

rock, where no natural cracks are to be found. A hole is first drilled in the rock, using a round chisel (*a*) with a hard-steel point. This chisel is pierced with a hole, so that it may be secured to the wrist of the operator by a stout string.

The hole in the rock should be 5 to 8 cm. in depth, and when finished, the special piton (*b*) is introduced in it, after the wedge (*c*) has been lightly fitted into the cut at the end of the piton. This is then hammered into the hole, where it will be securely retained by the forced expansion of the wedge. This spike, prepared by Grivel, made possible such feats as the ascent of the vertiginous Père Eternel and the S. ridge of the Aiguille Noire de Péteret. The piton measures 15 cm. in length and weighs 110 gms.

MAX M. STRUMIA.



A HIGH-LEVEL GLACIER ROUTE FROM JASPER TO FIELD

One of the features of classical mountaineering in the Alps was the development of the high-level route between Chamonix and Zermatt. As originally laid down by Jacomb,¹ in 1862, this required four days of actual climbing as follows: (1) Lognan to Orsières (Col d'Argentière). Orsières to Burg St. Pierre (the "intermediate link"). (2) Bourg to Chermontane (Col du Sonadon). (3) Chermontane to Arolla (Col de Chermontane). (4) Prarayen to Zermatt (Col de Valpelline). As topographical knowledge increased certain alterations were made and variants became customary.²

Believing that it may prove suggestive to outline a comparable line of travel across Canadian snowfields, I present as a possibility a way across névés of the main watershed from the head of Athabaska River to Field. Much of it is over ground already trodden, but short connecting links must still be worked out and may appeal to climbers who are young and active.

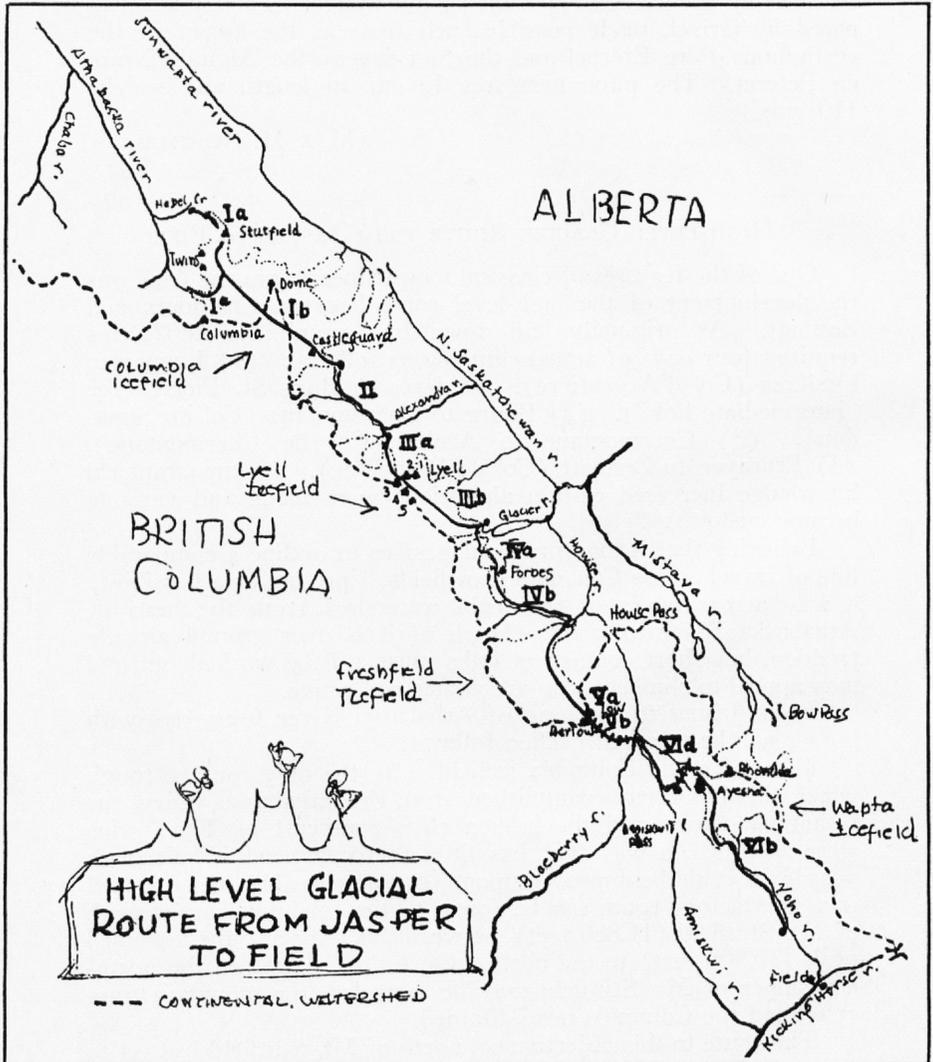
From Jasper to the head of Athabaska River four days with horses will be required. Then follows:

(1) *a*. To the Columbia icefield. By the only route through which this has been accomplished from the Athabaska valley, the Columbia glacier and the broken cliffs southeast of The Twins were ascended, a way that has little to recommend it,³ although possibly it could be improved upon. A more feasible line is opened if a satisfactory route can be found to the col immediately north of Mt. Stutfield (11,880 feet), between this peak and the unnamed peak (10,900 feet) to the north. Once this is attained the northern slopes of Mt. Stutfield may be ascended, the mountain traversed and the Columbia névé attained.

