Climbs in the Forbes-Lyell and Other Groups of the Canadian Rockies, 1926.

By J. Monroe Thorington, M.D.

Who has known heights, shall bear for evermore
An incommunicable thing
That hurts his heart, as if a wing
Beat at the portal challenging;
And yet—lured by the gleam his vision wore—
Who once has trodden stars seeks peace no more.

Mary Brent Whiteside.

On the evening of September 10, 1858, Dr. Hector, physician and explorer of the Palliser Expedition, encamped at the Saskatchewan Forks, observed a comet, and, during the night, heard a great noise, like distant thunder, at intervals, which his Indian hunter said was caused by ice falling in the mountains. Three days later, in the Glacier Lake valley, he discovered and visited the Lyell icefield.

The star was of good omen; for, since that day, the sources of the North Saskatchewan have become a playground, although the remote upper fastnesses are even now known only to a small group of mountaineers. This is especially true of the Glacier Lake country, a little off the main through trails; and when, in the summer of 1926, we—Dr. Max Strumia, Mr. Alfred Ostheimer (III.), Edward Feuz, and myself—joined forces to visit the region, we could gain but little information from our predecessors.

The late Sir James Outram, with Christian Kaufmann, in 1902 ascended Peak 2 of Mt. Lyell from Alexandra River, and the present Mons Peak from the valley of Glacier Lake,[1] shortly afterwards joining Dr. Collie and his companions in the ascent of Mt. Forbes from the S.[2] Collie and his party then came to Glacier Lake, reaching the icefield but doing no extensive climbing. The Interprovincial Survey, in 1918, reascended

[1] *In the Heart of the Canadian Rockies*, Outram (Macmillan, 1905), pp. 311 ff., 388 ff. *A.J.* **21**, 338.

[2] *Climbs and Exploration in the Canadian Rockies*, Collie and Stutfield (Longmans & Co., 1902), p. 273 ff. *A.J.* **21**, 370.

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PANORAMA OF LYELL ICEFIELD
from above Glacier Lake.

1 Sarbach, 2 Kaufmann, 3 Cephren, 4 Howse, 5 Outram, 6 Forbes, 7 Mons Icefield, 8 Lyell Glacier, 9 Bush, 10 Lyell Icefield, 11 Lyell Massif.

Mons Peak [3]; while, in 1920, Dr. J. W. A. Hickson, with Edward Feuz, repeated the ascent of Mt. Forbes.[4]

To us, the peaks of Lyell, affording the most compact group of high unclimbed summits left in the Canadian Rockies, together with the proximity of Mt. Forbes, were inducement enough to make the region the goal of a summer's holiday. We arranged with Jim Simpson, with whom I had already visited the Freshfield and Columbia icefields,[5] to outfit us and guide the pack-train.

Bow Valley, on the evening before our departure, was gorgeously coloured, the deep rose tints of alpine glow lighting the cliffs for miles and contrasting with the darkness of the forests. We found ourselves lingering until the last purple vestiges had disappeared, leaving the peaks black against the western sky.

Early on the morning of June 30 our horses were saddled and packed, and we were once more on the trail. The fallen trees have been fairly well cleared, but there are still places where the wind has been at work and burned trunks are tumbled and interlaced like jack-straws. More than once we were glad to take the advice of the good Jesuit priest, Father Pierre-Jean de Smet,[6] who travelled through an adjacent portion of the valley late in September 1845. 'At the entrance of each thick forest,' he writes, 'one should render himself as slender, as short and as contracted as possible, imitating the different evolutions in all encounters of an intoxicated cavalier, but with skill and presence of mind. I mean to say, he should know how to balance himself—cling to the saddle in every form, to avoid the numerous branches that intercept his passage, each ready to tear him into pieces, and flay his face and hands.'

We camped that afternoon on the slide below Mt. Hector, receiving the visit of several deer that joined the horses feeding on the slopes near by. Next day we arrived at Bow Lake, in time to enjoy several hours of excellent fishing, the catch of lake trout filling the pans to overflowing. At dusk a buck and two does walked through camp on their way to the water.

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[3] *Alberta and British Columbia Boundary*, Part II., 1917–1921 (Office of the Surveyor General, Ottawa, 1924), pp. 32, 40,

[4] *C.A.J.* xii. p. 25.

[5] *The Glittering Mountains of Canada*, Thorington (Lea, 1925), chapters iii.–vii. *A.J.* **34**, 387; **35**, 178.

[6] *Life, Letters and Travels of Father Pierre-Jean de Smet, S.J.*, 1801–1873, Chittenden and Richardson (Harper, 1902), vol. ii. p. 513.

On July 2 our tents were put up beside the Wildfowl Lakes, a day of sunshine and shadow bringing us over the pass into Mistaya Valley with its long vistas into the remote north. A long day's ride brought us around the bend, above the Saskatchewan Forks, into the valley of Howse River, where we enjoyed a welcome bath in the shallow pools among the gravel bars. Up-trail, on a blaze several years old, was written in pencil: 'Wind blowing hard; snow drifting in: what a romantic life this trapping game is!' The blaze was high above the ground—the snow had been deep—and the handwriting was that of our old friend and guide, Conrad Kain. The principal fur taken in this region is marten; steel traps are used, although Indian hunters still make occasional use of deadfalls. Forty pelts is a good winter's catch, the skins bringing thirty to fifty dollars each, depending on quality and the state of the market. We saw no large game, although the bank of the river, with its flat sandy dunes, was criss-crossed with tracks of deer and moose.

Fording the river, on July 4 we drove the pack-train along the northern bank of Glacier River, past the log-jam—where there were fallen trees to be cut away before the trail was clear—to the lake. Keeping near the edge, we followed along the milky turquoise sheet of water, arriving shortly after noon at the flats at the far end, where we pitched camp in the fringe of a grove of spruce close to a clear stream coming from the head of the valley, in full view of the tumbling icefalls of the Lyell glacier.

