to Middle pass and thence down to the glacier. I can recommend the climbing on the northwest ridge as being far superior to that on the south ridge where the rock is very rotten.

—G.E.

Mt. Victoria (11,365). First traverse from south to north. August 15, 1933. G. Engelhard, *Ernest Feuz*. p. 102.

Pinnacle Mt. (10,072). Ascent by new route and traverse. R. Neave and R. Hind. July 27, 1933. Left Paradise valley camp at 8.00 a.m. and got to Sentinel pass at 10.05. Spent 10 minutes here inspecting the southeast face for possible lines of ascent. Decided on a promising looking diagonal break about half-way across the face. Reached the bottom of this 45 minutes later and changed into rubber shoes and put on the rope. The first pitch was up a vertical chimney with water-worn walls. Mr. Wellen (who had started out with us) here decided that he was feeling too tired after his climb on Mt. Temple the day before to attempt the climb. He, therefore, went back

to camp and Bob and I went on. A short but slightly overhanging face of considerable difficulty took us out of the chimney to an easy sloping couloir. The latter led to a series of broad ledges with a great deal of scree on them. On reaching these ledges we first tried a very steep chimney almost above the point where we had reached the ledges. We were soon stopped however by a big chock-stone with smooth faces on both sides, so returned to the ledges and traversed over to the west for some little way. A wide chimney then took us up for about 60 ft. to the bottom of a face leading up to a small ridge. This face was vertical and the holds small but fairly sound. This was the most difficult piece of climbing we had during the day and after surmounting it we found ourselves at the lower edge of a small cirque. Traversing upward and to the west we reached the west arête at the highest yellow band of rock. Moving over to the north side of the arête we climbed up steep slabs and gained the ridge again higher up. From here a short walk along the ridge brought us to the cairn at 2.30 p.m.

Spent half an hour on the summit and followed the regular route down to the upper fixed rope. We descended this pitch without using the fixed rope. Lower down we got off the tracks and kept considerably to the right of the lower fixed rope. From here on, the regular route was followed and we unroped, after glissading the lower snow slopes, at 4.50, and were back in camp at 5.30.

—R.N.

Ottertail Group

Foster Peak (10,511). First ascent, July 8, 1933. Katie Gardiner, Ken Jones, *Walter Feuz*. p. 90.

Unnamed Peak (10,240). First ascent, August 1, 1933. Katie Gardiner, Ken Jones, *Walter Feuz*. p. 92.

Hanbury Peak (10,267). First ascent, August 13, 1933. Lillian Gest, Katie Gardiner, *Walter Feuz, Christian Häsler*, p. 95.

Unnamed Peak ("Teepee Peak"). On the northern side of the Goodsirs. First ascent, August 17, 1933. Lillian Gest, Katie Gardiner, *Walter Feuz, Christian Häsler*. p. 96.

Yoho-Waputik Group

Peyto Peak (9805). First ascent, July 18,1933. J. M. Thorington, H. S. Kingman, *Conrad Kain*.

Mt. Mistaya (10,100). First ascent, July 21, 1933. J. M. Thorington, H. S. Kingman, *Conrad Kain.*

Trapper Peak (9790). First ascent, July 21, 1933. J. M. Thorington, H. S. Kingman, *Conrad Kain.*

Mt. Barbette (10,080). First ascent, July 22, 1933. J. M. Thorington, H. S. Kingman, *Conrad Kain.*

For above climbs see *Am. A. J.,* Vol. II, No. 2, 1934. p. 205.

St. Nicholas Peak (9616 ft.). Second ascent, July 19, 1934. H. S. Kingman, J. M. Thorington.

From Bow lake by the same route on which one of us (J.M.T.) and Peter Kaufmann had made the first ascent in 1930. It is now mentioned because of a curious incident.

Kaufmann, in 1930, much elated by his first new peak in Canada, spent such energy in cairn building that he lost an important button connecting his braces with his breeches. Four years later most of the cairn had fallen down, but on the very tip of a projecting bit of shale was the missing button.

Pipestone Group

Molar Tower. First ascent, July 6, 1933. R. G. Cairns, A. A. McCoubrey, Jr., R. Neave. p. 100.

Mt. Hector (11,135). Ascent from northeast. R. G. Cairns, A. A. McCoubrey, Jr., R. Neave. Left camp (on first of series of benches where the creek bed rises rapidly) on Molar creek at 7 a.m. July 9, 1933. Scrambled up the side of a small stream to lowest tongue of glacier, thence up snow slopes of varying steepness to within 200 feet of the summit and then over loose rocks to cairn at noon. Descent by same route in 2 ½ hours.

—R.N.

Freshfield and Forbes—Lyell Groups

Mt. Garth (9970 ft). First ascent, July 6, 1934. H. S. Kingman, J. M. Thorington, *R. Aemmer.*

From camp at Freshfield tongue, by way of the glacier, the S. margin of the Garth-Coronation gully and the snowfield leading to the Garth-Coronation col. Final 500 ft. of N. arête over snow and easy rock. Ascent, 5 hrs. (It is possible to descend from the col directly to the head of Forbes brook).

Freshfield Glacier. A report of 1934 measurements has been presented separately. Bad weather prevented a visit to the Lyell

Mt Valenciennes (10,160 ft.). First ascent, July 15, 1934. The same party. From camp on N. side of head of Forbes brook, close to camp used by Interprovincial Survey, a half mile above stream from Forbes S. glacier.

A traverse of Bush N. Sta. from S.E. to N.W. was made to a col on the watershed (9000 ft.), whence the peak was attained by its S.E. arête over a steep frontal buttress (300 ft.; difficult on account of new snow) and final snow slopes.

In descending, the col was reached and a direct line taken to camp down the E. snow basin. Ascent, 5 hrs.

—J.M.T.

NORTHERN ROCKIES

Fraser-Rampart Group

1933

Paragon Peak (ca. 10,000). Second ascent, Aug. 2, 1933. E. R. Gibson, R. Hind, Miss W. J. Watson. First ascent by S.E. face. p. 66.

Alcove Mt. (ca. 9200). First ascent and traverse, Aug. 4, 1933. E. R. Gibson, Miss 0. Haw, R. Hind, Miss W. J. Watson. East face. p. 67.

Mt. Mastodon (ca. 9800). First ascent, Aug. 7, 1933. E. R. Gibson, R. Hind, Miss W. J. Watson, E. L. Woolf. South arête, p. 68.

Mt. Elephas (9810). First ascent and traverse, Aug. 7, 1933. Miss H. A. Burns, Miss 0. Haw, C. G. Wates, Miss W. J. Watson. East and S.W. arêtes, p. 71.

Bennington Peak (10,726). Second ascent and traverse, Aug. 8, 1933. E. R. Gibson, R. Hind, E. L. Woolf. South face and east arête, p. 73. The latter was ascended from the A.C.C. Camp 1934.

"Oubliette Mt." (ca. 10,200). Second ascent, Aug. 12, 1933. E. R. Gibson, Miss O. Haw, R. Hind, E. L. Woolf. Para pass and west face. p. 75.

Dungeon Peak (ca. 10,400). First ascent and traverse, Aug. 14, 1933. E. R. Gibson, R. Hind, E. L. Woolf. Para pass and west face, descent by N.W. arête and west face. p. 77.

1934

Angle Peak (9500). First ascent, July 21, 1934, from Alpine Club Camp. Miss M. Aylard, Mrs. A. P. Kramer, Miss A. M. McKay, R. P. Cross, J. C. Southard, S. R. Vallance, J. A. Corry, R. Neave.

Owing to poor weather conditions we did not leave camp until 8 a.m. and ascended along the bank of the creek until the snow-field was reached, when we made directly for the western face of the mountain. On this face a long steep expanse of snow extends from the base to the top, broken only by a few rock islands about half-way to the summit. This snowfield, however, is flanked by two rocky ribs, the one on the left rising all the way to the summit, the one on the right being 300 or more feet short of the summit. We left the snow at the base of this right rib at 10.30 and ascended the rib until it gave out on the snowfield above. This point was reached at 11.45 a.m. We lunched here and then proceeded up the snow which is considerably steeper than it appears to be, when looked at from the valley below (estimated at 60°). The snow was at least 300 feet in height and owing to hardness, steps had to be cut in the entire extent of it.

