

Géant and the Torino hut, where the party numbered eighteen, a number which overtaxed the resources of the establishment. The services of Franz Josef Biner of St. Niklaus, the only professional employed, were of great value, and were highly appreciated by all. The following were among the ascents made :

Mt. Blanc traverse from the Torino, including traverse of the Mt. Maudit from the Col Maudit (H. R. C. C. and three others); Mt. Blanc by the Grands Mulets; Aiguille du Midi; Tour Ronde; Grands Charmoz; Aiguille de l'M; Aiguille Javelle; Col du Chardonnet, Fenêtre de Saleinaz and Col du Tour; La Floriaz; Aig. de la Persévérance, de l'Encrenaz, and Crochue.

A party of a dozen members of the *Appalachian Mountain Club*, with Mr. Herbert Carr, did, later in July, the High Level Route from Chamonix to Zermatt.

THE FIRST ASCENT OF MT. KING EDWARD, CANADIAN
ROCKIES, WITH A NOTE ON MT. ALBERTA.

BY HOWARD PALMER.

ALTHOUGH our climb of Mt. King Edward cannot be rated very highly as a mountaineering feat, I contemplate it, nevertheless, with a good deal of satisfaction. In the first place, Dr. J. W. A. Hickson and I had managed, after several fruitless attempts in as many years, to bring our programs into conjunction for a three weeks' campaign, and this was the initial peak to fall to our lot. Then, I had attacked it four years before in company with Mr. Allen Carpe, only to be repulsed a few hundred feet below the summit by a combination of circumstances beyond our control. And finally, because perfect weather, and wonderful prospects, united to stamp the day as a memorable one—well worthy to be entered in that gallery of famous days which every mountaineer cherishes in his inmost soul.

The peak adjoins Mt. Columbia, being situated a little over three miles distant from it to the W., and rising to an elevation of 11,400 ft. It is also on the Continental Divide. (For maps, see *A.J.*' xxxvi. 94; and sheet No. 23 of the Inter-provincial Boundary Survey.¹) The two peaks constitute the

¹ Issued with *A.J.* xxxv. For a general view of these mountains see plate opposite page 184 of that volume. Mt. Stutfield is wrongly marked on the panorama. The name should be transferred to the next peak to the right.

southerly wall of the immense amphitheatre in which the Athabaska takes its source. To the N. and E. stand Alberta, Stutfield, and The Twins, all over 11,000 ft., while directly E. is the heart of the Columbia névé, which, with its sixteen effluent ice-tongues, occupies an area of more than eighty square miles. Towards the W. the mountains are lower and they exhibit fewer well-defined peaks, although supporting extensive snowfields. The actual source of the Athabaska is the five-mile Columbia glacier which drains the easterly and northerly slopes of that mountain. From here the river flows in a north-westerly direction to Jasper on the Canadian National Railways—a distance of about sixty miles in a direct line.

We arrived at the base of Mt. King Edward on the morning of August 10, 1924, after four days of constant travelling. The pack-train of fourteen horses, with two men and a cook, was supplied us by Otto Brothers of Jasper. Conrad Kain came with us as guide. Over the first half of the journey the trail is excellent, but beyond the Sun Wapta bridge it is often rough, boggy, and obstructed by wind-falls. The last ten miles lie over open gravel flats, where the river splits into several channels and frequent fords must be made. The scenery is attractive and interesting all the way, although comparatively little snow and ice is in view. Horse-feed is scarce and scanty in the upper valley, so that the few visitors who have ever penetrated thither soon departed. Our party of 1920 was the first to come with any serious intentions regarding mountaineering, although in the preceding year the Boundary Survey, under the guidance of Conrad Kain, had occupied a couple of stations on the W. side of the valley, and Jean Habel of Berlin in 1901 had scrambled to 6700 ft. on the flanks of a nameless peak adjoining King Edward on the W. As far as is known, he was the pioneer hereabouts, and his remarkable expedition (described in 'Appalachia,' vol. x. pp. 28-43) is of great historical interest in connexion with this whole region.²

