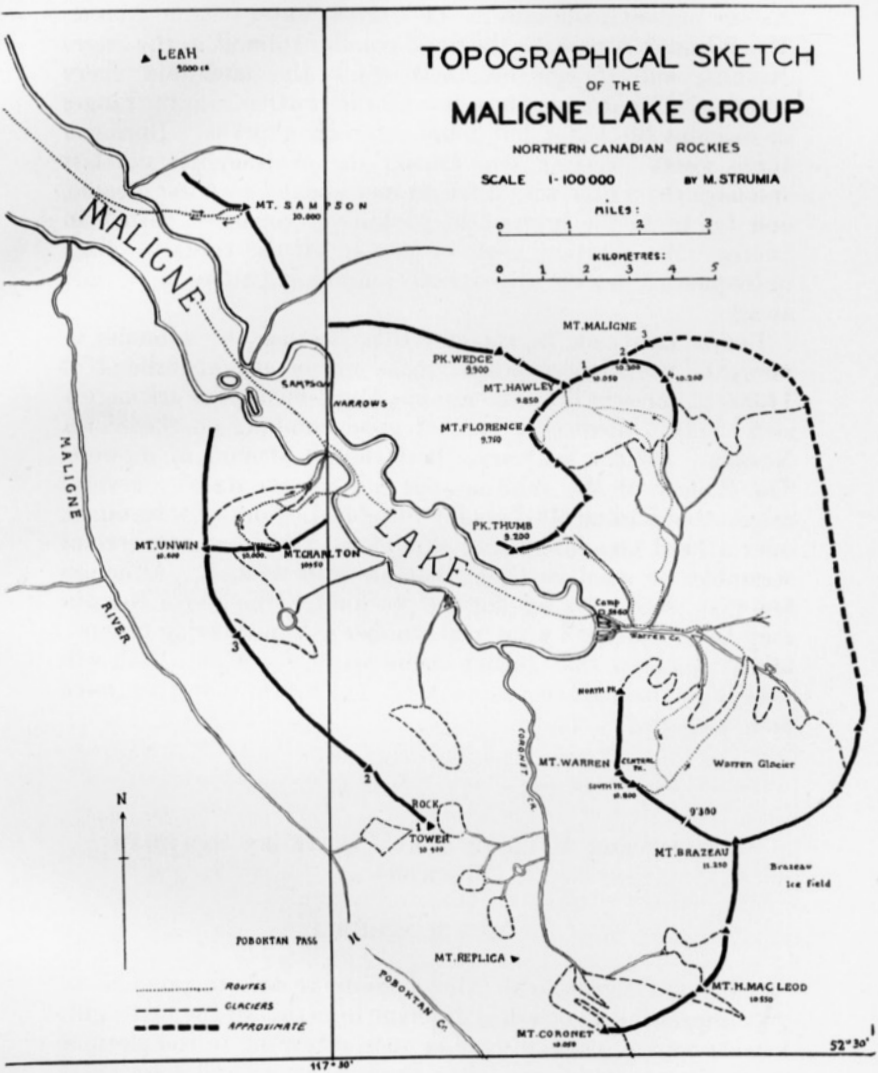
construction of a pony track from Lone Pine in the Owens Valley to the summit of Mt. Whitney will be completed during 1929. As the highest mountain in the United States outside Alaska, Mt. Whitney is perhaps the most popular summit in the Sierra Nevada, and though hundreds climb the mountain every summer, it is surprising how few venture further into the ranges or attempt the lesser but more interesting peaks. During a three weeks' packing trip among the Whitney Ranges last summer, the writer with a friend met about two dozen people, and for these the interest in packing-in consisted rather in 'doing' Mt. Whitney than in getting off the trails to climb unfrequented peaks. No strictly climbing parties were met at all.

But it must not be thought that because the summits of many of the highest peaks (those in the neighbourhood of 14,000 ft.) present little mountaineering difficulty, or are merely stiff 'hikes,' there is a lack of good climbing on the Sierra Nevada. On the contrary, these ranges abound in interest. The E. face of Mt. Whitney has never been scaled; several ridges, that joining Mt. Langley with Mt. Le Conte, for instance, offer a hard and interesting climb, and there are numbers of scrambles as good as these that are still untried. Although few first ascents are left for the pot-hunter, the Sierra Nevada may be considered by the real climber as a pioneering ground, and it is hoped that British members of the Alpine Club will take a greater part in the work of exploration than they have done hitherto.

Climbs from Maligne Lake (Northern Canadian Rockies).