We decided to lose no time in setting about our climbs, and shortly after lunch loaded our packs with camping equipment and provisions, carrying them over the level leading to the glacier. We had caught a glimpse of Mt. Forbes from the Saskatchewan, and from the lake shore; now its N. face was again revealed: 'a ramp of stainless snow whose knife-edged ridges culminate in a sharp point that pierces the blue heavens like a javelin.' Of the Lyell glacier itself, Collie wrote that it is 'incomparably the finest we have seen in the Rockies; it is on a larger scale than anything of the kind in Switzerland.' Passing several wooded islands margining the stream, we approached the ice. It seems to have changed but little since Dr. Hector's visit in 1858, and it was most interesting to follow his accurate description[7]: '. . . we reached a high

[7] *Journals, Detailed Reports, and Observations relative to the Exploration of British North America*, Captain John Palliser (Folio. London, 1860), p. 110.

moraine of perfectly loose and unconsolidated materials, which completely occupies the breadth of the valley, about 100 yards in advance of the glacier.[8] Scrambling to the top of this, we found that to our left a narrow chasm, with perpendicular walls, brought down a stream from a glacier descending by a lateral valley from the south, but that the greater bulk of the water that formed the river issued from ice caves that were hollowed beneath the great glacier of the main valley. . . . I now saw that the glacier I was on was a mere extension of a great mass of ice, that enveloped the higher mountains to the west.'

A huge rock promontory—Gibraltar in miniature—rises just below the ice terminus. Near its eastern extremity it is split by the narrow cleft which Dr. Hector noticed, now containing a stream of clear water, but giving evidence that at no remote period it served as an outflow for the Mons glacier lying in the adjacent southern valley. Now, however, the Mons stream runs on the western margin of the rock promontory, joining and deflecting the Lyell torrent, so that the combined river flows transversely with great force across the Lyell ice-front, eroding it as fast as it advances, well above the point where the ice terminus would normally be found. The water swings in a great curve before starting down the valley, in a violent, boiling flood, perfectly impossible to ford, carrying down blocks of ice weighing tons.

The ice facing the river rises above it in a cliff, twenty to fifty feet high. At the angle where the Mons stream joins the Lyell we found, after some searching, a bridge of broken séracs over which we could cross. Edward then cut a staircase up to the higher level of the glacier. The tongue below the icefalls is flat, and about two miles long. Throughout its length there is a sharply defined mid-line, dividing the clear southern ice of the precipitous fall adjoining Division Mtn. from the northern, débris-strewn segment derived from avalanches pushed over the cliffs from the higher levels of the icefield. Night and day the ice breaks off from the brink of the precipice

[8] From Dr. Hector's description, and the size of the trees on the terminal moraine, one would judge that this moraine was formed at least two hundred years ago. At one time the Mons and Lyell tongues were united, and swept over part of the great rock promontory at the ice terminus, part of the stream following its present course, while a small volume escaped through the narrow canyon at the eastern end of the promontory. The Lyell tongue is now about 440 yards from the terminal moraine, a retreat of approximately 340 yards since 1858, or 15 ft. annually—an extremely slow recession.

at the glacier's head; giant séracs and pinnacles are outlined against the sky, and at last come crashing over. During the days that we observed it, scarcely fifteen minutes would elapse without an avalanche somewhere along the line. The Lyell tongue and near-by slopes are unexcelled positions for viewing this exhibition of natural force. The glacier possesses the largest moulins that any of us had ever seen: circular shafts at least twenty feet in diameter and unfathomably deep. As we walked along, we often turned to look into the valley: the brilliance of the ice emphasized against the softer tones of forest and meadow, the dull silver of the distant lake; and Mt. Murchison with a narrow line of radiant cloud drifting across darkening cliff.

Mons icefield, lying just to the W. of Mt. Forbes (11,902 ft.),[9] occupies about ten square miles; the Lyell, just to the N., is double in size, the two fields being but loosely connected. The Lyell icefield is split by the continental watershed into two nearly equal parts, Mt. Lyell[10] being situated on its northern margin. In former days, Mt. Lyell was considered as having but three peaks, but the Interprovincial Survey added two more to the massif. Peak 1 (11,370 ft.), the easternmost summit, and Peak 2 (11,495 ft.) lie to the E. on the Alberta side of the divide; while Peaks 3 (11,495 ft.), 4 (11,260 ft.), and 5 (11,150 ft.) are located on the watershed in a line from N. to S. From Peak 3 the divide runs N.W. to Mt. Farbus. Although Peak 2, ascended by Outram, was considered by him to be the loftiest in the massif, the Interprovincial Survey reported an exactly equal height for Peak 3. The latter, being the Continental Divide peak, is the central and, therefore, the chief peak of the group as now constituted. It is certainly the most difficult ascent, as we were shortly to discover.

We left the ice tongue by the high slopes of the northern moraine, following a dry watercourse to avoid the tangle of willow and scrub-pine. Our packs were by no means light, and it proved a hard pull up to timber-line. Once on a shaly ridge above, the going was easier, and we had the amusing companionship of four curious goats that let us come within a hundred yards before they scrambled off. Before sunset we came to a little plateau of meadow, in a basin where an icy tongue just

[9] Named in honour of James D. Forbes, F.R.S. (1809–1868).

[10] Named for Sir Charles Lyell (1795–1875). The names Forbes and Lyell first appear on the Palliser map, and were presumably given by Dr. Hector although they do not occur in his narrative.

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LYELL MASSIF FROM SOUTH.
Peaks 1-4.

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Photos J. M. Thorington.
MT. ALEXANDRA AND PEAKS OF CONTINENTAL DIVIDE
from Lyell 2-3 Col.

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LYELL ICEFIELD.
Peaks 4 and 5 from summit of Peak 3.

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Photos J. M. Thorington. 7 8

PANORAMA NORTHWARD FROM PEAK 3, MT. LYELL.
1 Tsar, 2 Alexandra, 3 Clemenceau, 4 Bryce, 5 King Edward,
6 Columbia, 7 Farbus, 8 Oppy.

pushes over from the icefield's margin. There is a glacial rivulet, with storm-twisted trees growing in the flower-carpet. We set up the tents, lit a huge fire, and studied the Lyell map until the kettle boiled.