The peak of King Edward is really tent-shaped, but this impression is not communicated to the approaching traveller, who sees the long ridge end-on as a sharp point, to which a

² The only other parties known to have visited the upper Athabaska valley are the following: Mrs. M. Shaffer (1907), B. Mitchell and H. Bryant (1916), the Boundary Survey (1919), A. Carpe and H. Palmer (1920), J. W. A. Hickson and H. Palmer (1924), B. Harmon and L. Freeman (1924), Y. Maki and friends (1925).

confusion of jagged arêtes, subsidiary summits, and pocket glaciers lead up. The *massif* fills almost four miles of the sky-line, rising to a height of 6400 ft. above the valley. It dwarfs Columbia itself in bulk, but the graceful symmetry of the latter keeps beguiling the eye, so that the true grandeur of the former is not immediately appreciated.

All of this was absorbed with keen delight while we wended our way across the gravel flats, brilliant with the warm sunshine of an ideal summer day. Columbia gradually disappeared behind the lower hills as we penetrated the western branch valley beneath King Edward, but to the rear such a splendid spectacle of Alberta developed that its eclipse was scarcely noticed. Strangely enough, this is the only part of the march where Alberta can be seen at all adequately from the valley. We continued two miles and a half beyond our camp ground of 1920 to a tiny, timbered flat beside the lateral torrent from King Edward glacier, discovered at that time. Here we established a comfortable camp—elevation 5000 ft. All the horses returned to the last feed, six miles down the valley, in charge of two men, leaving the three climbers and cook to their own devices. The men were to come back for us on the third day.

We arose at 3.30 A.M. on August 11, weather indications being favourable except for a warm temperature and a somewhat smoky atmosphere. At 5.1 we were off, striking straight up the stony gully along the torrent. In an hour we came out into the open space below the terminal moraine, having risen 800 ft. The smoke had now become so dense that the cameras were deposited under a stone as a useless burden. After halting briefly, the march was continued directly up the moraine-covered glacier tongue, steep at first, but gradually flattening out into a terrace clear of snow, beyond which the main ice-fall of the glacier rises. This occupies the full width of the valley, but towards King Edward it is submerged beneath a sizeable tongue of snow that affords a steep, but perfectly satisfactory, means of passing it. We cut steps up to the bergschrund and along its lower lip to the right, exactly as Carpe and I had done in 1920, the conditions being identical with those we had encountered at that time. A few marginal crevasses were negotiated, and then we found ourselves on the névé of the upper basin, where we paused for a second breakfast at 8.30, having made 3200 ft. in altitude.

At this point a brief digression may be permitted to dispose of the attempt of 1920. Carpe and I struck directly up the



Photo: Howard Palmer.

MT. KING EDWARD
from the flats of the Athabaska.



Photo: Howard Palmer.

BASE CAMP BELOW MT. KING EDWARD,
looking E. towards The Twins.