In ascending the snow, we headed for the high point of the left rib, reaching it at 2 p.m. It was then a half-hour's walk along the ridge to the summit. Within a few feet of the summit a snow cornice had to be turned by swinging left around it onto the north face.

We remained on top half an hour and then retraced our steps to the rock where we had lunched. From there we bore left down the scree and took to the snow at a much higher point than that where we left it on the ascent. It would furnish an excellent glissade if it were not for the bergschrund below. We arrived back in camp at 4 p.m.

By the route followed this mountain furnishes a good graduating climb. The rock rib has some steep pitches with excellent holds. The upper snow is steep and gives the novice a good idea of the technique used on steep snow. The same is true of the snow lower down on the descent.

—J. A. CORRY

"Anchorite" Peak (9000+). First ascent, July 17, 1934, from Alpine Club of Canada Camp. Bliss P. Prescott, R. J. Cuthbertson, H. France, R. Zillmer, Rex Gibson.

We left camp at 8 a.m. and climbed by the snow couloir on the E. face to the main S.E. ridge. This was followed throughout to the summit which we reached at 12 noon. Leaving the summit at 12.45, we returned by our route of ascent and reached camp at 3.15 p.m.

—REX GIBSON

Whirlpool Group

1933

Mt. Blackrock (9580). First ascent and traverse, Aug. 8, 1933. E. R. Gibson, R. Hind, E. L. Woolf. East face and N.E. arête, p. 70.

1934

Needle Peak (9668). First ascent, July 28, 1934. E. R. Gibson, W. H. Cleveland, R. Neave, J. A. Corry, Dr. C. Beattie. p. 82.

Robson Group

Unnamed (?9500). First ascent, July 27, 1934. M. M. Strumia, J. M. Thorington. The triple summit immediately north of Red pass. It is visible from the western end of Moose lake, and from that viewpoint appears slightly higher than, and to connect with the spire of Mt. Kain. Both suppositions proved incorrect.

Ascent from hotel at Red Pass station; west along tracks for slightly more than a mile, thence through burnt timber, climbing and circling shoulder into alpland of Red pass. The peak was attained by its eastern face, traversing the three peaks from S. to N. Rock very firm, the climb

being somewhat more sustained than on Pinnacle. Because of the rock formation no cairn was made on the summit, but a record was left in a depression immediately N. of the highest point, above Resplendent valley. Moose lake is visible throughout its length.

This peak was found to be cut off by a deep notch from the slightly higher peak of Mt. Kain, immediately W., to which an elevation of 9392 ft. is given on Wheeler's map of 1911. (Our feeling was that the peak we were on, as well as Mt. Kain, was above 9500 ft).

Mt. Kain (?9392+). First ascent, July 28, 1934. One of us (J.M.T.) being obliged to return east, the peak was ascended by M. M. Strumia, alone.

From hotel at Red Pass station, W. along tracks until across stream from S. glacier of Mt. Kain. Thence by W. bank of stream, ascending and rounding peak to W. and N.W. Final climb steeper but shorter than peak of preceding day.

Both of these mountains are on the extremity of a long arête, with several unnamed peaks intervening, extending S.E. from Mt. Resplendent, and should therefore, be classed as the southeastern outliers of the Robson group.

The view to the south is an impressive one, embracing the Cariboos, the tip of the Gold range, the unclassified peaks between Canoe river and the head of the Fraser, and the Rampart group.

It is of some interest to note that Mt. Robson is visible from the E. end of Moose lake, and Mt. Geikie from the W. end.

The people at Red Pass station do not know the name of Mt. Kain, but call it "Needle Peak" because of an enormous hole that pierces it just N.E. of the summit. Needless to say, these ascents from Red Pass were made in honour of our old guide, whose loss we so deeply regret.

—J.M.T.

PURCELL RANGE

Crescent Spire (ca. 9400). Northeast of Bugaboo Spire. First ascent, June 27, 1933. 3. M. Thorington, Conrad Kain.

Unnamed Peak (ca. 10,500). North of Bugaboo group. First ascent, August, 1933. Dr. and Mrs. I. A. Richards, Conrad Kain.

Leaning Towers Group

An unmapped group (circa 10,000). Immediately northeast of the source of Campbell creek, West Kootenay.

Pinnacle 1. First ascent, June 16, 1933. Burton Blanchard, R. G. Cairns, A. A. McCoubrey, Jr., R. Neave, A. A. McCoubrey.

Pinnacle 2. First ascent, June 17, 1933. R. G. Cairns, R. Neave, A. A. McCoubrey.

Pinnacle 3. First ascent, June 20, 1933. Burton Blanchard, R. Neave, A. A. McCoubrey.

Pinnacle 4. First ascent, June 22, 1933. Burton Blanchard, R. Neave, A. A. McCoubrey.

Pinnacle 5. First ascent, June 24, 1933. R. G. Cairns, A. A. McCoubrey, Jr., R. Neave.

COAST MOUNTAINS

Waddington Area

1933

Unnamed Summit (ca. 8000). South of snout of Scimitar glacier, July 8. A. E. Roovers, Hans Fuhrer. First ascent, p. 6.

Mt. Combatant (ca. 12,400). First ascent, July 14. Henry S. Hall, Jr., A. E. Roovers, Mr. and Mrs. Don Munday, Hans Fuhrer. p. 9.

Cataract Glacier. Ascended for first time to col leading from middle branch to upper part of Tellot glacier. July 20. Henry S. Hall, Jr., D. W. Brown, Mr. and Mrs. Don Munday, Hans Fuhrer. p. 15.

Mt. Geddes. Uncompleted ascent to 10,100 feet. July 23. Henry S. Hall, Jr., Mr. and Mrs. Don Munday, Hans Fuhrer. p. 19.

Mt. Cornelia. Uncompleted ascent to about 9700 feet. July 23. A. E. Roovers, D. W. Brown, p. 20.

Parallel Glacier. Ascended to col at head, north of Mt. Geddes. July 26. Henry S. Hall, Jr., D. W. Brown, Mrs. Don Munday, Hans Fuhrer. p. 21.

Unnamed Peak (ca. 8000). In pass N. of snout of Parallel glacier. First ascent July 26. A. E. Roovers, W. A. Don Munday. p. 21.

1934

N.W. Peak, Mt. Waddington (ca. 13,200). Second ascent, August 14, 1934. Henry S. Hall, Jr., Mr. and Mrs. Don Munday, Hans Fuhrer. Partly new route, from Dais glacier, p. 27.

Mt. Finality (ca. 9800). First ascent, August 17, 1934. Mr. and Mrs. Don Munday, P. H. G. Brock, R. N. R. Munro. p, 30.

Mt. Chris Spencer[2] (ca. 10,500). First ascent, August 16, 1934. P. H. G. Brock, R. N R. Munro. p. 30,

Mt. Cavalier (ca. 9000). First ascent, August 10, 1934. P. H. G. Brock, R. N. R. Munro. p. 27.

Mt. Squire (ca. 9000). First ascent, August 15,1934. P. H, G. Brock, R. N. R. Munro. p. 30.

Breccia Mt. (ca. 7500). First recorded ascent, August 7, 1934. P. H. G. Brock, R. N. R. Munro. R. L. Ramsell and T. Charlton known to have been on the mountain in June, 1928, possibly to the summit.

Lillooet-Toba Group

1933

Julian Peak (ca. 6000 feet). Page 56. Prominent peak above right-hand side of head of Toba inlet. Ascended in June, 1933 by A. H. Dalgleish and Neal M. Carter; later, on July 9, by Dalgleish, Carter, Tom Fyles and Mills Winram. Note: This name has been transferred from the peak of that name mentioned on page 61.