At 3.40 next morning we were off: through the heather along the brook, the lantern flickering fitfully, and the pale glow of morning already above eastern ridges. Up the grassy slopes we went, with scarcely a sound save the low murmur of streams and the clicking of hobnails against boulders. Even the Lyell icefall is silent at such an hour.

The horizon brightens, the lantern is out; a white-crested sparrow in the near-by scrub-pine is piping the eerie little triple-noted song so often heard at dawn and dusk in these mountains. Soon we are above the last vegetation, crossing snow patches and broken shale. From beneath our feet a ptarmigan whirs off into space; far below us now we see the meadow with our tents and the faint glow of embers in our camp-fire.

We came to the margin of the glacier tongue, snow-covered, which spills over from the Lyell icefield into the valley's head. Beyond this a slope of snow led us upward to crevassed ice at the margin of the field, where we stopped to rope (5.04). One must tramp over a snowy expanse for more than half an hour and climb up into a higher basin before the tips of the Lyell peaks come into view.

The eastern peak (No. 1) presents an icy wall, merging with easterly cliffs which plunge superbly toward the 'Valley of the Lakes.'[11] A lofty saddle connects it with the summit next adjoining—the gigantic pearly dôme that seems the centre of the massif when seen from N. or S.—an enormous split in the eastern snow ridge breaking its symmetry. The third peak stands alone, a blunt snow tower of primitive lines, guarded by rock precipices rising from the cols on either side. The two peaks remaining, just become visible above the narrowed horizon of the icefield basin, begin to brighten with the transparent light which rests on mountains when dawn colouring is only in the sky—Peak 4, a serrated crest of little snow points and rock splinters; Peak 5, a single, corniched snow spire.

As we climbed to the higher levels of the icefield we passed close by the head of the Valley of the Lakes. Mt. Wilson, across the North Saskatchewan, was a silhouette, framed

[11] Arctomys Valley is the approved name, given by the Interprovincial Survey.

in a ' deep enshadowed trough, jewelled with a host of little lakes,' backed by purple clouds, margined with red and gold. A shattered glacier hurls its fall of séracs into depths unseen, and shafts of light from the east, reflecting back, set all the lakes agleam.

We stopped for a second breakfast. The sun rose above low-lying trailers of mist to warm us, our shadows stretching grotesquely across the snow. In less than an hour we were high on the slopes, rounding crevasses, watching with wary eyes for the little avalanches that pour from the ice slopes of Peak 2, making our way to the high col between Peaks 1 and 2. Then up the arête to complete the first ascent of Peak 2 (10). A splendid corniche adorns the top, and, unroping, I remained a little behind to film the climbers. At such an elevation in the Rockies it is probably the first time that a new climb has been recorded in motion pictures.

There was yet much to be done so, after building a small stone-man, we retraced our steps to the col and ascended Peak 2 (11.20), crossing out on the N. face to avoid the gigantic crevasse which breaks through the ridge. This was the peak which Sir James Outram and Christian Kaufmann climbed in 1902, and we looked down into the deep northern glacial basin through which they had made their way. We could see the little meadow above the valley of Alexandra River where Dr. Ladd, Conrad Kain, and I had turned back from an attempt in bad weather in 1923.

Beyond the river trench, which lay in shadow below the Castleguard alpland, spread the Columbia icefield. Lyell is an inspiring position from which to view it. Castleguard River is a silvery thread in the valley, 6500 ft. below, and behind it the largest icefield of the Rockies, seeming to fill the northern quadrant to the horizon, leaving room for only a few of the loftiest peaks to rear above its farther rim.

What memories in that circle : the bold cliffs of Saskatchewan and Athabaska, the sweeping lines of The Twins and Mt. Columbia ! But the vastness of the field dwarfs its mountains, seen across distance, and it is as if one were looking at sails upon an arctic sea rather than at an alpine panorama. The massing of peaks along the Continental Divide was of especial interest to us. The rising corniches of Farbus and Oppy are followed by the soaring lines of Alexandra's peaks, with distant Tsar and Clemenceau respectively to left and right ; then the icy crest of Bryce, the height of its main peak fully revealed, with the ridges of King Edward behind and swinging across to

Mt. Columbia. Over the centre of the icefield are The Twins, and Alberta, the battlements of the Athabaska gorge.

A thin arête of snow brought us down to the 2–3 col, where we stopped for lunch and to examine Peak 3. Ice and snow slopes, with an overhanging schrund, rise above the northern icefall, extending from a rock buttress, broken by icy couloirs immediately in front of us. Strumia and Feuz made a spectacular attempt to surmount these gullies, but after several hundred feet of cutting the angle became so sharp and the adjoining rock so brittle that they abandoned their efforts. There seemed no possibility of traversing southward from the couloirs.

We then went around to have a look at the N. face, but were forced down by the enormous crevasses, and could see no useful bridge across the upper schrund. It was past noon. Under the blazing sun the snow had softened, and we were sometimes waist deep, with more than a possibility that small slides would come down. We went on as fast as possible, skirting the southern slopes of the deep col between Peak 3 and Mt. Farbus. It had been my hope that from this col a practicable way to gabled Mt. Oppy might be found. Although the snow is broken up and one would have to go down considerably in reaching the col, we could see that there is nothing to prevent climbing Farbus from where we were. Beyond, on the British Columbia side, however, rock ribs and icy couloirs intervene between Farbus and Oppy, and the programme, while not too difficult in any part, is too long by way of the Lyell icefield. The Alexandra glaciers are still the key to these peaks.