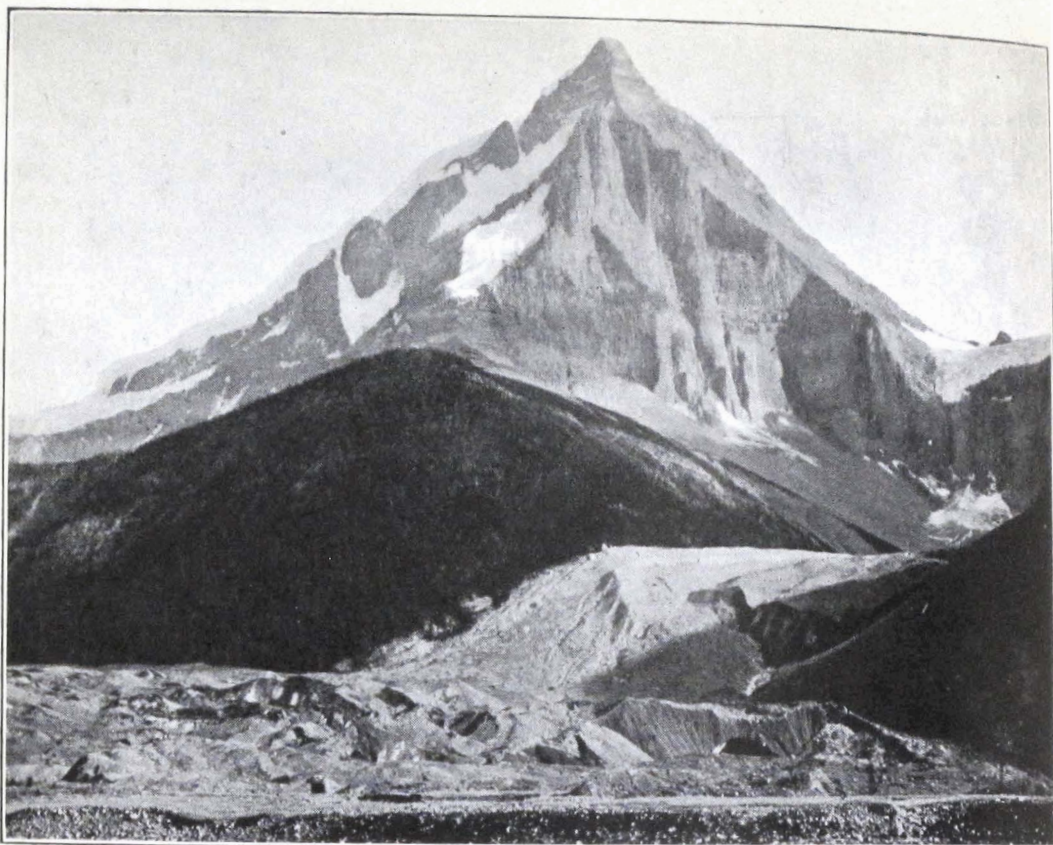


Photo: Howard Palmer.

MT. COLUMBIA (12,300 ft.), N. FACE,
from the tongue of the Columbia glacier.



Photo: Howard Palmer.

MT. ALBERTA (11,875 ft.),
from the S.W.

broken face along the line of a massive rib, or buttress. The general lay of the strata was against us, like a flight of stairs leaning sideways, but the angle, nevertheless, just permitted one to walk flat-footed up the smooth rock. After four hours of it we gained the place where the buttress merged into the upper face of the peak. The repellent summit cap reared itself directly overhead and bade fair to involve difficult work. A traverse to the S. ridge looked perfectly feasible, scarcely more than a walk, in fact, but the melting of a hot afternoon was sending down showers of stones across that part of the face. It was already 4 o'clock, the days are short in late August, the greatest obstacles lurked in that 800 ft. cliff above us—clearly the only prudent thing was to go down, and in the end this was reluctantly done. The sequel showed that we turned not a moment too soon, for we emerged from the forest on the open flats as the last light departed, found our bridge washed away, and had to make a somewhat dangerous ford through the waist-high raging flood of the main river. Camp was regained at 9 P.M., after an absence of nearly fifteen hours and a climb of some 6000 ft. The distance covered was about ten miles. Such are the difficulties of pioneering in unmapped country. When one does not know what is ahead, adequate plans cannot be formulated in advance. Our camp was too far away from our goal, and on the wrong side of the river, but only an actual trial could demonstrate the fact.

In 1924 we profited by this experience and, as a result, were already some four hours ahead of the 1920 schedule. It was our present plan to pass around the base of the peak on the snow to the S.-W. ridge and southerly face, where doubtless a satisfactory route could be devised. An hour and a half later we had accomplished this successfully and had gained the rocks at an elevation of about 9000 ft. We found that the whole face of the mountain was composed of slabs steeply tilted towards the S., and covered thinly with small rolling stones, or scree. At several places they were difficult, the holds being all against one. Ascending the scree proved to be laborious in the extreme, as it was loose and rested at just the angle of repose. Three hours and a half of monotonous work it took to bring us to the base of the summit cap—a bulging cliff of black rock, in appearance not at all propitious to the would-be climber. Here, fortunately, we came upon water—a great boon in our thirsty state—so a halt and refreshment were at once decreed.