Mt. Dalgleish (9150 feet). Page 59. First ascent, June 15, 1933 by Tom Fyles, Alec H. Dalgleish, Dr. Neal M. Carter and Mills Winram. Note: This is the mountain referred to as Julian peak on page 61 of the article and on the map.

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2 Name recognized by Geographic Board.

THE ALPINE LIBRARY

(Miss A. M. McKay, Librarian, 1932-34)

Donations to the Library, 1933 and 1934.

TITLE	DONOR
Alpinisme Anecdotique; Charles Gos	The Publishers
Dierville; Port Royal; Champlain Society	Subscription)
Guide to Adirondack Trails (N.E. Section); Adirondack Mountain Club	Publishers
In Canada's Wonderful Northland	M. Bishop
Kinabalu; The Haunted Mountain of Borneo;Major C. M. Enriquez	F. H. LeCouteur
La Nuit des Drus; Charles Gos	Publishers
Manuel d'Alpinisme (2 Vols.); Club Alpin Français	Publishers
Mazama Annual; Vol. II, Nos. 1 and 2; Vol. VI, No. l	Mazama Executive
Mazama History (Reprint of Vol. I, No. 1); Mazamas	W. R. Tweedy
Men, Women and Mountains; Sir Claude Schuster	A. M. Binnie
On the Roof of the Rockies	M. Bishop
Peaks, Passes and Glaciers; Alpine Club	B. Meredith
The Conquest of the New Zealand Alps; Samuel Turner	A. M. Binnie
The Dolomites; H. S. Hamer	Miss K. McLennan
The Glittering Mountains of Canada; J. M. Thorington	A. A. McCoubrey
Trail Life in the Canadian Rockies	M. Bishop
Works of Samuel de Champlain (Vol. 5) Champlain Society	Subscription)

In addition bound copies of our Journal for 1929-30 and 1931-32 were donated by Mr. H. J. Graves. Mr. Frank Waterman had the "Guide to the Lake Louise region" bound and the binding of "The Rockies of Canada" repaired.

REVIEWS

MODERN MOUNTAINEERING

by George D. Abraham; pp. 198, and illustrations. Methuen & Co., 1933. Price 7/6.

This book will hardly add to Mr. Abraham's literary reputation, although the style is clear and concise and not without touches of wit. There are obvious signs of carelessness in its composition. The mistakes in names and spelling are rather too numerous to be excusable: a few of which are the following: "Sir" instead of "Lord Francis Douglas," "Adank" for "Adang," "Aymond" for "Aymonod," "Prestigstuhl" for "Predigstuhl," "Rue" for "Route de la 'Bicyclette'" (on the Grepon), "Saas Fee" spelt several times with an accent on the first e. The title is misleading for a volume that is too small to cover an extensive subject, and from which some of the most brilliant achievements of recent years are absent. On the other hand, the illustrations are admirable, and those of rock-climbing so excellent that they could hardly be surpassed.

The author is especially good, it seems to us, in the chapter dealing with British climbs. That on equipment provides sound advice: valuable for novices, and suggestive even for the experienced. The chapter on rock climbing is to be recommended. In 'Snow and Ice Craft Today,' Mr. Abraham emphasizes the importance of crampons, the usefulness of which is similar to that of rubber soles on difficult crags. Much of what is written on the 'Alps Today' reads like a superior guide book.

In one respect, the reviewer finds Mr. Abraham's attitude sympathetic; in his disapproval of recent extravagant developments of rock climbing, which involve the unlimited use of pitons, ropes, etc., and reckless disregard of human life. Examples of such are afforded by the steeple-jack method of recent European climbers, of which the ascent of the north face of the Grosse Zinne in 1933 has provided the most notorious instance. On this occasion more than 1000 feet of ordinary rope, 500 feet of light rope, 90 pitons and 50 carabiners were employed. Mr. Abraham has an astonishing plan of his own for coping with the dangers of avalanches on certain parts of the Wetterhorn. Several of his statements appear to us to be rather surprising, e.g., that there are no longer any cornices on the Lyskamm. They must have disappeared since 1929. Of course, their dimensions vary from season to season.

—J.W.A.H.

THE NAKED MOUNTAIN

by Elizabeth Knowlton; pp. 329 and illustrations. G. P. Putnam's Sons, New York, 1933, 6½ x 9 ½ . Price $5.00.

Since the determined attempt of Messrs. Mummery, Collie, Hastings and Bruce in 1895, in the course of which the first named perished, not with two coolies, as Miss Knowlton says, but with two Gurkhas, nothing of note, until the appearance of this volume, has been written about Nanga Parbat (26,200 ft.), which an authority has described as probably the most imposing peak of Asia: "The Naked Mountain, a tremendous massif, bare rock, ice-sheathed." The gifted writer was attached as English-speaking reporter to Herr Willy Merkel's German-American Himalayan expedition, which aimed at the ascent of this isolated and ninth highest mountain of our globe. Its attractions for climbers, in negative respects, are that it is not affected by the monsoon, and that it is not subject to great wind; on the other hand, the heavy snow-fall creates a special difficulty.

The experience of the Mummery party led this expedition to attack the peak from the north and northeast side.

Although Miss Knowlton is not an expert, yet she is an experienced climber, and reached several of the higher—including Camp IV, above 19,000 feet—but not the highest, camps. In regard to the advance from Camp IV to Camp VII, she had to depend on the reports of others. She writes about the climb psychologically, and has a strong sense of the dramatic. "We were never allowed to forget that we were dealing with something alive and menacing," (p. 159), she says, regarding the glacier movements and avalanches of snow and stones. "The heat and light struck like a blow, bringing discomfort to the strongest, and to the weaker, headaches, nausea and dizziness. But let a cloud drift for only a moment over the sun, and the heat was turned off as if by a button." There are eloquent passages in chapter XIV on the beauty and the cruelty of the snow, and a vivid description of a first night in an ice cave. An exciting chapter, XVII, recounts an episode above 20,000 ft. A tremendous tribute is paid to the character and talents of the young American climber, Rand Herron, whose poetry is frequently quoted, and who was killed on the way home, on a too rapid descent of the second Egyptian Pyramid; and warm appreciation is expressed for the work of Lieut. Frier of the Gilgit Scouts, as transport officer.

The expedition is said to have travelled light, but seems to the reviewer to have carried a large amount of luggage, even though a gramophone was omitted. The climbers reached a height of slightly over 23,000 ft. when fresh powdery snow made further advance impossible; but the failure of this strong and able party was not due solely to weather conditions. The theft of seven bags of coolies' outfit, (in addition to 1100 rupees), and recurrent friction with the Hunza porters, which began at the outset of the adventure, and which caused the attack on the peak to be delayed until a time of the year (August) when glacier conditions were less favourable, were equally, if not primarily, responsible for its ill-success. Earlier in the year the glaciers were not so dangerous; the crevasses were not so open. A suspicion arises that the porters may not have been wisely handled, owing perhaps to insufficient experience of this native material. Eventually they had to be heavily bribed.

Owing to the aim of Miss Knowlton's admirable and inspiring book, which describes the progress of the expedition mainly from the standpoint of the emotional reactions of the participants both collectively and individually, and the peculiar qualities of which cannot be adequately indicated in a review, some details are lacking that an alpinist would like to know: for example, the dates of the events, which are given only in a very summary manner in the appendices, and the heights of the camps, which, except for the base and highest camps, are not forthcoming and cannot be definitely inferred from the text. The writer's treatment of the experiences communicates the atmosphere and spirit of a big expedition very effectively, and is surely not incompatible with attention to_ important impersonal facts that would be of interest to mountaineering, and not improbably to general readers.

The expedition had expected to have two scientists, but monetary considerations excluded them coming, so it was resolved to concentrate wholly on the climb, and not to map, survey or geologise. Nevertheless, there are interesting, if rather brief appendices on geology, weather, diet and equipment. The illustrations are good, but not too numerous.