By MAX M. STRUMIA.

A SECOND visit to an Alpine group is sure to produce an impression a good deal different from that of the first sight. I never was so aware of this as upon returning to the glorious Scott Glacier, two days after leaving Jasper and four years from our previous visit. The intervening time of common life shrank away to vaporous memories in which even the personality was lost, leaving for the first hour a sense of excitement and confusion in which the early scepticism was fighting a losing battle. A little later, when camp was set over the


TOPOGRAPHICAL SKETCH
OF THE
MALIGNE LAKE GROUP
NORTHERN CANADIAN ROCKIES
SCALE 1-100 000
BY M. STRUMIA
MILES:
KILOMETRES:
LEAH
MT. SAMPSON
MALIGNE
MT. MALIGNE
PK. WEDGE
MT. HAWLEY
MT. FLORENCE
PK. THUMB
MT. UNWIN
MT. CHARLTON
LAKE
MALIGNE RIVER
Camp
Warren Gl.
North Pk.
MT. WARREN
Warren Glacier
ROCK TOWER
MT. BRAZEAU
Brazeau Ice Field
POBOKTAN PASS
MT. REPLICA
MT. H. MAC LEOD
POBOKTAN C.
MT. CORONET
ROUTES
GLACIERS
APPROXIMATE
N
117° 30'
52° 30'

ashes of the old one, down the immense frozen river came, with the late evening breeze, a melody of memories that introduced the first movement of a great symphony. The company was in part the veterans of the 1924 campaign: Dr. J. Monroe Thorington and David Moberly, the trail guide; newcomers were William Hainsworth, Julian Hillhouse, and Harry, the cook. Next day, June 28, 1928, we submitted to the burden of monumental packs, and trod slowly up the Scott icefall for the first struggle after the winter lethargy. About 5 hours later we established a camp upon the right orographic moraine at an altitude of about 8000 ft., immediately in front of a huge buttress of Mt. Ermatinger, ploughing into the frozen waves of the Scott Glacier. To call that a camp would really be mystifying; our abode was made of two tent cloths stretched over a boulder and weighted down with stones, leaving just enough space for us to crawl under in a rather undignified fashion.

The same day we directed our weary steps to Mt. Scott, but the clouds kept pace with us and soon the mountain tops were covered. As we were reaching, late in the day, the summit ridge, a strong wind came up from the cloud-covered Alnus Creek valley, and soon we were in the midst of a heavy storm. Snow began to fall, driven by a freezing wind; blinded and tired, we came to a place where the ridges suddenly dropped on all sides. As Hainsworth and I attempted to build a cairn, in a temporary lull, we could follow the main ridge dropping away in a N.W. direction and losing itself into the trembling white of falling snow. That night, between unsuccessful attempts to find a soft spot for weary bodies, the doubt was expressed that the peak reached was not the highest of Mt. Scott.

Next day, from the summit of Mt. Ermatinger (10,080 ft.), we were all easily convinced that the spot reached the previous day was the lower or S. peak of Mt. Scott (10,500 ft.). Mt. Ermatinger, a first climb, offered but one difficulty: a perpendicular chimney at the base of the S. ridge.

The rest of the ascent was a walk over shale and the flat, snowy S.E. ridge; a prosaic end to a great promise. But we needed training and the skin tanning, and we had a fairly good amount of both. From the heavily corniched summit, however, the view was of the greatest: Serenity, Hooker, Scott, Evans, enclosing us in a gigantic amphitheatre—a quiet survey of past battles and prospects for future days. At night we had rain, with a leaky roof, giving me a chance to be proud of a waterproof contraption, a combination wind-jacket, rain-

coat, and sleeping bag. With a little more warmth it would have been fair!