Upon resuming the advance we decided to traverse around

the S.-E. arête in order to see what the E. face looked like. In doing this we passed directly through a narrow fissure in the arête, and beyond Conrad discovered a broken vertical chimney, perhaps 100 ft. high. This pierced the cliff-belt and gave access to a slope of closely packed scree which led us to the S. peak at 4.15. Several pitches of the chimney afforded stiff climbing. A second peak terminates the narrow ridge at the N., but this is only 11,320 ft. according to the Boundary Survey.

The smoky pall of the early morning had now vanished, and a splendid panorama lay outspread before us. My camera—the inseparable companion of nearly every major climb—was now keenly missed, the more so because no one else had brought one. Mts. Columbia and Bryce were easily the most impressive features of the view. The southerly arête of the former resembled a palisade. It is slate-coloured rock of vertical structure, and descends right to the bottom of the Bush valley, cutting off the intervening glacier very definitely from the Columbia névé, although indeed a little ice from this does overflow the wall. No doubt Mt. Columbia could be ascended directly from the saddle on this side, but it would involve careful work towards the top. Further, there appears to be no good way of gaining the saddle from the valley. On the N. side it is guarded by bands of ice cliffs, and while an approach through the glacial pass W. of King Edward and a traverse around the latter on the snowfield to the S. are doubtless feasible, the route would be a long one (seven miles each way).

Mt. Bryce (11,500 ft.) presented a magnificent spectacle, despite its distance of nearly twelve miles. It is really a minor range by itself, jutting out laterally from the Columbia névé. On this, at the western extremity, the main peak is superimposed, a snowy cone to which all lines converge in the grandest manner possible. This peak and Mt. Alberta (11,875 ft.) are, all things considered, probably to be classified as the premier climbs of the range. Turning to the N., Alberta stood up straight and forbidding—fully revealed—a grim-visaged 'peak of terror.' The ancients would have found it an admirable model for the Tower of Babel—a terraced pyramid capped with a thin vertical comb 1800 ft. high. Quite the reverse in aspect was the confused, flattish *massif* of The Twins. It lacked individuality, and appeared rather in the guise of a giant buttress for the Columbia névé, whose snowy domes bounded the horizon on that side. Clemenceau loomed in the distance to the W.—an imposing if somewhat shapeless shadow. The extensive ice-fields in this direction are curiously concealed