Since the publication of Miss Knowlton's took, Nanga Parbat has again been attacked, and once more shown its defensive powers. It has defeated a party, again led by Herr Willy Merkel, and not without tragic results. Besides Merkel, the party consisted of twelve German mountaineers and two British officers, one of them being Lieut. Frier of the earlier expedition. It seems to have

made good progress up to the beginning of June, when one of its members was taken ill and died (it is reported of pneumonia). After his burial, the attack was renewed and tents and stores were pushed up the northeast ridge. On or about July 8th, while making a final assault on the mountain, Merkel, Dr. Wieland and Dr. Welzenbach and seven porters were caught in a blizzard, and, with the possible exception of the first, are known to have perished. Details are, as yet, only imperfectly reported. (August, 1934).

—J.W.A.H.

MANUEL D'ALPINISME

Published by the French Alpine Club with the collaboration of the Groupe de Haute Montagne. Two volumes, 393 and 296 pp., 16 pp. of illustrations. Chambery, Librairie Dardel, 1934. Paper, 45 francs; cloth, 60 francs.

France has been very slow to make contributions to the present-day literature on mountaineering technique. Since the earlier book of this same name and Casella's L'Alpinisme, both published before the War and long out of print, nothing of the kind has appeared there except an official military manual. Meanwhile, however, the remarkable achievements of certain members of the Groupe de Haute Montagne on both the rock and the ice of the Chamonix aiguilles have indicated that there must be much of great interest awaiting expression by French mountaineers.

These leading climbers of the G.H.M., together with a select group of scientists, have now produced the present work under the auspices of the French Alpine Club. Unlike the traditional English book on mountaineering, it aims not only to be a manual of technique but to unite the theoretical and the practical interests in the mountains, or their science and their climbing art. In this it follows the pattern set three years ago by the German and Austrian Alpine Club's Alpines Handbuch, which is a virtual encyclopedia of mountain lore and mountain craft. Apparently the assumption it that the alpinist would or should know a great deal more about the geology, biology, etc., of his mountains than he generally does, and may well be offered this along with his technical instruction. No doubt this view has its plausibility, but it results in certain disadvantages. For first, the technique of the mountains is nowadays advancing far more rapidly than their science, at least in most of its branches; we need a new technical book every few years, whereas notable scientific works will be some decades apart. In consequence the two divisions of such a work are likely to become out of date at very unequal intervals. Secondly, whereas climbing technique is, with slight variations of emphasis, the same everywhere, science must speak with considerable differences of the various mountain groups the world over. The scientific treatments in these French and German works are, quite naturally, confined to their local mountains (primarily, of course, the Alps), with the result that to a non-European they are vastly less interesting and valuable than the almost universally applicable sections on technique.

The scientific articles, in the present work, constitute its first volume. They deal with such standard subjects as geology, glaciology, meteorology and Alpine fauna and flora, and such recent developments as photo-topography, the "human geography" of the mountains and alpinisme aerien. To pass upon the adequacy of these articles a set of experts would be needed. It is plain, however, that they are of very unequal scope and thoroughness, those on glaciology, meteorology and topography being of the first order in this respect while those on the fauna and flora, for instance, are very brief and quite lacking in the much needed illustrations. The article on the history of mountaineering confines itself to France!

Of the technical articles, which form the second volume, that on rock climbing is much the longest and best. Unlike most German treatments of this subject it shows a thorough acquaintance with the recent English works and one can read it with the sense of having a common background and point of departure. It is most highly to be recommended—in spite of its occasional tendency to overload the discussion of fairly simple matters with considerations of theory that, in typical French fashion, appeal more for their intrinsic logic than their real usefulness. The section on snow and ice work is much shorter and contains far less that is new. That on alpine ski-ing is altogether inadequate, and of little value. There is the traditional section on dangers, using the classic division into objective and subjective, and then follow good sections on hygiene, first aid, and the prevention and handling of accidents. The brief article on mountain camping will seem elementary to climbers of our continent.

This French encyclopedia is smaller, in both size and number of pages, than its German counterpart mentioned above, and less well illustrated; on the other hand, its beautiful printing contrasts most favourably with the difficult Gothic type, execrably small in certain chapters, of the other. It has the fault, too characteristic of French books, of lacking an index. It is remarkably low in Price.

—R. L. M. Underhill

MONT BLANC SIDESHOW. THE LIFE AND TIMES OF ALBERT SMITH

by J. Monroe Thorington; pp. xv+255 and illustrations. The John C. Winston Co., Philadelphia, 1934. Price $2.50.

The author of the "Glittering Mountains of Canada" has turned to a very different field in writing this lively biography* of that great self-advertiser and showman, Albert Smith. There is evidence of much research, of a most industrious accumulation of facts, skilfully selected, which, with the reproduction of interesting contemporary prints, help to set Albert Smith very intelligibly in the society in which he lived.

The son of a surgeon in the south of England, Smith took up medicine as a profession and entered Middlesex Hospital, London, in 1835, for 12 months as a Surgeon's pupil. The author, himself a physician, gives a brief, but instructive and amusing, account of the sorry equipment and inadequate training of medical students in London, in those days. It was far behind what could be obtained in Paris, where Smith was living in 1838, and whence in September of the same year, he made his first trip to Chamonix and had his first vision of Mont Blanc, in which his interest had been excited in childhood days by an artless story entitled: "The Peasants of Chamonix." Spartan economy had to be exercised on such trips, of which this was only the beginning. For although Smith was only 44 when he died in 1860, he had made exciting and dangerous ascents in balloons, strenuous walking tours through the valleys of Switzerland, had ascended Mont Blanc, visited Constantinople and the Nile, and had even gone as far afield as China.

After his return from the first visit to Chamonix, Smith constructed or reconstructed a panorama of the Alps, and refashioned a lecture to accompany it, based on an account of a climb of Mont Blanc by Auldjo in 1827. With these, he used to drive with his brother, a four-wheeled chaise across the country, "with Mont Blanc in the back seat," and offer his services to recently formed literary and scientific societies, the members of which "were enlightened upon the theory of glaciers and the dangers of the Grand Plateau," which he had not then seen. His brother brought forth applause "by holding a piece of wax-candle behind the moon on the Grands Mulets."

Between 1838 and 1841 Smith launched on a literary career, and in the latter year gave up medicine and, with almost no means, left the countryside for London. In Chapters IV, V and X, Dr. Thorington gives an account of his connection with Punch and The Illustrated London News, of his relations with Leach, Dickens, Thackeray and P. T. Barnum, and of his literary productions which were numerous, and showed unusual versatility. He had more than thirty published books, exclusive of plays, essays, and numerous sketches, to his credit. None of his novels can lay claim to greatness, according to Dr. Thorington, who says, however; "Opinion was current in contemporary circles, that some of his work was equal to that of Dickens." Except for "The Story of Mont Blanc," which the author holds that men of other sports, as well as mountaineers, will read and re-read long after many another book from the high hills is forgotten," nearly all of Smith's writings have passed into oblivion.

Dr. Thorington gives only a short account of Smith's famous ascent of the White Mountain, in 1851, on which wine was drunk to an extent that is now practically unknown on similar excursions by mountaineers. Smith seems to have regarded the expedition as good fun, although it was then considered hazardous, and he made it appear more so than it was. Doubtless he had a practical motive for this. Besides, he was heavy and out of condition. Pluck will serve me instead of training," he declared, "and I haven't the slightest fear." Pluck alone is not altogether a reliable asset, and the reviewer has seen would-be climbers under 30 years of age, who were good tennis players, stuck at the Vallot hut. Smith and his companions were troubled with nausea, and when the former reached the summit, he was utterly exhausted. On the way down to the Grands Mulets lie was unable to stand upright on the snow-slopes. He staggered like a drunken man and had to descend in a sitting posture. .