The last day of June came in a gust of wind with billowing clouds. Below, there was a heavy blanket of undulating mist. Thorington and Hillhouse chose to remain in camp. Hainsworth and I left, and rapidly retraced our steps up the S. peak of Mt. Scott, over a steep incline of unstable shale and very soft snow. The wind was very high; soon snow began to fall and the temperature took a sudden drop. For a moment we felt very doubtful about the issue of the day. We stopped only a few minutes on the S. peak, then we roped and started down a broken, steeply inclined ridge, lost in the mist. All day long, except for a few minutes on the return, we could barely see more than 100 ft. The rocks were icy, the cold intense; from the S. peak we descended, perhaps 150 ft., to a thin aerial saddle formed of a cluster of tottering pyramids of disintegrated rocks, hemmed between two deep gashes of the ridge. This fell away towards Alnus Creek in a terrific, dark, perpendicular wall, and sloped to the Scott Glacier by a steep incline of smooth rocks and snow banks. There were a few delicate passages about the saddle, which we had anticipated as a mere walk. Then, after the second gap, the ridge once more flung upwards; thin and rocky first, with an occasional rotten corniche threatening ruin over the Alnus Creek valley; then snowy. The ridge unfolded before us a little at a time in the thick mist: at times a white, ghostly apparition, at times a dark skeleton of perspiring rocks. The upper part of the ridge rounded up, and at 10.55 it ended abruptly on a narrow ledge flanked to the E. by snow, falling to the W. and N. into a nothing of swirling mist. We were on top (10,826 ft.); it had taken us 4 hours from the high camp. As Hainsworth contributed a fair-sized cairn, I entrusted to the notebook the impressions of the ascent. The fog broke up at intervals, revealing the precipitous E. face of Mt. Evans as a spectral apparition. Away down to the N.E. we could, for a short moment, identify Mt. Ross Cox and the ridge leading to Divergence Peak; farther away, Fryatt, Belanger, La Pensée, and Brussels Peak. We caught several glimpses of the immense frozen river running at our foot: Scott Glacier appeared unexpectedly near, and almost inviting. But Mt. Scott was jealous of other beauties and again drew a veil about us, and we remained a short hour to wander along with the drifting clouds. I always looked upon these hours of mystic contemplation or of intimate reverie as a rebellion of the better

part of us against a purely sportive tendency, as a liberation of mind from the bondage of aching muscles. But a closer analysis is rapidly convincing me that in many instances this change is probably only a phenomenon of fatigue.

On the return to the saddle the fog again lifted for a short while and we again paused to admire that beautiful ridge disappearing into a mystery of shifting grey. Then we rolled down to camp, to complete the descent in about 2 hours. There the sun shone unmercifully and threatened the last vestiges of skin on the nose of Thorington and Hainsworth. At night it rained again ; it was warm and wet when we broke camp at 2.30 in the morning. Crossing the immense basin of the Mt. Hooker Icefield in all its length, we reached the base of the S.E. ridge of Mt. Evans, which we followed without difficulty to the summit, 7 A.M. (10,460 ft., first ascent). A little after 1 P.M. we were back in the hospitable base camp.

The next part of the programme called for a short digression up the Middle Whirlpool Creek ; it gave Hainsworth many opportunities for good shots with his cinematographic outfit, and it turned out a great success as a fishing trip. Alpinistically, it gave us a glimpse of several peaks in the Needle Group that will form the delight of many cragsmen to come. More rain on the return to Jasper, which we accomplished in 2 days, having had to renounce a course up the Divergence Creek because of floods in the Whirlpool. For the second time Divergence Creek had proved an obstacle : in 1924 we simply missed it, and a tributary creek blocked our efforts toward Mt. Fryatt. Now, the high water of the Whirlpool would have made the crossing a long affair, if not a dangerous one ; and I was anxious to reach the last lap of the course and the main one—the Maligne Lake Group. I had looked toward it longingly for the whole winter, but I had no preparation of any sort, except the physical one. In fact, the literature of the region, what little of it there is, was unknown to me ; I had a short list of names, and Thorington suggested that a few of the peaks had been climbed. I was equipped with a rather schematic map, a compass, a borrowed aneroid, and a great desire. Later, Hainsworth, joining me, brought the incomparable help of a small level and his charming company. On July 6 the four of us set out from Jasper after leaving the faithful horses for an automobile. In the first part of the journey there is little to suggest the great splendour of the valley above, but the road is very comfortable. After the Maligne Cañon, which we admired at length, we came upon

what was unanimously voted the most dangerous portion of the journey: a newly opened automobile road which we negotiated with 'Curly' Phillips at the wheel, and, surely, only his great knowledge of horsemanship kept him from being thrown out half a dozen times. Leaving, with no regrets, the automobile, we travelled comfortably in a motor boat 5 miles up Medicine Lake, a green mirror of pines and fantastic rocky teeth. Here Phillips proved as good a sailor as he had been a driver. At the S. end of the lake a chalet was being built, but the restaurant was already open. That was one of the bright spots of the day; because even the most inveterate dreamer must admit that the euphorbia set up by a good meal will at least improve the appreciation of Nature's greatest masterpieces; and we were moving toward one. Ten miles of comfortable walk followed along a foaming torrent; suddenly, at a turn, cut in the sky, between the silhouettes of ascending tiers of pines, appeared a twin mountain, far and glittering—Mts. Unwin and Charlton. There we left the river, and ploughed in a thick growth of dark pine; we had been singing and talking; now we were intent. Shadows were lengthening and with them the eternal spell of the heights was spreading; we could not see them, but we could feel them about. Then, as if the green curtain had parted, they appeared, a long line of giants, severely mirrored in the still blue of Maligne Lake. They seemed to rise from the very depth of the silent water, as crystallized Desire.