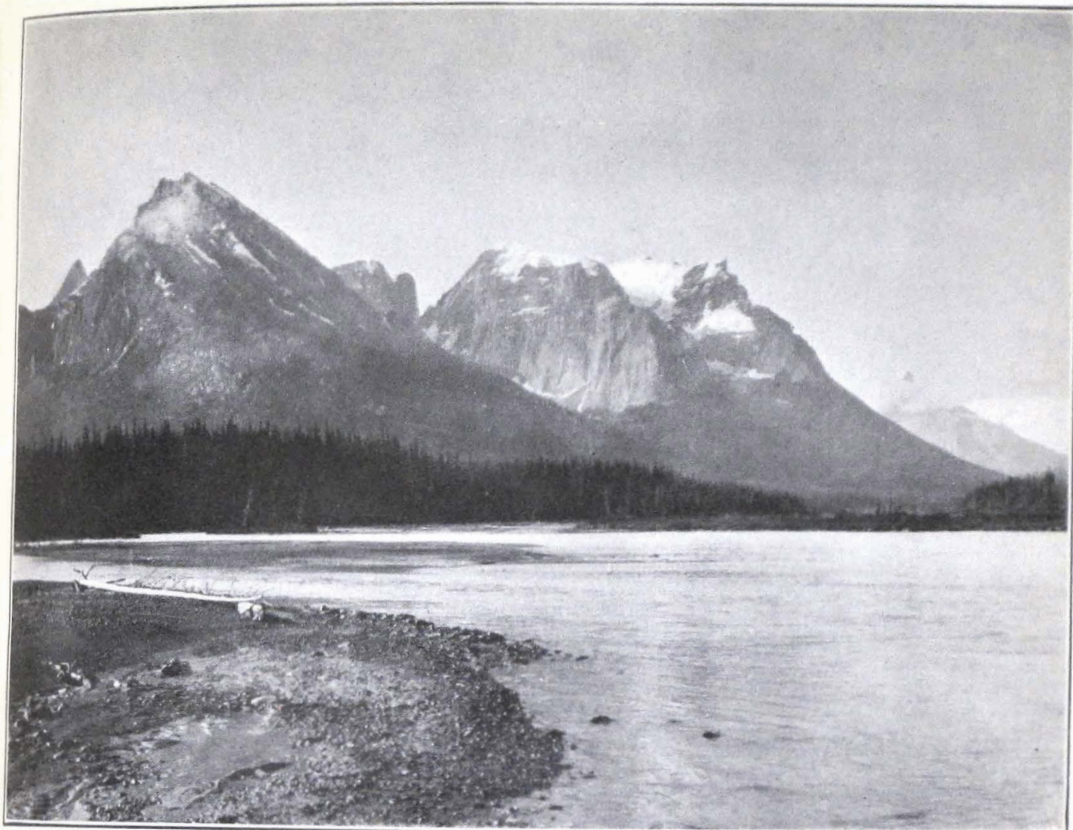


Photo: Howard Palmer.

MT. QUINCY
from confluence of the Athabaska and Chaba Rivers.



Photo: W. O. Field.

N.E. FACE OF KING EDWARD
from summit of North Twin.

by a maze of ridges, so that the unknowing spectator would never suspect their existence. Other distant landmarks noted were Sir Sandford and the Adamant group in the Selkirks, and Forbes and Whiterose in the main range. To the N.-W. Hooker, Serenity, and Fryatt stood out distinctly.

Having built a small cairn and deposited a record, we commenced the descent at 5 o'clock. Half an hour was consumed in descending the chimney, after which we unroped and took a different line down the south-easterly ridge. The beds of scree here were deeper and permitted of famous speed, so that we arrived at a brow of cliff overlooking the glacier in two hours and twenty minutes from the top. Here we roped for a traverse of some awkward slabs that gave access to a snow slope where Conrad cut a line of steps. Thus we gained the névé.

The rest of the way was easy, allowing full opportunity for enjoyment of a gorgeous sunset with splendid cloud effects tinted in delicate pastel shades by a smoky atmosphere. Darkness overtook us in the chaos of the terminal moraine, but Conrad's uncanny skill soon disclosed the lantern left there in the morning, and with its aid we groped our way down the boulder-strewn gorge through the forest. At 11.40 P.M. we reached camp, where the cook was aroused from deep slumber and a hot meal soon prepared. We had been on the go for some eighteen hours.

A word may be acceptable at this point concerning the general scope of our plans. Our chief objective in coming to the headwaters of the Athabaska was to reconnoitre and attempt Mt. Alberta, about which, as a mountaineering problem, almost nothing was known. My earlier visit here had indicated that the best line of attack would be from the upper valley of Habel creek,³ a lateral affluent of the Athabaska, which promised to give access to the E. face of the peak as well as to supply a suitably lofty camping place, without which, of course, nothing could be done. The W. face as seen from the Athabaska valley does not offer any inducement for an attempt. As there was no trail up Habel creek one had to be made, and it was primarily

³ Habel Creek joins the Athabaska Valley from the E. and can be seen in the upper panorama *A.J.* xxxv, opp. 184 in the extreme left below Mt. Alberta.

to give an opportunity for this that we had moved on past the mountain to spend a few days in the upper valley.

King Edward was undertaken partly as a training climb and partly as a reconnaissance of the approaches to Mt. Columbia from this direction. It would be a matter of considerable mountaineering interest if a good route to Columbia could be opened up directly from the Athabaska valley. We had satisfied ourselves that the way around the back of King Edward was too long to try until it had been demonstrated that no better one could be discovered. The next thing in order, therefore, was to move to the E. valley and examine the possibilities there.