He lost no time m capitalizing his adventure. With characteristic courage, he took Egyptian Hall in Piccadilly for the presentation of his Mont Blanc Show; and partly owing to the clever way in which it was advertised, it met with an amazing success from the start. When he died in 1860, the performance had been given over two thousand times, and thrice by official command before the Royal Family. The Show had become one of the sights of London and was the means of accumulating for Smith a fortune of £18,000. Mr. Douglas Freshfield, who ,was still alive when Dr. Thorington wrote, is quoted as one who, at the age of nine, attended one of these performances. "He came forward," said Mr. Freshfield, "just at the psychical moment, when railways across France had brought the Alps within the Englishman's long vacation." The unprecedented success of Albert Smith was due to his enthusiasm, versatility, and ability to appreciate the right moment to turn from one thing to another; "to his tremendous flow of animal spirits," "his sense of good-fellowship" and "his delight in exploding myths and exposing shams" (p. 211). He was a born entertainer. Albert Smith was one of the original members of the Alpine Club, founded in 1857, and held seniority, as Dr. Thorington points out, with regard to the data of his ascent of Mont Blanc. But it seems too much to say that he was a pioneer, for there had been 57 ascents of the White Mountain before his, and he made no other ascent of note. It is true, that between the years 1852 and 57, 64 ascents of the Monarch were made, but by no means, all by Englishmen. It is easy to fall into a post hoc inference. During the period that Smith was lecturing, the work of Alpine exploration had seriously commenced among Englishmen. Doubtless his Show gave an impetus to the movement.

Dr. Thorington has produced a most informative and entertaining book, which all Alpine Clubs _should have on their shelves, as well as all mountaineers who are interested in the story of the Alps. The bibliography is comprehensive and the index is good.

—J.W.A.H.

MOUNTAIN DAYS IN THE ISLE OF SKYE

by J. E. B. Wright. The Moray Press, Edinburgh. Price 12/6.

Anyone who has climbed the wonderful mountains of the Isle of Mist will enjoy this latest book on adventures in the Coolin, and to those who have not had that privilege the excellent photographs with which the book is provided will give some idea of the type of climbing which Skye has to offer. It is a plain straightforward account by a professional guide in the English Lake district, written from the point of view of a practical climber, although embellished with humour and with a keen appreciation of the beauty and mystery of these mountains in the far west of Scotland.

The book opens with a delightful account of a journey from Seatoller in the Lake district to the Isle of Skye at the beginning of April. On this first visit the author sees the Coolin under Alpine conditions, and is forced to abandon an attempt on the Pinnacle Ridge of Sgurr nan Gillean in favour of the Tourists' Route up that mountain, an easy stroll in summer weather. He evidently revisited Skye on a number of occasions, and climbed the mountains in sunshine and in storm, by day and in the twilight of a Highland summer night. One of the most exciting accounts is that of an ascent of the easy side of the Inaccessible Pinnacle in the teeth of a hurricane from the Atlantic. The book concludes with a list of the principal climbs in the Coolin, which will be found very useful by those visiting Skye for the first time.

—W.B.

EVEREST 1933

by Hugh Ruttledge, Hodder and Stoughton Ltd.. London, 1934, pp. 390 and 59 illustrations and maps, tables and charts, 257-

This is a stately and weighty volume, weighty in more than one sense, describing the fortunes of the fourth expedition to the Great Peak of the Himalayas, and summing up what has, up to now, been achieved on previous expeditions. It contains a wealth of absorbing facts and much interesting and enlightening discussion.

It is well known that the climbers of 1933, not only failed to reach the summit, but also to reduce the distance between the summit and the highest point reached by the expedition of 1924. The weather in the latter year was very unfavourable; the weather in 1933 was abnormally so, and rendered all chances of success impossible, except, perhaps, on one day when, on the second assault, one of the climbing party broke down. But the experiences of last year have helped to make the possible routes to the summit more definite by the knowledge that the hitherto apparently obvious route along the northeast ridge is barred by two "steps" that cannot be climbed. The climbing parties were led to try the northern face on which the climbing was very dangerous, if not, indeed, difficult, owing to the condition of the snow, the absence of handholds and the smooth and sloping-out character of the rocks: and one of them was brought up against a great couloir, filled with snow of an exceedingly steep angle, (Picture p. 245). Mr. F. S. Symthe, the conqueror of Kamet, whose climbing fitness stands out among a group of unusually able mountaineers, thinks that a subsidiary couloir may prove to be one of the important weaknesses in the mountain's defences, (Chap. VIII). He and two others of the storm troops, Messrs. Wyn Harris and Wager, reached, on two different occasions, a point a little over 28,000 ft. from Camp VI, which was pitched at 27,400 ft. (that is, some 600 ft. higher than the highest camp of the 1924 expedition); due to the splendid work of the

brigade of porters known as the Tigers, on the improvement of whose skill and morale Mr. Ruttledge comments admiringly. Mr. Smythe, who proceeded alone after his companion had returned to camp, says of one place: "The balance was too critical, and I felt that an extra deep breath might topple me backward down the couloir to the Rongbuk glacier, 9000 ft. beneath." "The bitterness of defeat was brought home to me, but it was a bitterness mercifully dulled by altitude." Had the snow conditions and the weather been at all decent, there might have been a different tale to relate.

After a foreword by Sir Francis Younghusband, the author gives an account of what had been previously achieved on earlier expeditions, followed by description of the preparations, including the selection of the climbers. A chapter on the assemblage of the personnel and equipment is succeeded by a vivid account of the march to the Rongbuk glacier, which traversed the route of the former expedition. There are lucid descriptions of the painful difficulties of bringing the climbers up to Camp IV, near the north col on May 25th, and interesting data regarding the times of ascents to the upper camps. Although only some fifty pages are devoted to an account of the three assaults, the last of which rather petered out on account of furious blizzards, yet much hazardous climbing was involved in establishing the highest camps, and in descending from Camps VI and V to Camp IV. On the great expanse of the northern face, it was not possible to find a ledge where a small Meade tent, seven feet by four, could be properly pitched. An instructive picture of the position of these camps is given, opposite page 108.

This handsome book, with its many excellent pictures, provides plenty of thrills, without showing any attempt at sensational writing. One of the most stirring experiences of the climbers was the finding of an ice-axe, "which was in perfect condition, looking like new," and bearing the name of Willisch of Taesch. It was not far from Camp VI. (Picture opposite p. 188). Mr. Ruttledge inclines to the view that it belonged to Irvine and that it supports the belief that he and Mallory met with an accident. Was it on the descent? Another important point which is raised by this find and better knowledge of the northeast ridge is, whether Mr. Odell, who was then at 26,000 ft., was not deceived in thinking that the two black specks which he saw, or seemed to see, moving upwards, at either the first or second 'step,' were really the figures of Mallory and Irvine, (pp. 146-149).

Almost half the pages of the book are filled with summaries of the additions to general knowledge that have resulted from this and previous expeditions. In the chapter entitled "Retrospect and Prospect," some important conclusions are reached, among them: that the proper season for the attempt is during May and the early part of June; that oxygen should be among the available means; that Everest is, in a technical sense, a difficult mountain; that the porters are physically and morally capable of bringing climbers, who should be between 25 and 35 years of age, within reach of the summit; and that probably the final climb can be made from the height and position of Camp VI. Of course, the chances would be improved, if the last camp could be placed 500 ft. higher.

Dr. Greene under the heading, "Some Medical Aspects," discusses the acclimatization, deterioration and general effects of altitude on the human organism. Mr. E. O. Shebbeare contributes sections on Transport, and on Natural History and Botany. A review of the Geology, which is not easy reading for non-experts, and a section on the Weather are from the pen of Mr. L. R. Wager; and Dr. Sen and a colleague in Calcutta write learnedly on Himalayan Meteorology. In its comprehensive treatment of these topics, and in its account of the consolidation of the gains made by all the parties that have attempted Everest, the volume is monumental. Considering the dreadful pressure of weather, and the treacherous character of the snow, especially on the upper slabs, which were tilted like slates, the expedition was fortunate in having no fatalities. We may hope that this is a good omen for eventual success.

—J.W.A.H.