The route to this objective col north of Mt. Stutfield has yet to be worked out. If the valley of Habel Creek is used, the stream,

as well as the retreating glacier north of North Twin, will be found difficult to cross, and it will be necessary to place a bivouac at the head of the valley.⁴ An alternate and possibly better route might be made from the Sunwapta side.⁵

b. The icefield is crossed in a southeasterly direction, between Mt. Columbia and Snow Dome, skirting the northeast side of Mt. Castleguard to reach Castleguard meadows.⁶



(II) From Castleguard meadows down Castleguard River to the Alexandra glaciers, an "intermediate link."⁷

(III) *a.* The southern division of the Alexandra glaciers is ascended to the Lyell icefield, crossing through the 2-3 col (11,000 feet), which is the easiest of any of the depressions between the Lyell peaks.⁸

b. Descend Lyell icefield to the southeast Lyell glacier and reach campground in the valley of Glacier River.⁹

(IV) *a.* Ascend Mons and North Forbes glaciers to Forbes glacier to the col (10,200 feet) immediately west of Mt. Forbes.¹⁰

b. Descend South Forbes glacier to Forbes Brook and follow trail to campground at tongue of Freshfield glacier.¹¹

(V) *a.* Ascend Freshfield glacier and icefield to the Low-Barlow saddle (9,600 feet).¹²

b. Descend to Blaeberry River to reach trail from Amiskwi pass. An untried section, involving descent of Cairnes glacier or its bounding ridges.¹³

(VI) *a.* From the trail to Amiskwi pass cross north of Ensign East (8,294 feet) and traverse slopes to Ayesha glacier and

1. F. W. Jacomb, *et al.*, "The High Level Glacier Route from Chamonix to Zermatt," Peaks, Passes and Glaciers, i, second series, 1862.

2. A. B. W. Kennedy, "The High Level Route," *A.J.*, xxiv, 85.

3. The route of A. J. Ostheimer in 1925 (*C.A.J.*, xvi, 19).

4. Observations by E. Cromwell and J. M. Thorington from the slopes of "Little Alberta" in 1931. Habel Creek was first visited by Jean Habel, in 1901, who attained the Athabaska-Sunwapta divide at that time (*App.*, x, 28). His "Horseshoe" glacier, entering the valley from the slopes of North Twin, has subsided considerably in the intervening thirty years, leaving irregular steep hummocks of terminal ice that are difficult and tedious to cross.

J. W. A. Hickson and H. Palmer camped in the valley in 1924 (*A.J.*, xxxvii, 315; *App.*, xix, 245, 400), as did also the Japanese party led by Y. Maki in 1925 (*A.J.*, xxxvii, 316, 374; *App.*, xix, 246, 408). Neither of these parties attempted any climbing on the south side of Habel Creek.

5. The route of J. N. Collie, H. E. M. Stutfield and H. Woolley on the ascent of Mt. Diadem in 1898 (*C.*, 123); and of W. R. Hainsworth, J. F. Lehmann, M. M. Strumia and N. D. Waffl to the Unnamed Peak, 10,700 feet, in 1930 (*A.A.J.*, i, 308).

6. The Columbia icefield was attained in 1898 by Collie's party, from the head of the Sunwapta, by way of Athabaska glacier, in ascending Snow Dome. It was reached from Castleguard River in 1902 by Outram, when Mt. Columbia was climbed. The field was crossed from Castleguard meadows in 1923 by W. S. Ladd and J. M. Thorington in reaching North Twin (*A.J.*, xxxv, 191; *C.A.J.*, xiv, 40). The latter crossing falls into the route now being outlined.

7. There is a good trail from Castleguard meadows to the head of Castleguard River opposite Thompson pass. Travel is chiefly on the eastern side of the valley, although horses use the gravel islands of the river.

8. Campground is on the south side of the river, several hundred yards below the glacier tongues. Mt. Lyell (Pk. 2) was ascended from this point by Outram in 1902 (*App.*, x, 142), and the basin of the southern Alexandra glacier was again attained by W. S. Ladd and J. M. Thorington in 1923 (*A.J.*, xxxv, 188). The Lyell 2-3 depression was crossed by A. J. Ostheimer, M. M. Strumia and J. M. Thorington in 1926, in making a circuit of Pk. 3 (*A.J.*, xxxix, 58; *C.A.J.*, xvi, 142).

Ayesha-Rhondda col (8,800 feet). This involves a short untried section of no apparent difficulty.¹⁴

b. Descend Wapta icefield in a southeasterly direction, crossing the Collie-Yoho col (9,000 feet) to Twin Falls cabin and Takakkaw camp.¹⁵

While such a route may seem audacious at the present time, the writer has no hesitation, having personally been on or looked over every bit of this ground at various times, in saying that, with proper arrangements, it is a perfectly feasible program, presenting no extraordinary mountaineering difficulties.