We now thought that it would be a simple matter to cross the Lyell 3–4 col, completing our tour of Peak 3, and regain our tracks. Nothing of the kind! Peak 3, for once, presented a rock face, sheer for 1500 ft., opposed by a similar cliff on Peak 4, the two forming the narrow head cirque of a glacier that breaks off with appalling steepness to Lyell Creek. A band of smooth rock, more than twenty feet high, with a schrund below, extended across and formed the ridge of the 3–4 col, and even Feuz for a few minutes thought we should have to go back. Investigation of the terminal buttress of Peak 3 at last revealed a shallow, angular chimney leading up to a ledge whence it was possible to traverse to the level of the col. Little showers of water were coming down; the rock was friable, and there was danger of falling stones. However, there was nothing to do but go on, taking what shelter the projecting ledges would offer. It stands out as the hardest bit of work we had to do that day,

and no time was lost; but an hour passed before we reached the col, less than a hundred yards away.

There we could stop to admire the unusual lines of Peak 4, a knife-edge of snow sweeping high on the cliffs like the prow of a ship; the western precipice descending to the maze of icefall above Lyell Creek, down which we could trace the Bush Valley to the Columbia. Bush Mountain itself, a little to the S.W., is supreme in its area; the peaks stream with large glaciers and are splendidly proportioned, rising to a great height above their surrounding valleys.

Tramping homeward, we turned many times to look at Peak 3 of Mt. Lyell. The architecture of its southern side—which now seemed our only hope—is bold in its very simplicity. Cliff buttresses, rising from the 2–3 and 3–4 cols, support a narrow central mass of snow: a sheer face between pillars, descending to the icefield, split into two equal parts by a narrow, vertical crest of rock midway between the skyline and the open bergschrund that sweeps across from one col to the other.

It was pleasant to come back at last to our camping place (8); the day had been a long one.[12] A porcupine came to the tents during the night, scraped the grease out of the frying-pan with grunts of delight, but departed in sorrow over our failure to leave out anything in the form of leather.

We stayed on the meadow next day, bringing in firewood; fetching water from the near-by brook; wandering over the carpet of heather and paint-brush, past storm-bent pines, to look at the Lyell glacier avalanching into the valley. Jim came up during the afternoon with a load of grub, and stayed for tea, which lasted until evening, and only Mt. Forbes remained in rosy light above the misty valley.

Clouds gathered; the wind came from the S.W. Before midnight a storm had broken upon us: a veritable tempest, with a deluge of rain, and the gale soughing through the trees and whistling along the tent ropes. By some lucky chance I had weighted the edge of the tent with heavy stones, and this was all that kept it from an impromptu flight in the direction of Glacier Lake. But the hurricane wore itself down and, about 3 o'clock, Edward called out that stars were in sight. Strumia and myself appeared, leaving Ostheimer in blissful

[12] Peak 3 in air-line distance from our climbing camp is 6 miles; on our three crossings of the field we covered a total distance of approximately 45 miles.

somnolence—perhaps a wiser condition than we had chosen for ourselves. Here and there in the S. a peak showed up through billowing mist; there was one little patch of clear sky, but it had the look of inconstancy. We sat in the wet grass, eating beans and bacon by the sputtering fire, and then were off.

It was cold enough to make us hurry, and the icefield was quickly reached. The wind died down, and we came to the head of Arctomys Valley as the fireball sun came over the clouds about Mt. Wilson. Fog continued to blanket the icefield above 10,000 ft., rising and falling and shifting, but never clearing. The bases of the Lyell peaks were in sight, but their tops were covered and could not free themselves. We made a line for Peak 3, walking up into the mist. The icefield vanished; crevasses were looming, as they do when one comes upon them unexpectedly, and we could hear the constant slithering rattle of little stones dropping from our peak. We never saw it. The rope was out full length; we tried to force the slopes and came in sight of the bergschrund, but it was useless to go further. Keeping our level, with great care we made a lateral traverse to the 3–4 col; but showers of rain came up from the Bush Valley, and we beat a retreat.

A fast run in the loose snow brought us down below the clouds, but we kept on for several miles at top speed. The rain, drenching us in a final downpour, stopped suddenly, and the sun broke through in wandering patches. Forbes presented a magnificent spectacle across the reaches of the icefield, ' grand and terrible under the rapidly darkening sky,' as it must have appeared to Collie and his companions in 1902, the summit alone in light and striking up to a tremendous height through a girdle of lowering cloud. The peaks along Howse River were less obscured, Mt. Sarbach and the Kaufmann Peaks standing out in dark relief against banks of mist that were unbelievably white. We were almost sorry to go down to camp; our day was by no means a loss, for, though we had attained no peak, we had glimpsed the great heights in the clearing of a storm. There is no wonder of earth that approaches this.

July 8 was brilliantly clear. Edward went down to the base camp for provisions, returning late with news that the ice tongue had melted considerably; that the steps were gone and the bridge fallen. The river could not be crossed, and he had been forced to go up and cut steps across the Mons tongue to gain the Lyell glacier. Strumia and Ostheimer climbed the rocky crest opposite camp, past the Lyell fall to the icefield,

and went on over soft snow to the base of Peak 5. On the watershed itself, in the midst of broken limestone, they found a huge smoky-quartz crystal more than seven inches in length. In another direction, I spent a goodly portion of the day on the slopes behind camp, watching the marmots and gophers playing on the hillside, and taking the motion picture camera to the southern wall of the Valley of the Lakes. Although the East Lyell glacier cannot be seen, the floor of the valley is in view throughout its length, with nearly two miles of dry grassy flats in the upper portion. One can walk along the ridge between the valleys of Arctomys Creek and Glacier Lake with the greatest of ease ; there is a small pond in the very crest, formed by melting snow, where ptarmigan come to bathe ; and the panorama embracing the peaks of Howse River, Mt. Forbes, and the Lyell field from end to end can scarcely be excelled elsewhere in the Rockies.

The problem of Mt. Lyell's third peak still confronted us. ' A first-class thing,' remarked someone at the camp-fire, ' worth more than a try for Forbes.' The heresy went unchallenged, because we all held a similar opinion.