ALPINE NOTES

DOUGLAS WILLIAM FRESHFIELD

1845-1934

One of the most distinguished members of the British Alpine Club, the dean of all English-speaking, if not of all mountaineering clubs, Mr. D. W. Freshfield, died in February of this year, at the age of ,89. His first ascent was made as far back as 1861; his active climbing career began in 1863 and continued until 1920, the year of his second visit to Canada. It seems strange that this masterly writer and great pioneer in mountain exploration was not enrolled among the members of the Canadian Alpine Club. Numberless honours were conferred on him by the Alpine and Geographical Societies of the world, of many of which he was an honorary member.

At the age of 69 Mr. Freshfield was planning a trip, to which the outbreak of the war put an end, to the great peaks of Turkestan and the Alai. In 1868 he had made his first explorations and climbs in the Caucasus of which "Travels in the Central Caucasus and Bashan" is the record. This was followed in 1896 by the monumental work, "Exploration of the Caucasus" in two volumes. These and "Italian Alps" 1875, "Round Kangchenjunga" 1903, which has been invaluable to all who have since approached or attempted that mountain, a book of verses "Unto the Hills" 1914, "The Life of Benedict de Saussure" 1920, and "Below the Snow Line" 1923 are his main achievements in, out of an enormous contribution to, Alpine literature. A rough estimate of the signed articles written for the Alpine Journal gives their number as 176: many were left unsigned. And in regard to these contributions the present Editor of the Journal declares with assurance: "No member of the Alpine Club can ever approach Freshfield's record, still less his nobility of thought and style; his narratives flow with a beautiful, restrained rhythm, unique and inimitable." (A.J., Vol. XLVI, p. 170). His many-sided interests and activities reflect a personality greatly favoured by nature. It would be difficult to find another comparable with him in the astonishing combination of writer, alpinist, mountain geographer and explorer, poet, artist and scientist. It is as a mountain explorer and traveller that his name, as he himself wished, will probably be best remembered and honoured.

Although Mr. Freshfield had many first ascents and new routes to his credit, he was no upholder of recent acrobatic alpinism. He despised what he designated "the instruments of road-breakers." The beauty and topography of the mountains seem to have appealed to him even more than the climbing. One of his idiosyncrasies was opposition to club badges as favouring publicity and undesirable advertisement, at which tendency he took a shot in the verses quoted by the Editor of the *Alpine Journal,* Vol. XLVI:

"A youth who bore through snow and ice, A button with a strange device,
Profundior!"

We retain a vivid recollection of his brilliant and informative conversation with groups of mountaineers at Lake Louise, and of a delightful day spent with him, Mrs. J. W. Henshaw and Mr. A. L. Mumm at Banff, when he was, with difficulty, and to the great relief of his travelling companion, dissuaded from undertaking the trip to Mt. Assiniboine camp, to which he had been invited as the guest of the Alpine Club of Canada. He declared himself not only eager to see the country, but to try the peak with Mr. Mumm and Inderbinnen. He was then in, his 76th year. The thought of having to use a mountain pony on the trail made him shrink. We then suggested

to him the ascent of Mt. Abbott at Glacier from which he enjoyed the fascinating views of the neighbouring Selkirk peaks and the four thousand feet of which he found quite satisfying.

An excellent portrait in his later years of this almost last survivor of what has been termed the Golden Age of Mountaineering is contained in the already quoted issue of the Alpine Journal, p. 166.

—J.W.A.H.

THE LIFE OF CONRAD KAIN

Where The Clouds Can Go. The Autobiography of Conrad Kain.

Edited, with additional chapters, by J. Monroe Thorington.

Early in 1935 the American Alpine Club will publish this book for its members. A limited number of copies will be placed on sale at $3.00 each, postpaid. All orders must be accompanied by check or money order, and should be sent to Dr. J. M. Thorington, 2031 Chestnut St., Philadelphia.

The book will consist of approximately 500 pages, bound and illustrated, and will contain the entire life of this well-known guide, including his expeditions in the Alps, Corsica, New Zealand, Canada and elsewhere. Many of his stories, including "The Millionaire Guide" are recorded.

By the conqueror of Mt. Robson, this book is probably the most important ever written by a guide, and deserves the support of all mountaineers.

All receipts in excess of expenses will be used to assist Kain's mother, who is now destitute in Austria.

ALPINE SONGS

The Edmonton section has been experimenting with community singing at the Section dinners, by projecting the words on a screen, instead of using songbooks, and has found a great improvement in the enthusiasm of the singers. Lantern slides have been made from about twenty-four of the best Alpine Songs. If any section of the Club would like to obtain copies of any or all of these slides, they may be obtained from the Chairman of the Edmonton section for the cost of material—not more than ten cents each. Music for all these songs can also be obtained from the same source at 7 cents per page. Address C. G. Wates, 7718 Jasper Ave., Edmonton, Alberta, who will gladly furnish a list of available song-slides.

APPRECIATION

The undersigned desires to express his very keen appreciation of the first award of the highest distinction of the Club, "The Silver Rope," made to him by unanimous vote of the General Meeting held at the Annual Camp in Eremite valley, July 27, 1934. This great honour is the more appreciated in that he also holds the Club's Badge, No. 1.

The resolution creating the distinction of "The Silver Rope" was presented to the Annual General Meeting of 1933 as a notice of motion and, in due course, was submitted to the members and adopted. Its award is for the purpose of recognizing outstanding good work done in amateur leadership by members of the Club, and to incite members to such leadership and all that goes with it in acquirement of the knowledge, skill and technique of mountain climbing.

——ARTHUR 0. WHEELER

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—J.M.T.

NANDA DEVI

Nanda Devi, with an altitude of 25,645 feet, in the Kumaun Himalayas, is reputed to be the highest mountain entirely within British territory. The area in which it lies is so rugged that even the base of the main peak defied assault until this year, though in 1907 Dr. T. G. Longstaff made an attempt via the Rishiganga gorge. In a letter to the *Times* of Nov. 2, Mr. H. Ruttledge

gives a preliminary account of an expedition to Nanda Devi, led by Mr. E. E. Shipton this year. In June, with Mr. Tilman and a few native carriers, Mr. Shipton forced a way up the precipices of the Rishiganga gorge to the source of the river and explored the northern flank of Nanda Devi. Before the monsoon broke, they retreated northward and during July and August explored the Arwa, Bhagat-Kharak and Satopanth glaciers before returning to their main task. Once more they ascended the Rishiganga gorge, mapped the southern basin of Nanda Devi, climbed a considerable distance up the peak and discovered a way that in the proper season, would no doubt lead to the top. Finally, in September they crossed the difficult Sonadungha col and descended to the south.

CLUB PROCEEDINGS AND CLUB NEWS

MOUNT TEMPLE CAMP

Paradise Valley

July 18th to July 31st.

The Twenty-eighth Annual Camp was held on the site of the 1918 Camp in Paradise valley. Situated on the trail to, and about a mile below, the Giant Steps the Camp was mainly located on the slope of Mount Aberdeen, though the men's quarters were across the creek on the flat below Mount Temple. Easy access to camp was had by the old trail starting from where the Moraine lake road crossed Paradise creek, at which point a base camp and a parking space for cars had been cleared by the kindness of Mr. Wardle, chief engineer for the National Parks, and the trail gang. Some members however preferred the route over Saddle Mountain from Lake Louise. In addition, one party came in via the Wenkchemna and Wastasch passes, and another party via Mitre pass.

Weather on the whole favored us, though the lateness of the season and occasional fresh snow on the peaks made climbing more difficult, and at times several degrees of frost at night caused the lighting of many individual fires in various forms, from the simple smudge to the elaborate fire-place.

Picnics, training walks and photographic excursions were undertaken in various directions—to Lake Annette, the Giant Steps, Mitre pass and Sentinel pass; and the popular two-day trip round the glaciers and passes was enjoyed by many members.

The Elizabeth Parker hut was used as a resting place overnight for the latter trip as well as a base for climbing parties, and much appreciation was expressed for Mr. L. Grassi's work in renovating the bunk-house. Once more our thanks are due to the authorities for the loan of blankets, thus enabling' this fly camp to be successfully used without undue packing by the members concerned.