Indeed, if the region had been an inhabited one, as in the Alps, there is no doubt but that most of this high-level route would have been known to peasants of the eighteenth century. A chain of huts uniting the composite elements of the route would be of great value, and is to be hoped for in future time.

Nothing has been said as to the possibility of ascending peaks on the way, but numerous attractive summits are at hand and will be known to those who give careful attention to the various

9. The Lyell icefield was reached in 1902, from the valley of Glacier River, by the party of J. N. Collie. The icefield was not completely traversed. In 1926, from a bivouac above the Southeast Lyell glacier, the icefield was crossed by A. J. Ostheimer, M. M. Strumia and J. M. Thorington during various ascents of the Lyell peaks (*A. J.*, xxxix, 52 ff.). Unless horses are available for crossing Glacier River, camp is best made on the north side of this stream.

10. Mons glacier and névé were first traversed in 1902 by Outram during the ascent of Mons Pk., which was made direct from the valley of Glacier River (*App.*, x, 209). From a high bivouac on the western margin of Mons glacier, the North Forbes glacier was first explored in 1926 by A. J. Ostheimer, M. M. Strumia and J. M. Thorington, during an ascent of Mt. Forbes from the valley of Glacier Lake (*A. J.*, xxxix, 65).

11. The west col of Mt. Forbes and the South Forbes glacier were first visited by Collie's party in 1902, during the descent of Mt. Forbes (*A. J.*, xxi, 370). The west side of the glacier should be avoided because of crevasses (*C. A. J.*, xii, 36). There is a good trail from Forbes Brook to the Freshfield tongue, on the west side of the Freshfield stream.

12. The Freshfield glacier was ascended by Dr. Hector in 1859, and the slopes of Mt. Freshfield by Collie's party in 1897. The extreme southeastern head of the Freshfield névé was attained, in 1930, by O. E. Cromwell and J. M. Thorington during ascents of Mts. Barlow and Low (*A. J.*, xliii, 79).

13. The 1930 party on Mt. Barlow could see nothing that would prevent this.

14. The Blaeberry trail has been known since the opening of Howse pass by David Thompson in 1807. The branch to Field across Amiskwi pass was laid down by Collie and Baker in 1897. The Ensign stations of the Boundary Commission were made in 1917, the eastern being revisited by H. Palmer and J. M. Thorington in 1922 (*A. J.*, xxxiv, 390). The Ayesha-Rhondda col was attained in 1930 by O. E. Cromwell and J. M. Thorington during the ascent of Mt. Ayesha (*A. J.*, xliii, 80).

15. Portions of the Wapta snowfield have been crossed since 1897 (for its mountaineer passes and their history see *A. A. J.*, i, 405). Descent from the Ayesha-Rhondda col to Twin Falls and Takakkaw camp was made in 1930 by O. E. Cromwell and J. M. Thorington (*A. J.*, xliii, 80).

papers mentioned in the footnotes. Needless to say, the maps of the Boundary Commission should be thoroughly studied.

A climbing party, working out and carrying through such a program, will deserve great credit and, in addition, will store up unforgettable memories of all that is grandest in the scenery of the Rockies of Canada.

J. MONROE THORINGTON.



AIGUILLE SAVOIE (11,900 FEET)

(Second ascent of the southeast ridge, descent by the southeast face)

The first ascent of this ridge was made by Paul Preuss, solo, August 13, 1913, in four hours, from the Triolet hut.¹

On August 13th, 1931, our party reached the Triolet hut of the C. A. I.² from Savojan in two hours and a half. The hut was left at 3 A.M. next day, and following the moraine and glacier, the party reached the base of the ridge at a height of about 10,660 feet. The climb is up open chimneys and very steep placques of solid rock, sometimes along the ridge (gendarmes), sometimes a little to the right of it. The ascent is very interesting and of moderate difficulty.

The summit was reached at 8.15 (five hours and fifteen minutes from the hut) and the descent was begun at 8.45, amidst an extremely violent snowstorm. The southeast face was traversed diagonally, and in the last portion the couloir descending from the Col de Talèfre was followed. This appears to be subject to stone fall. The bergshroud was wide and high, and had to be jumped. Return to the hut at 1 P.M.

The party was made of two ropes, the first with Evaristo Croux, guide, and Max Strumia; the second with Francesco Ravelli, Abrate and Passerin D'Entrèves.

MAX M. STRUMIA.



MT. CHANCELLOR (10,761 FEET)—CANADIAN ROCKIES

The second ascent of this peak was made by Miss Georgia Engelhard with the Swiss guide, Ernest Feuz, on July 24th, 1931, almost exactly thirty years after the first ascent by Sir James Outram and party. Leaving Wapta Falls Camp near Leancoil at 2 A.M. by car, they arrived at the base of the mountain about four. In three hours of steady going through timber they attained an elevation of about 6,500 feet near the spot where Outram

¹ *Rivista Mensile*, C. A. I., Turin, 1914, p. 336.

² 8,486 feet—in miserable condition, will probably be reconstructed higher up in 1932 or 1933.