Accordingly, after a day of luxurious idleness, the horses having put in an appearance, we transferred the camp to a point half a mile below the tongue of the Columbia glacier on the N. side of the valley.⁴ The practical difficulty of effecting even such a minor movement as this is typical of the obstacles which seem to beset the traveller hereabouts to an unusual degree. By previous arrangement the animals came nearly six miles to get us; they shifted the party four and a half miles, and then, no feed being found there, they were compelled to return another five miles to their starting-point. Riding-horses as well as pack-horses were needed, for so numerous and so swift are the streams which course along the gravel flats that a man on foot is almost helpless. They weave back and forth from one side of the valley to the other, and at the end of the day usually overflow their banks. For the same reason, camp must be established with especial regard to each climb contemplated—all of which constitute rather heavy impediments to mountaineering.

On August 14, a magnificent day, we made an excursion four miles up the Columbia glacier, which Carpe and the writer were doubtless the first to traverse in 1920. The start was an early one, with a lantern, for we wished to be in a position to take advantage of any opening that might develop for a climb of one of the higher peaks. We arrived at the foot of the ice-fall at seven, after an easy march of three and a quarter hours. It was exceedingly steep and overhung with all kinds of crazy towers ready to fall. Even with the certain knowledge that one could reach the Columbia névé through the maze of crevasses behind the crest, its ascent would have been foolhardy

⁴ See Sheet 23 of Interprov. Boundary Survey issued with *A.J.* xxxv.



Photo: Howard Palmer.

THE NORTH CLIFFS OF THE NORTH TWIN,
above Habel Creek.



Photo: Howard Palmer.

NORTH TWIN (left)
across Habel Creek Valley, and
SOUTH TWIN (right)
from the N.W.

to attempt. Lacking this, the question did not even permit of debate. All the N. side of Mt. Columbia we found to be guarded by impregnable cliffs, raked by ice-falls from bands of active hanging glaciers. At most points there were two bands with an ice terrace between. The mountain appears entirely inaccessible from this direction.⁵ We traversed along the base of the cascade through a sort of valley in the ice and then retreated to a safe place on the medial moraine for breakfast.

We studied the N. side of the valley towards The Twins,⁶ but in this quarter as well the cliffs are capped with continuous ice walls, which discharge with more or less frequency into the valley. Thus, throughout their entire sweep of ten miles from Columbia to The Twins, the rock walls, with their icy coping, are of the most formidable character. At one point only did we note an opening that appeared worth trying. It was in connexion with The Twins, but when we discovered it, the day was too far spent to put it to the test, for even this would involve an expedition of eight miles each way from camp.

Next morning, when we turned out early to attempt it, the weather had broken, so it seemed the part of wisdom to take advantage of the unsettled conditions to retreat to Alberta and establish ourselves in Habel creek, which our head packer, MacDougal, now reported was open. Accordingly, we sent for the horses, and during the afternoon retired to the permanent camp at the mouth of the creek. On the 16th we advanced up the new trail, preceded by four led pack-horses. The way was very rough, and in crossing one of the precipitous cut-banks, a pack-horse lost his footing and rolled down into the torrent, fortunately without injury to himself or damage to his burden.

After two hours and a half, a high wall of terminal moraine blocked all further progress for horses, so we set up the tents on an open flat at its base. We had risen about 850 ft. above the main valley, our altitude being 5550 ft. Habel creek flows through a narrow gorge which cuts back between The North Twin and Alberta. The latter we could not see owing to a cliffy step in the slope on that side, down which a sizeable waterfall dashed, but The North Twin and Mt. Stutfield were imposingly revealed, buttressed with smooth cliffs and rocky towers. After our camp was settled, the packer-guides went back to the lower camp with the horses, the understanding

⁵ For a view of this face of Mt. Columbia, see *A.J.* xxxv, opp. 194.

⁶ See Panorama *A.J.* xxxv, opp. 184.

being that they were to come up for us on the morning of the sixth day.