Our thanks are also due to the Canadian Pacific Railway officials for their many kindnesses, not the least of these being the loan of the services of those willing and efficient guides, our old friends Edward Feuz and Christian Hasler.

The entire camp management was once again in the hands of Mr. C. Richardson, and the pack-train organized and run by Ralph Rink, whose cheerfulness and efficiency are so well-known to our members.

Visitors to the Camp included Miss C. B. Hinman, Mr. J. Murray Gibbon of the Canadian Pacific Railway, Major P. Jennings, Park Superintendent, Mr. Warren, chief Warden and Konrad Kain.

Climbs from the main camp were made of Mts. Temple, Aberdeen, Pinnacle, Eiffel and the Mitre, the latter being voted by far the most pleasant experience. Mr. C. Wellen attempted a solo climb of Temple by a new route, while Mr. R. Neave and R. Hind made a traverse of Pinnacle. Another long expedition was to Eiffel via Sentinel pass returning via Wastasch pass.

From the Elizabeth Parker hut climbs were made of Mts. Biddle, Odaray and Victoria.

Great assistance was given by Mr. A. Binnie, Mr. R. Neave, Mr. A. S. Sibbald, and Major E. O. Wheeler, whose patience and kindness enabled many to enjoy instructive and interesting climbs, while the older members were delighted with the opportunity to renew acquaintance with the latter who is home on furlough from India.

The Camp-fire, under the chairmanship of Mr. W. J. Sykes in the absence of our Honorary President, Mr. A. O. Wheeler, and of the latter upon his arrival in camp later, included many interesting talks and discussions. Among those who spoke were Mrs. A. F. Wedgwood, whose comparison of the present camp with those she had attended in the past proved entertaining and amusing; Miss C. B. Hinman who talked of the delights of Trail-Riding and welcomed Mr. Murray Gibbon's idea of the "Sky Line Hikers"; Miss J. Bostock who described some of the flora of the neighborhood; Mr. A. Binnie who talked on New Zealand climbs; Mr. R. T. Zillmer who described his trip around the Drummond and St. Bride glaciers, taken just before camp; Major E. 0. Wheeler who spoke on Everest, and Konrad Kain who told some very amusing tales.

Graduating List, 1933

The following passed the test for Active Membership:

Mt. Aberdeen

July 19th—Mrs. B. McNeil. Mr. C. L. Harrison.
July 20th—Mrs. S. Vallance. Misses F. Agar, D. Bancroft, G. Hartley, F. E. Wedgwood. H. Zillmer.
July 26th—Miss K. F. Wedgwood.

Mt. Temple

July 24th—Mr. D. E. Peddle.

Annual Camp Visitors

Visitors were drawn from the following places:

CANADA

British Columbia—Monte Creek, Sidney, Vancouver, Victoria, Wilmer.
Alberta—Banff, Calgary, Edmonton.
Saskatchewan—Regina, Saskatoon, Shaunavon.
Manitoba—Winnipeg.
Ontario—Toronto.
Quebec—Montreal.

ENGLAND

Cambridge, Ightham, Oxford, Sevenoaks, Warrington.

INDIA

Quetta.

U.S.A.

California—Ojai, San Francisco, San José.
Illinois—Chicago.
Massachusetts—Brookline.
Minnesota—Minneapolis.
Montana—Great Falls, Havre.
New York—Brooklyn, Jericho, New York.
Ohio—Cleveland.
Oregon—Portland.

Pennsylvania—Merion, Philadelphia.
Wisconsin—Milwaukee.

Altogether ninety-four were placed under canvas; representatives attending from the Alpine Clubs of England, America, France, Switzerland, the Ladies Alpine Club, The Swiss Ladies Alpine Club, The Royal Geographical Society, Appalachian Mountaineering Club, The Mazamas, and the Sierra Club.

For the minutes of the Annual Meeting see The Gazette, No. 22, October, 1933.

CHROME LAKE CAMP

(Eremite Valley)

July 16th to July 31st

The Twenty-ninth Annual Camp was held in an alpine meadow about two miles south of Chrome lake, between Outpost and Thunderbolt Peaks, both of which afforded facilities for mountaineering schools and training climbs.

The Park authorities cut a trail up the Astoria river from the viewpoint near Edith Cavell, and our thanks are due them for thus eliminating the half-way stop and enabling members to reach Camp in one day, as well as for other kindnesses extended.

Weather, which had been wet and cold up to the official opening, cleared wonderfully and only on one occasion during the Camp period was it necessary to postpone climbing, though fresh snow on the peaks prevented climbs in the Ramparts.

Picnics, sketching parties, and various expeditions were undertaken to Amethyst lakes, and also to those below Thunderbolt Peak and Outpost, though the lateness of the flowers was a disappointment to the various botanists and photographers.

The Memorial Hut was used by several of the members, both as a base for climbs and for picnics,; as well as an extra supper place for late parties returning from various expeditions.

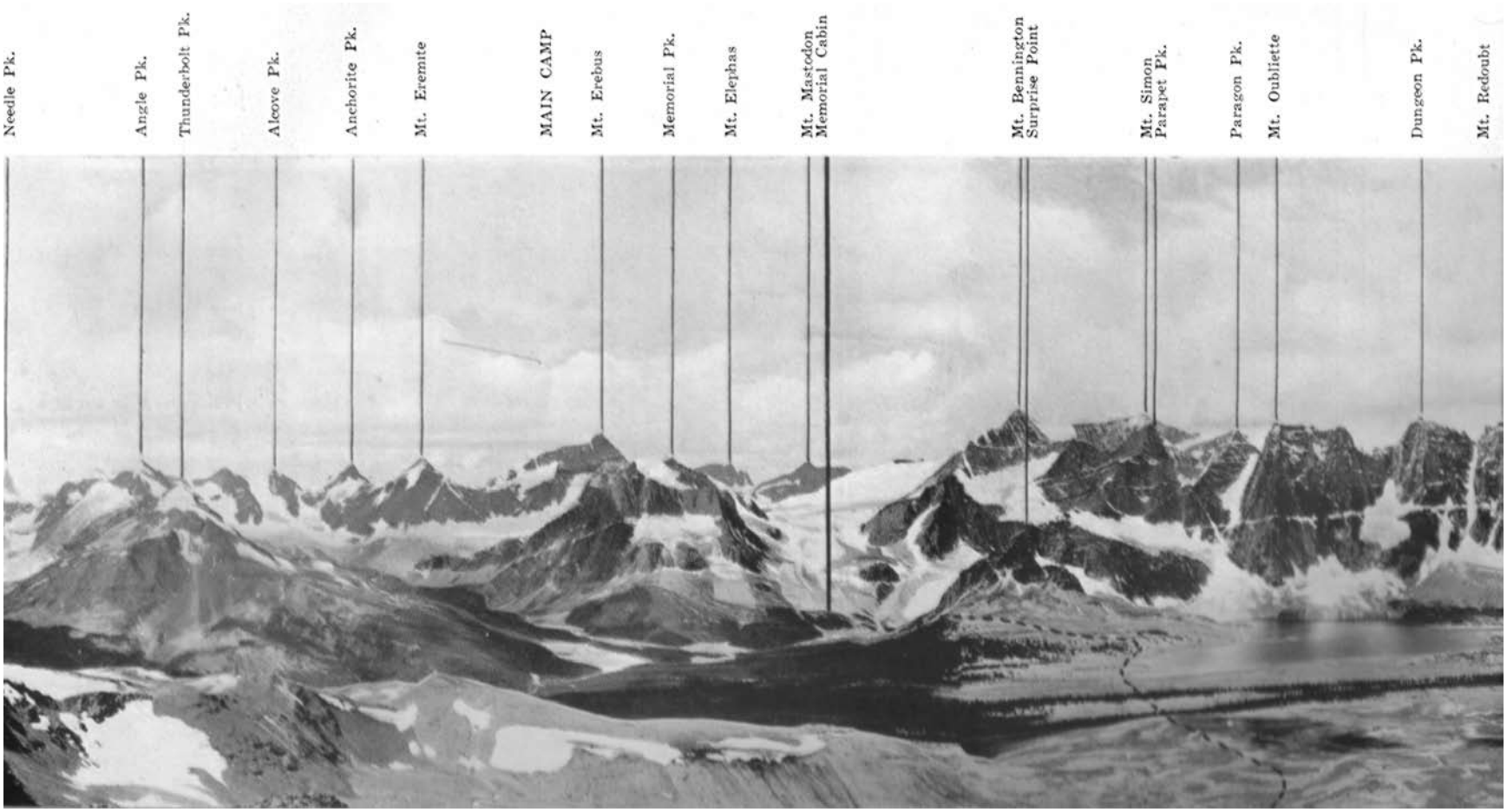
We are greatly indebted to the volunteer guides, Messrs. Cleveland, Corry, Gibson, Beattie, Cuthbertson and Neave, for their strenuous efforts devoted to satisfying the climbing ambitions of members. Few camps in recent years can have shown such activity —on frequent occasions 95% of the membership was out of camp during the day—a fact due to the organizing abilities of the Climbing Committee under the President.