Our third crossing of the icefield was made on July 9 ; a clear, starry night with the Great Dipper pointing out our way. We started at 1.30, guided by the lantern's light, and climbed to the ice without a halt. A little crescent moon hung low in the E. ; the air was cold and still. We roped and made fast progress over the frozen crust. We knew our way this time, the only one we could discover ; we must be there early and take our peak stealthily, or the sun would rise and signal for bombardment. Over the undulations of the field we came at last to the bergschrund. We had planned to go to the 2–3 col, if necessary, in crossing the crevasse ; but now we could see a small bridge farther to the left. We balanced along its lower lip, anchoring while Edward cut the first steps to the higher snow. In the 3–4 col Bush Mountain was framed above the misty gorge of Lyell Creek.

Up the eastern half of the snow gully we climbed, cutting deeply, against our return, step after step in the half-frozen wall. Crossing diagonally to the central rib, Edward cleared off about a half-ton of rock débris, which thundered down to the icefield. Now in a little chimney, often on the crest, we came again to snow where steps must be hacked into underlying ice, and the rearward climbers guard their faces from the swishing fragments. The gradient lessened and we walked in the curving brim of the snow funnel to the summit ridge, and on to the

rocky outcrop at the W., which is the highest point (6.30 A.M.). The pace had been furious: we had come up from camp in but five hours, and the summit had been won in a breathless hour from the schrund. 'The earliest I have ever been on a big peak in the Rockies,' said Feuz.

One recalls few mornings more crystal than this: one of those rare days, seldom repeated, when the very horizon seems transparent and there are no bounds to visibility. In the W. the Selkirks, seen from end to end; from the Battle Range to the tip of the Columbia Loop, sharply defined. We could look down over the western precipice of our peak to the tumultuous icefalls of Lyell Creek, tracing the valley to the Bush, and the Bush to the Columbia. Across the Columbia Valley our gaze penetrated even its lateral tributaries; we could look into Gold River below the majestic pyramid of Sir Sandford, directly W. of us.

A thread of golden-brown smoke hung across the northern valleys; all the higher peaks rising above it, an archipelago in the sky: Tsar, dark and superbly isolated in the N.W.; the groups of Wood River and the Whirlpool; Bryce, Alexandra, and nearer peaks in the massed line of the Continental Divide; the white sweep of the Columbia icefield brilliant as polished silver in the early light.

Rising above and behind Mt. Wilson, seen through Arctomys Valley, are two rock peaks close to each other. The southern, near the Saskatchewan, about opposite the mouth of Siffleur River, is the loftier and must approach 11,000 ft. in elevation, overtopping Mt. Wilson. This is the mountain which Collie named Mt. Cline.[13] There is very little snow on its western face, and its summit lines are symmetrical and sharp.

When on the Columbia icefield in 1923, we had noticed the N. to S. alignment of Alberta, The Twins, and Columbia. Here, on the central peak of Mt. Lyell, we saw that if this line be bent S.E. from Columbia it will cross Lyell, Forbes, and the heart of the Lake Louise group. This is a simple explanation of the difficulty in identifying these northern peaks from Lake Louise summits unless one has become familiar with the

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[13] From the summit of Mt. Noyes, Collie (p. 305) locates Mt. Cline as 'almost due north, and to the right of the most easterly point of Murchison.' The position assigned to it by the Geographic Board of Canada (*Eighteenth Report*, 1924) is lat. 52° 05′, long. 116° 45′; that of Mt. Wilson being lat. 52° 01′, long. 116° 46′. The elevations are not stated.

topography. As one faces S.E. from Lyell, the Freshfield group is seen across the western shoulder of Mt. Forbes.

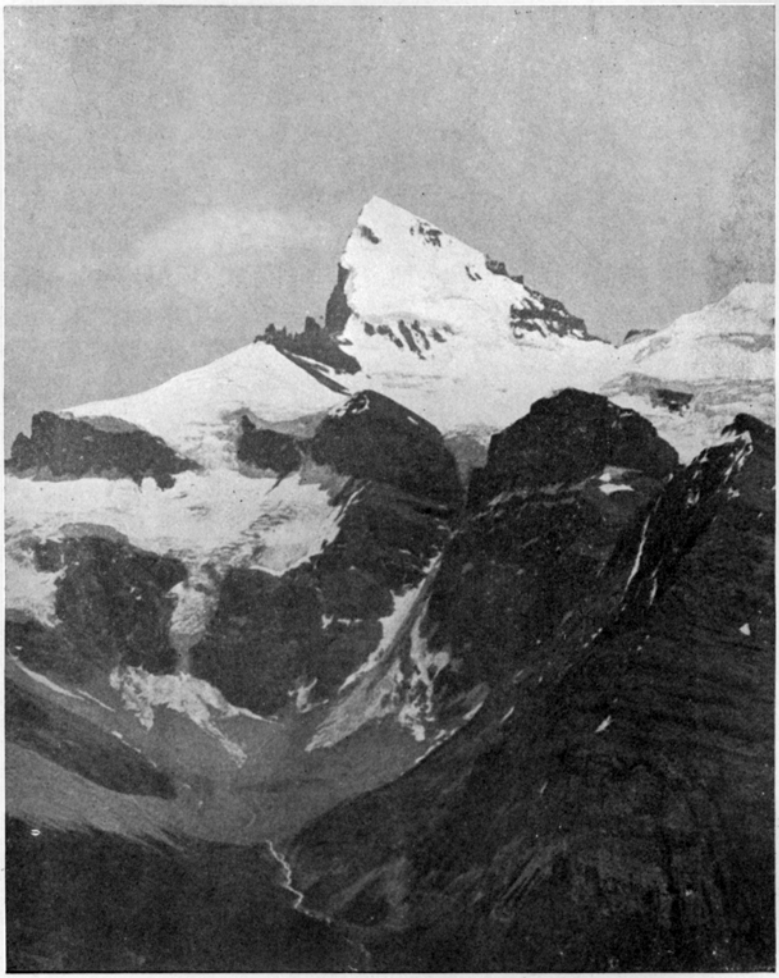
We returned in our tracks to the icefield. Although we had spent less than an hour on the summit, the consistency of the snow had changed. We faced the slope, moving cautiously downward, with the last man belaying the rope over an axe hilt-deep in the wet snow. As it was, more than one step broke and slipped down. It was a relief to step over the bergschrund and glissade out of the line of fire ; an hour later the way would have been risky.