We were greatly pleased at our success in attaining such a favourable camp ground. It was ideally situated with respect to Alberta, and it commanded capital views of the glaciers and precipices to the S. Unfortunately, our satisfaction was but short-lived, for the weather simply would not mend its ways. Rain fell steadily all the afternoon of our arrival and all that night, with much new snow on the peaks. Intermittent showers held us prisoners in camp on the next two days. On the third, some improvement manifested itself about 10 o'clock, so we ascended the cliffs by the waterfall in the hope of catching a glimpse of the peak of Alberta, but though we spent the entire afternoon in a delightful meadow (6800 ft.) near its brink, in full view of our goal, not a single break occurred in the dense curtain of mist which completely buried the last 1500 ft. of the mountain. We saw, however, that this route was the way to attack Alberta, that the meadow would afford a splendid place for a bivouac, and that it would be easy to reach a flattish glacier which filled all the area between Alberta and Mt. Woolley in the background.⁷

The fourth day was ushered in with lowering skies, but in sheer desperation we again ascended to the meadow with the intention of crossing the glacier to Mt. Woolley (11,170 ft.) if conditions permitted. After a cold storm had delayed us here an hour, we forced a way up some steep cliffs (good rock climbing) just W. of the small canyon that drains the glacier, attained the ice, and advanced some distance towards Mt. Woolley, which did not look at all difficult. However, the clouds began to close in again and the hour was after 2 o'clock. We could not complete the ascent and get back to camp that night; this in turn would spoil our chances for Alberta should the weather clear, so there was nothing for it but to seek some more modest goal.

This we found in the nameless mountain which bounds the glacier tongue on the E. Rising in a relatively thin wall, the side towards the ice presents several belts of steep cliffs seamed with couloirs, amongst which Conrad assured us some expert rock-climbing practice could be had, so we directed our steps thither. His prediction was fulfilled. Ascending straight up from the glacier, we encountered a pair of chimneys which gave

⁷ See illustrations in 'New Expeditions' in this number and panorama *A.J.* xxxv, opp. 184.

us a real tussle. In one, two chock stones with overhanging noses blocked the way. The higher, a slab 25 by 8 ft., with slimy holds beneath, evoked some active gymnastics before it yielded. Above, we finally emerged on scree and broken blocks, which took us to the summit crest midway between the two peaks, at 5.30, in a driving snowstorm. Clouds were thick everywhere, and we saw Alberta not at all. We traversed the whole ridge, finally descending to the waterfall by the southerly slopes. The S. peak is the higher by a few feet, the elevation being 9700. A small cairn was erected on each peak. We had, at various times, good views to the N., E., and S., as well as straight down the exceedingly steep easterly face.⁸ Darkness overtook us near the waterfall, and having omitted to bring a lantern, camp was not regained until 9.30.

The basin at the head of Habel creek is of exceptional interest. It is one of the few places in this land of spacious distances where a goodly number of worthwhile peaks are accessible from a single central camp. Half a dozen at least stand close at hand, and they are of all grades of difficulty; only, of course, one must have settled weather or nothing can be done.

This was the only climb which we could make, as the following day did not bring any improvement. On the 22nd, according to schedule, the horses came for us. Deep, new snow covered all the high peaks. It would take more time than we had provisions for to await the return of climbing weather. Accordingly, we commenced the return march to Jasper, abysmally dejected, since our stay had not vouchsafed so much as a glimpse of the top of Alberta, and we were even deprived of the privilege of making the first attempt upon it, although we had opened up the proper way.

On two occasions during the return journey we arose early, in the hope of improving our fortunes by the capture of a lesser peak, but even this consolation was denied us, rain-storms and high winds buffeting us all the way. In fact, after arriving at Jasper on August 25, the weather remained unsettled through the balance of the month, and our season closed in the deepest gloom. Excepting Jupiter Pluvius, everything had been splendid—horses, men, supplies, and companions; but when storms hold sway on the heights, then life even in the mountains becomes stale, flat, and unprofitable, and one wishes one's self elsewhere.

⁸ The Japanese party referred to in the note following dubbed this peak 'Little Alberta.'

THE FIRST ASCENT OF MT. ALBERTA.