Our thanks are also due to the Canadian National Railway officials for their many kindnesses and for the attendance of Mr. J. Thornton, their able and most helpful representative in Camp.

The pack train and catering for the Camp was undertaken by Mr. Jack Hargreaves of Jasper, and mention should be made of the splendid cooks he had engaged, Harry Parkins and Frank Gladish, who provided excellent meals.

First ascents were made of "Anchorite," Angle, Needle, and the Pinnacles at the head of the valley by Eremite pass. Other climbs undertaken were Alcove, Bennington, Erebus, Eremite, Memorial Peak, Oldhorn, Outpost, Paragon, Simon and McDonnell. The flycamp at Icefall lake for the use of members making the glacier trip, was visited by three parties, but weather conditions prevented any climbing of Geikie or the North Ramparts.

The evening camp-fire provided interest and instruction as usual, talks being given by Capt. Gibson on the uses of the rope and ice-axe; by Mr. Wates on early climbs in the Tonquin; by Mr. F. H. Brigden of Toronto, on Canadian art; by Mr. R. Neave on his trip to the Waddington area; by Mr. Gambs on his trip to Greece; by Mr. Walter Bloch on tours in Europe; and by Mr. Waterman



Southern Ramparts From Mt. Maccarib. *Photo A.B.C Boundary Survey*

Showing the peaks climbed from the 1934 Annual Camp.

on flower photography. Singing was conducted by Mr. Wates and the Edmonton Section, while the Rev. C. Wellen took Divine Service on Sunday. Another interesting feature was a criticism of the Photographic Competition entries by Mr. F. H. Brigden and Dr. Bulyea.

The following passed the test for Active Membership:

Alcove Mountain:

July 19th—Dr. J. Southard.
July 23rd—Messrs. R. Cross, W. Dully, L. Tiefenthaler.
July 24th—Messrs. A. G. Coulter, J. Thomton, R. H. Peck, W. H. Peck.

ANNUAL CAMP VISITORS

Visitors were drawn from the following places:

CANADA

British Columbia—Kelowna, Prince George, Vancouver, Victoria.
Alberta—Calgary, Edmonton, Ponoka, Winterburn.
Saskatchewan—Regina, Saskatoon, Shaunavon.
Manitoba—Winnipeg.
Ontario—Toronto.

EUROPE

England—London.
Switzerland—Zurich.

UNITED STATES

California—Ojai. Illinois—Chicago, Evanston. Maryland—Garrett, Park. Massachusetts—Brookline, Mattapoiset. Minnesota—Minneapolis. Montana—Havre.
New Jersey—Glen Ridge, Morristown. New York—New York. Ohio—Cleveland. Oregon—Portland. Pennsylvania—Merion. D.C. Washington.
Wisconsin—Milwaukee.

Altogether sixty-eight (75 with crew) were placed under canvas; representatives attending from Alpine Clubs of England, America, France, Switzerland; The Climbers Club, The Ski Club of Great Britain, the Ladies Swiss Alpine Club, the Royal Geographical Society, the Appalachian Mountaineering Club, the Mazamas, and the Sierra Club.

For the minutes of the Annual Meeting see *The Gazette,* No. 24, October, 1934.

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● Chalet-bungalow camps open about June 21 to September 10, 1935.

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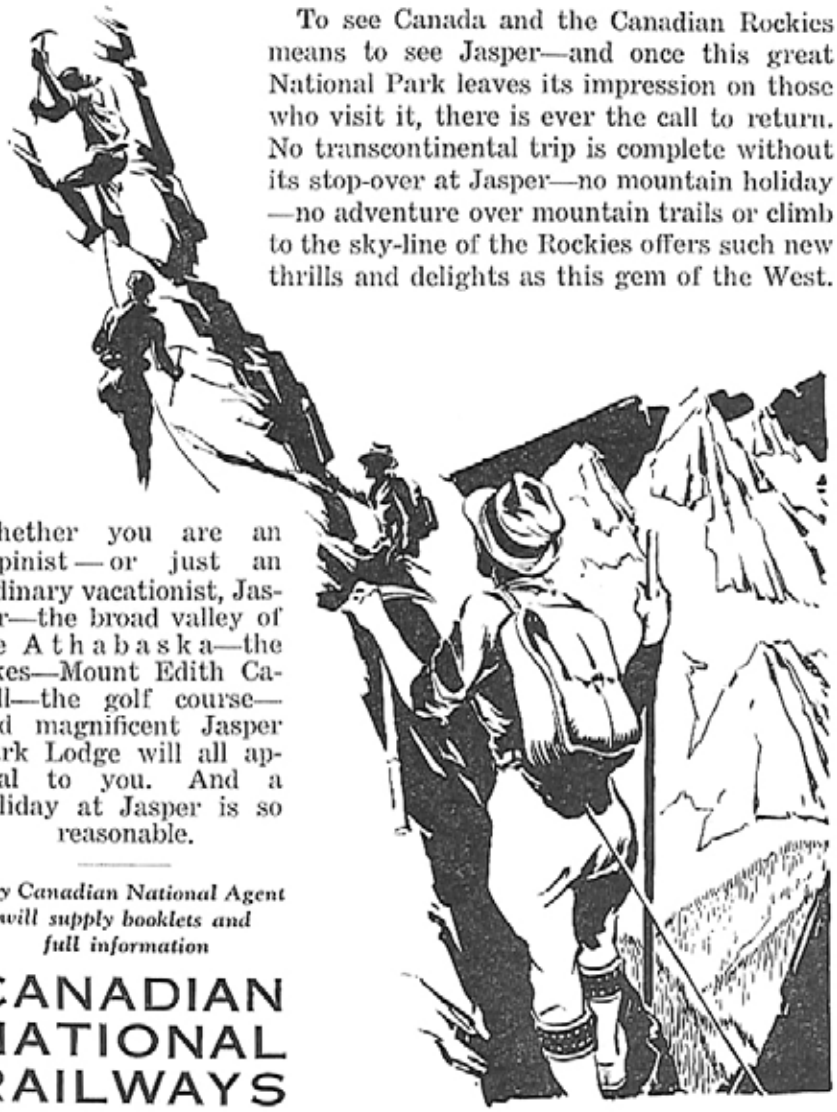

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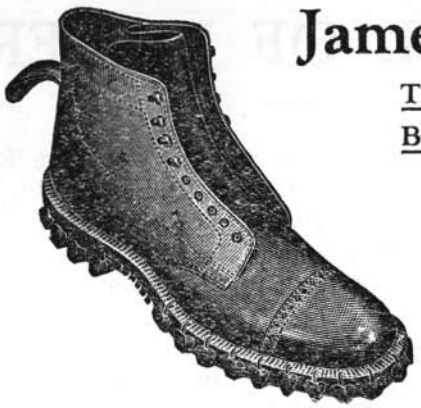

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