We skirted the margin of the field close below the face of Peak 4, swinging out through the broken ice blocks of an old avalanche at the base of Peak 5. Here, on the snow, we were surprised to see recent tracks of a wolverene. Just why he had chosen this arctic terrain for a promenade, or what became of him, we never knew. Through a maze of séracs and tricky bridges we climbed to the southern shoulder of Peak 5, and up a long arête of steepening snow to the summit (11).

This is the first time that two new ascents in the Rockies exceeding 11,000 ft. have been made in a single day. The summits of Peaks 3 and 5 are more than a mile apart in air-line. We sat on the edge of the corniche, ambitious enough to cast longing eyes at Peak 4 ; but the intervening traverse is long, the snow was in bad condition, and we decided to be lazy. So, when a sufficiency of tobacco smoke had wafted upward, we turned back for a long glissade to the icefield. Following the edge of a shaly ridge, here a part of the Continental Divide, we circled into the homeward track. The snow was watery and our progress infinitely slower than in the early morning. The melting during the past days, aided by nights of rain, had been tremendous : wide stretches of bare ice were exposed and crevasses opened. Frequently Edward was forced to deviate from our beaten path.

Edward, at the camp-fire that night : ' A good deal more interesting than anyone thought, those peaks : the best unclimbed that were left. And, Gott, what a view : I shall remember it all my life long ! Still, I think those Lyells are laughing at us yet.' By which he meant that Peak 4 is still to be done. It is a good peak, but we had put tracks enough on the icefield for one year.

Next morning we took down the tents and packed our heavy loads to the base camp. We left the glacier by the N. lateral moraine, following the river bank and fighting the timber to a point where the water spread over the gravel flats. We got



Phot. J. M. Thorington.

MT. FORBES (11,902')

Fifth elevation of Canadian Rocky Mountains. North face from above Glacier Lake.

across, partly by wading, partly with the horses, which Jim sent out in answer to our shouts, and made our way through in time for lunch. We were in no mood to be charitable with the food supply.

What is there left to say of Mt. Forbes—that wonder-mountain we had placed, with some temerity, at the end of our climbing programme? It is a height to which one may look up, as did Kim to the rim of Himalaya, and say, 'Surely the Gods live here.' Skyward rearing, like a watch-tower of the immortals, it is a perpetual challenge. Collie, although it was just before he and his companions made the conquest in 1902, described Mt. Forbes as 'the finest and most commanding, and probably the most difficult, of the high peaks in the Canadian Rockies.' Perhaps, with increased knowledge of the range, this should be a little modified; but even Feuz, who repeated the route with Dr. Hickson in 1921, pointing it out to us from Mt. Lyell, could exclaim, 'The finest peak in all the North!'

The two ascents preceding had been made from bivouacs to the S., above the valley of Forbes brook, where the mountain rises in terrific black precipices to an ice-crowned point. We, however, had designs on a new route from the N. which would not only include the splendid snow-face we had seen so often from Columbia, Lyell, and other elevations, but would prove the feasibility of the climb from the valley of Glacier Lake.

On July 11, at 4 P.M., we left camp with only the provisions for one day in our rucksacks, and started for the glacier. Crossing the moraine and following the edge of the torrent as it swings past the Lyell tongue, we scrambled through the underbrush to the narrow Mons glacier. We took to the ice a short distance above the snout, walked up and cut across to its western margin, gaining ledges which were followed to a little timbered basin beside the icefall. Huge boulders lying near each other, with intervening hollows filled with moss, suggested a comfortable bed. We halted (7.15) by a bubbling spring, dragged in a gigantic pile of firewood, and soon had the kettle boiling. It was a warm evening, with scarcely a breath of wind, and we soon made ready for bed. Close by the fire Edward and I piled moss and fir boughs into a cranny between two rock slabs, using the rope as a mattress, and lay down under the stars. There have been worse bivouacs. All was quiet save the crackling logs, the intermittent grumbling of the icefall, and Edward asleep.

It was after midnight when we arose to replenish the fire, the starlit sky giving promise of continuing good weather. At

1.25 our lanterns were lighted and we started out, winding our way through the bushes and climbing toward the moraine. Opposite the top of the icefall we were obliged to halt on a ledge for half an hour, until it became light enough to see the way through the upper rock belt ; we sat there jodelling and singing, looking down to the glowing fire at our bivouac far below. We were off again at 3, gaining the top of the rocks and following the crest of the moraine at the margin of the Mons icefield.

Above the icefall the glacier is flat and broad, with crevasses at regular intervals, extending in perfect arcs from side to side and leaving intervening steps of flat ice, one above the other, like benches of an amphitheatre. It took us half an hour to walk across on one of these levels, and then over a hillock of moraine to the N. Forbes glacier. We started up the untrodden ice which swings down in a great curve below the long wall of the unnamed peak just W. of Mt. Forbes. We put on the rope. Forest-fire smoke had drifted in from the W. ; the red sun rose above a group of fantastic pinnacles, throwing its light across the glacier to Mons Peak. We came into a chaos of broken ice, enormous chasms, interlacing, with flat insecure bridges. ' Nifty big ones those are ! ' mused Edward, as one of us went through to the waist and was pulled up sharply.