Note.—Since the above paper was written, news has been received of the successful ascent of Mt. Alberta on July 21, 1925. Six Japanese, under the leadership of Mr. Yuko Maki, with the Swiss guides, Heinrich Fuhrer, and Hans Kohler of Meiringen, and a Swiss amateur named Weber, composed the climbing party. Mr. Maki is one of the officials of the Japanese Alpine Club, and his companions are prominent in the Ski Club of Japan, where they have had much experience with spring snow conditions among the Japanese alps. Mr. Maki is known among mountaineers for his splendid ascent of the Eiger by the Mittellegi arête in 1921. (See 'A.J.' xxxiv. 166-7.) They came from Japan with the express purpose of attempting Mt. Alberta, and were completely equipped with pitons, silk rope, rock-climbing paraphernalia, moving-picture cameras, etc. Obtaining full information about the mountain in Jasper, they engaged five packer-guides and forty horses to take the expedition in. They were in the field for twenty-five days, accomplishing also the first ascent of Mt. Woolley.

Their route of approach was exactly that described in the foregoing paper, the base camp being established in Habel creek, and their high camp in the meadow above mentioned. Leaving the bivouac at 3.30 A.M., they attained the summit by way of the south-easterly slopes and the central E. face at 7.30 P.M. The entire party of nine spent the night on the summit ridge at about 11,000 ft. Fortunately the night was warm and fine. The descent was resumed at 5.30 A.M. and consumed the whole day, the bivouac being regained at 9.30 P.M. and the base camp on the morning of the fourth day.

The party reports that the peak was excessively steep, with much loose rock and falling stones, several of the men sustaining minor hits. Four pitons were employed in roping off on the way down. An ice-axe was planted in a cairn on the summit.

They are to be congratulated upon their good fortune in snatching a victory when this austere peak was off guard. And this can be said without the least reflection upon the admirable work performed, for one has but to visualise the critical situation that would have arisen had rain or snow fallen during the night of their vigil on the summit ridge. Their reliance upon the extraordinarily dry, warm weather of last July was not misplaced.

This noteworthy ascent is of especial interest in that it marks the closing of the era of major virgin peaks in the main range of the Canadian Rockies. Of those rising above 11,000 ft., only a bare handful now remain to tempt the climber away from the more or less beaten paths.

H. P.

SIDE-VALLEYS AND PEAKS OF THE YELLOWHEAD TRAIL.*

BY J. MONROE THORINGTON, M.D.

(Continued from p. 59.)

(b) TONQUIN VALLEY AND THE RAMPARTS.

VISITORS to Jasper Park, in the Rockies of Canada, are invariably advised to visit Tonquin Valley. Much has been written of its spectacular scenery¹—its unique combination of lake, precipice, and ice—which presents itself with a singular beauty almost unequalled in alpine regions of North America. From high peaks of the Whirlpool we had glimpsed its towers and glaciers in the north, and had looked into misty, forested valleys at Fraser head-waters. We knew that Simon Peak, the highest elevation of Mt. Fraser and the loftiest summit of the Divide between Fortress Lake and Yellowhead Pass, had yet to be climbed. And so we went.

The Indians believed that Jasper Park was the lurking-place of prehistoric monsters. David Thompson, journeying through in 1811, knew of this superstition, as he mentions²: 'Continuing our journey in the afternoon we came on the track of a large animal, the snow about six inches deep on the ice; I measured it; four large toes each of four inches in length, to each a short

* The maps opposite pages 320 and 342 of vol. xxxvi. may suffice for this article, but the full sheets 26, 27, and 28 of the Inter-provincial Survey may be obtained on application to the Surveyor-General, Ottawa.

¹ See especially *C.A.J.* x. p. 70. The scenic features are well illustrated in *A.J.* xxxvi. 342, 'First Ascents of Mt. Barbican, 10,100 ft., and of Mt. Geikie, 10,854 ft.,' Val A. Fynn. See also *Description of and Guide to Jasper Park* (edited by E. Deville, Department of the Interior, Ottawa, 1917).

² *Thompson's Narrative of his Explorations in Western America, 1784-1812* (The Champlain Society, Toronto, 1916), p. 445.