Turning the corner to compact snow, the final 2000 ft. of Mt. Forbes appeared. Foreshortened, the face in shadow, the long, vertical strokes of avalanche tracks yet contrive to give the peak an appearance of unusual height, although lacking the skyward sweep which characterizes it from a distance. From the western col (7.30), our course turned toward the rocks up a shaly slope to the immediate problem of the lower cliff belt. This seems to have been troublesome to our predecessors, both of the preceding parties having descended in this direction. The key, not easy to see at first, is a narrow, twisted chimney, reached by a lateral traverse on a small ledge. One steps into a little cavern at the bottom, reaches through a slot at the top for a high handhold, swings out over a slight overhang, and gains the upper part where the chimney broadens and the work becomes less strenuous. The rock is not firm, although rather better than on Mt. Lyell. Altogether entertaining.

Above us stretched a long slope of loose angular shale, just at its angle of rest and ready to shift at a touch. We built a small direction cairn to guide us to the top of the chimney upon return, thence proceeding upward to snow and ice. The face of the mountain was seamed with slides which had come down during recent storms, and we swung out toward the western

arête, cutting around the upper corner of a deep couloir which breaks toward the S. glacier. The ridge was near, gained about 1000 ft. below the summit by climbing several rickety towers in the last stages of disintegration. The western crest formed the remainder of our route: now ice, where the steps must be cut with care; now rock ledges, to be skirted above the great northern slope; or snowy gables, perched in the uppermost funnels of the southern couloirs, a last narrow slope rising to the very top (9.45).

Over the corniche we could look down into the valley of Glacier Lake and, across it toward the N.W., to the plain of the Lyell icefield, with Mt. Columbia towering above Peak 3. Distances were entirely lost in the smoke: a disappointment, since here we were on the highest of the 11,000-ft. peaks—the fifth elevation of the chain—hours earlier than anyone before us, and the miles of interesting topography hidden from view! The overhead sky was clear. We sat on the warm rocks for fifty minutes, with Forbes brook almost below curving down from its sources on Bush Pass. The Freshfield peaks were before us in the S., a range of giants, dim in the haze.

One incident of the descent stands out vividly in recollection. We retraced our steps slowly, as the melting ice required care in several stretches. The ridge towers were crossed and we turned down the face, stopping for lunch on the lower lip of the conspicuous gully which cuts through toward the S. Suddenly there was an ear-splitting crash above, and one of the towers up which we had climbed in the morning, and which we had just descended, came banging down over our tracks straight toward us. Of course the couloir caught it, but the noise was terrific, and the air filled with chips and dust and the smell of sulphur. We had knowingly chosen a very safe halting place, but we had not expected a big rock avalanche to come so close. It is rather like the charge of a caged animal: the bars protect you, but for an instant one forgets that bars exist.

When the clatter had subsided we hastened downward, with many a look backward lest other stones might follow. We swarmed down the chimneys of the cliff belt, which Edward christened 'the Englishmen's band,' in memory of the first ascent, and were soon at the W. col (12.35). The bivouac was reached after a leisurely descent (3.30); we were tired, and glad enough to lie down on the grass beside the spring. Edward had just brought the tea to a boil, when the supporting stick gave way and the brew poured into the fire. One would not

willingly have missed the postgraduate course in patois which followed. Two hours later (6) we walked into the base camp.[14]

July 13 was a day of rest in the valley, spent in various interests and amusements. During the morning I walked back to the glacier to photograph the old terminal moraines, taking along a cyanide bottle and collecting beetles[15] on the way.

On the following morning camp was broken, the horses packed, and we departed down-trail. Howse River was forded and we ascended the stream, over the flower-decked bars, to the amphitheatre of Forbes brook, reaching the Freshfield terrace in the early afternoon (8.20–2.30). The weather was cloudy, with intermittent showers. Ostheimer and I devoted ourselves to the glacier, checking on the observations made in 1922.[16]

Strumia and Feuz, with an early start on the morning of July 15, were successful in making the first ascent of Mt. Solitaire (10,800 ft.),[17] the highest and most interesting un-

[14] The total distance from the base camp, traversed on the ascent of Mt. Forbes, approximates 16 miles.

[15] The writer makes no pretence of being an entomologist; but specimens were collected in the interest of the North Saskatchewan headwaters being a practically unstudied terrain. The icefields are rich collecting grounds, as the insects are carried up and deposited in great numbers by air currents. At our various camps and on our climbs, 160 Coleoptera were obtained in good condition. Among the palaearctic species are: *Judolia sexmaculata*, L. (Saskatchewan River); *Acmaeops pratensis*, Laich. (Glacier Lake); *Miscodera arctica*, Payk. (Glacier Lake). The latter is extremely rare, with but few American records. The results have been reported in a paper entitled 'Some Coleoptera of the N. Saskatchewan Headwaters,' *Entomological News*, xxxviii, April, 1927.

[16] The results were reported by Howard Palmer in the following papers: 'The Freshfield Glacier, Canadian Rockies,' *Smithsonian Miscellaneous Collections*, vol. 76, No. 11; and 'Observations on the Freshfield Glacier, Canadian Rockies,' *Journal of Geology*, xxxii. p. 432. The observations of 1926 have been reported in a paper entitled 'The Lyell and Freshfield Glaciers, 1926,' *Smithsonian Miscellaneous Collections*, vol. 78, No. 6, and it will here suffice to state that the glacier is definitely in a cycle of retreat, the frontal recession since 1922 (1463 days) being 330 ft. During the same period, stones on a line 3750 ft. above the tongue advanced 380 ft.

[17] So named by the Interprovincial Survey because of its isolated, solitary position at the head of Conway glacier. The peak lies more than a mile W. of the watershed, and appears to be the chief source of the balls of iron pyrites found in the moraines. When seen from Mt. Forbes, the mountain is characterised by a huge vertical cleft in the profile of its western arête.

climbed peak of the group. With but two on the rope they were able to make fast time, going up the glacier and icefield to reach the col on the S.E., whence the summit was attained over the steep slabby arête (ascent from camp, 4.15–11 ; descent, 11.50–4). Fog obscured the view.

Completing work on the lower glacier, I walked up in the driving rain to photograph the lateral-alcove tongue below the Niverville meadow. It was a melancholy pleasure to come back to the site of our climbing camp of 1922 : the bleached poles that had held the kettle ; the little ring of moss where once had been our fire. Perhaps one should never return to a place that has once seemed so beautiful. And yet, the nodding flowers seemed brighter in the sparkle of rain ; a brown weasel appeared on the edge of a near-by pool, hissed and was gone like a shadow ; a bank of mist lifted on a shaft of light and let me see the icefield to its very head.

Next day, on our way down Howse River, we camped on the E. bank, midway between and opposite the streams from Sir James glacier and Glacier Lake. There is some evidence that this was the camping place of David Thompson, explorer of the North-West Company, in June 1807, just prior to his crossing of Howse Pass.[18] It is the uppermost camping place in the valley, with a fine spring of water and abundance of protecting timber. The cuttings are extremely old, a number of large trees which were felled green having now rotted completely through. Back from the river, on the edge of the spring, are several trunks which are crossed and notched in cabin lengths, the work having then been abandoned. The wood is falling into powdery dust. We noticed several blazes, with surrounding new growth nearly two inches thick, but there were no legible marks. The mountains across the valley correspond in elevation with the measurements made by Thompson ; Mt. Forbes is not visible. The distance to the pass is slightly more than eight miles, which would have made possible Thompson's early morning arrival.

A long day took us to the Wildfowl camp, and on July 18 we came to Bow Lake. Pursuing storms overtook us shortly after the tents were put up, and rainy weather lasted through the next day. Strumia and I became enthusiastic fishermen, bringing up our total catch of trout to fifty. We used minnows

[18] See, *Quarterly of the Oregon Historical Society*, March 1925, p. 23 ff. The document transcribed therein is further discussed in *The Glittering Mountains of Canada*, p. 284 ff.

for bait, wading in the brook and stampeding them into a small net. With a short length of line out from the rod, and using two hooks, we more than once brought in two fish at a time. We lack the nerve to tell about it at home.

On July 20, Edward, Strumia, and I climbed over to Yoho Valley, Ostheimer electing to accompany the pack-train to Lake Louise. It was a grey, cold day, with new snow far down on the mountains. We left at 5 A.M., walking around the edge of the lake and past the canyon at the foot of the ice.[19] Climbing through the timber and scree, we crossed above the terminal icefall and reached the Wapta field near the corner of Portal Peak. There was a sprinkle of snow, and the mists came down as we set our course for the flat pass between Gordon and Rhondda. We plodded along through softened new snow, the weather suddenly taking a change for the better and abetting our decision to ascend Mt. Collie (10,315 ft.). Making our way above the head of Yoho glacier, an interesting route was found leading up a long, irregular chimney in the eastern rock rampart to the southern glacier, whence the eastern snow arête was reached at its lowest point. Fog continued to blow over from the N., and at this point Edward marked a large arrow in the snow, pointing toward the Yoho. The crest of the mountain is very narrow, but it was possible to kick steps nearly all the way to the corniched summit. We did not stay there long, as it was cold and blowing; water was obtained from an icy pool below the topmost rocks, and a record left in the frosty cairn. The mists lifted in the W., uncovering Mt. Mummery and the Freshfield wall; there was a glimpse, through Howse Pass, of the far-away Saskatchewan reflecting sunlight.

We descended rapidly, along the western base of Yoho Peak, over the Habel glacier above Twin Falls, toward the meadows of the Little Yoho. Wading the stream more than once—for bridges are few—we came at last to Takakkaw (7). I had packed over a dozen of the best trout, which were soon frying

[19] The retreat of this tongue since 1922 has been considerable. In photographs taken in 1902 the icefall is seen to cover entirely the cliff over which it precipitates. In 1922–1923 the fall had a notch melted in its western side, baring a belt of cliff. In July 1926 the cliff was bare through two-thirds the width of the fall, leaving the névé connected with the tongue only by a narrow tenuous ice-spout at the eastern angle. If this be further progressive, the glacier tongue will be cut off from the névé, transforming a continuous alpine glacier into a reconstructed type.

in the pan, none the worse for their excursion above the snow-line and across the Divide into another province.

Our journey was at an end. Favoured by fortunate breaks in the weather, we had attained our objectives without loss of time. The Lyell icefield and its peaks had exceeded our expectations. The feasibility of Mt. Forbes from the N. was proven. So when the morning came again, with the peaks standing out against a sky of clearest blue, it is scarcely to be wondered that we looked at them with some complacency, in the happy memory of our northern wandering.

Wanderings in the Kumaun Himalaya, 1925–1926.

By H. RUTTLEDGE.

THE good fortune which ultimately rewards the faithful gave me charge of the Almora district of the Kumaun Division in April 1925. The northern portion of this area lies in the heart of the Himalaya, and is a glittering paradise of ice and snow, dominated by the great peaks East Trisul, East Nanda Devi, Nanda Kot, and Panch Chulha. One-third of the district is to the N. of these giants, and abuts against the great barrier beyond which is Western Tibet.

Orders were received in May to inspect the Indian section of the trade route which runs up the Milam or Johar valley and over the Untadhura pass into Tibet; and a study of the map showed that the shortest way from Almora to Milam would be up the valleys of the Sarju and Pindar rivers, over the Pindari glacier and Traill's pass, between Nanda Devi and Nanda Kot, and down the Lwanl Gadh, explored by Dr. Longstaff in 1905,[1] to Martoli, nine miles S. of Milam. This route would, further, afford an excellent opportunity of cultivating friendly relations with the Danpurias of the Sarju and Pindar valleys and with the Bhotias of Johar, who carry the trade between the United Provinces and Tibet.

By great good fortune, Colonel R. C. Wilson, D.S.O., M.C., of the General Staff, an experienced member of the Swiss Alpine Club, was able to join us from Ranikhet; and he brought Major T. C. Carfrae, M.C., R.F.A., of the Alpine Club. My wife and I completed the party.

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[1] *A.J.* **23,** 208; map facing 207, which should be consulted with reference to this paper.—Editor.