History seems to repeat itself even in mountaineering events. Palmer and Carpe had been disappointed about a certain motor boat about 5 years before; we were also to be told that the boat was not in running order. But we were luckier: Hainsworth put his engineering skill and his craftsmanship to great use when he and Jack Douglas, the skipper, improvised a complicated rigging with curved pine trunks and attached an outboard motor to a large canoe. It was dark when the boat was launched; a few minutes later, it glided in a huge circle. Its roar awoke far echoes and sounded like a defiance to the slumbering giants.

A comfortable bed had decided advantages over tent life, and we did not hesitate to take full advantage of it. In fact, on July 7 we left the chalet only at 8 A.M. for Mt. Charlton. A great sensation, indeed, that of gliding over deep green water towards unknown adventure, with every turn revealing a little valley, a trench of green ending against nameless white apparitions.

In about 1 hour we came upon the Sampson narrows, and there, in a quiet basin, we landed, right in the midst of an unpleasant tangle of jack pine and dwarf willows. Hainsworth plunged ahead with a fervour and enthusiasm that revealed the old woodsman of the Pacific slopes. I am sure that he enjoyed himself; but I am equally sure that I did not. It did not last long; we soon struck—perhaps 500 ft. above the lake level—the end of the true left moraine of the Charlton Glacier: a hard, firm moraine ending with a perfect knife-edge, much too thin to walk along. Blondin would have had his hands and feet full! We had to manage to scrape some equilibrium, until we reached the level of the first ice plateau, whereupon we gladly descended, perhaps 100 ft., to the compact, hard black ice covered with rocks.

The N. face of Mt. Charlton, from the lake, is entirely an ice problem—and a good one. In the middle part there is a sharp rock that sticks out of the frozen sea. To its true right the glacier breaks into a maze of crevasses; on the other side the ice, with a breath-taking sweep, covers the great N.E. face of Mt. Unwin with a broken, glittering armour. We crossed the icefield to its far side, toward Unwin. The tops of the mountains were covered with a dirty, ugly mantle of grey; at intervals the wind brought puffs of mist. We were now at close quarters with the mountain's defence: a labyrinth of crevasses with a thin cover of fresh snow. The misty weather with the refracted light made the going slow and fatiguing, but always supremely interesting. We roped and started up. Leading, I stopped more than once with the ice-axe handle plunging without resistance into a green depth, whence came the muffled rumble of water. The course was extremely tortuous, but forced us inexorably more and more against the immense ice wall of Unwin, threatening to hurl down an avalanche. Earlier in the season it would be folly to attempt this route; but, on the other hand, it would be difficult to find another route on this side of the mountain. We scrambled up: practically without step-cutting, closed in a blinding world, with our eyes glued to the outline of the col between Charlton and Unwin. We came to the sharp rock, and we kept in the narrow trench between it and the wall of Unwin. The gully was partly filled with avalanche snow, making the going safer, if not easier. Past it, we found a steep wall of soft snow cut in half by a huge, gaping, black bergschrund. Right in the middle, however, it appeared somewhat narrower: there, avalanche snow had filled the gap. The passage was more awkward than difficult:

a perpendicular wall of soft snow, over a lurking gap ; the tracks we left were big as a hogshead. We scrambled over it by dipping arms, legs and face in the sopping snow. From there to the col it was a fatiguing ascent over a steep incline of soft snow on hard ice. At the col, rocky and covered with soft snow, we were greeted by a violent and freezing wind. We gazed down the S. face of Mt. Charlton ; a dark perpendicular wall dropping forever into a white pit, containing a frozen lakelet. This drains into the Maligne Lake, of which we could see, under the clouds, a leaden strip. The col is just below the level of the top of Mt. Sampson. We soon left it and proceeded up toward the summit of Mt. Charlton by an easy slope that slowly tapered to a thin ridge, crowned with a beautiful corniche. We reached the top, a sharp snow hummock, in a blinding storm with a temperature of 48° F. (*ca.* 10,450 ft.). As if by tacit consent, Hainsworth started the construction of the cairn, and I returned to my diary and a sum-up of the day's struggle. The fight had been very keen, and the storm was now adding a touch of drama which at the time was totally unwelcome. We had hoped to gain much information about the peaks at the S. end of the lake, but in the mist, with perspective and details lost, Thumb, Warren, and Brazeau appeared as apocalyptic apparitions rather than future climbing prospects. We did not know names or topography, and that did not help. By the time we started down it was snowing hard—more than 2 inches of snow fell before we reached the lower glacier. There it changed to rain. But weather and the well-traced route made our homecoming a speedy one ($2\frac{3}{4}$ hours from the summit to the lake shores). A tragedy nearly marred the end of the day : we were running at good speed down the bare ice tongue, trying to keep warm ; my cold hands failed to hold my pipe, and it rolled down, slid, fell into a water trough, disappearing into a fissure. We examined the situation : the fissure was closed at the lower end, and was perhaps 7 or 8 ft. deep, but too narrow to allow one to descend into it. After some search the pipe was discovered whirling in a pool, with the way out precluded by a rock encased in the crack. The rescue, rapid but intensely dramatic, was accomplished by enlarging the crack until I could lift the inanimate body with the ice-axe. But looking back, to the glacier slowly disappearing into ominous clouds, the sight of the threatening séracs and snow-covered crevasses made me clutch my pipe with a friendly meaning. We do not fear to risk everything on a rocky ridge

Photo. M. Strumia.

Mt. SAMPSON from the CHARLTON GLACIER.
(On left S.W. face and W. ridge.)

or on an open mountain face, or up a glittering blade of ice ; but death, lurking in the cold, leaden, and hidden crevasses is too hideous and repulsive. At 6 in the evening we were back on the shore of the lake, which we reached at a point below our morning landing, by following the glacial torrent to a sandy delta. We built a fire and began drying ; it was not long before the friendly boat was bringing us back to comfort as The Thumb and Mt. Warren at the end of the lake were taking on reddish reflexes of fire under a grey canopy of broken clouds.

The greatest enemy of climbing is a comfortable hut or hotel and the most obvious alibi bad weather. We had both of them beyond cavil on July 8. Cold showers transferred the lake into a grey pond, closed in by slowly drifting fog and weeping evergreens. Yet, viewed from the window of the chalet, with the harmonies of a grumbling stove, recent memories and future plans blending with the smoke of the pipe, that dismal world was pleasant and introduced a contemplative mood which was not cheerful but not depressive. A thought of spending a similar day in the average tent, wet, cold, with the prospective of getting wetter and colder, made the present condition almost perfect.

We spent a profitable hour with Mr. Macklin, the local game warden, in learning names. That was as far as our knowledge of local geography went at the time.

In the evening it cleared, and in the perfect mirror of the still water ghostly apparitions of white somewhat dampened our hopes for the morrow. It was freezing cold when we came back from a boat trip over the lake, and during the night a stiff breeze swept the sky clear.

Next day, at 8.30, we landed on the long, steep rock slide coming from the W. face of Mt. Sampson. The day was to be one of pleasure : emotions in plenty but not too deep : difficulties never excessive, but affording almost continuous gymnastics : a climb interesting always, once dangerous on the steep flat slabs near the summit, with fresh snow covering the rocks, water trickling down and stone falls.

After the flower-strewn slide came a traverse to the right, to avoid a huge, perfectly smooth cuirasse of water-polished rock, insidiously rolling from a gentle slope to a perpendicular wall. The W. face of Mt. Sampson is full of these peculiar *plaques* : they follow in an upward sweep like the long rolls of a gigantic wave ; between them are breaks affording a way either in straight-running, open couloirs, with large boulders, or in transversal cracks filled with loose stones.

We felt the mood of the cold, sunny day and the variety of the rocks, and we wandered ropeless at a fast pace, as Hainsworth took cinema views, until, following an oblique line of climb to our right, we came upon flat rock *plaques* with a thin layer of fast-melting snow. Stones were falling from the summit ridge, perhaps 300 ft. above. We roped, and I started up a series of fissures which, with dry rocks, would have afforded an excellent warming-up exercise. We reached the broken ridge, about 500 ft. below the summit, at 12.40 ; the E. face of the mountain falls perpendicularly in a forbidding gulch of barren rock, and we went mostly on the W. side of the ridge, keeping midway between the tottering rocks of the edge and the smooth, snow-covered rocks below. The summit (10,000 ft.), which we reached at 1.45, is adorned with a beautiful corniche leaning to the E., and in a niche of it, sheltered from the wind, we enjoyed one of the best aerial surveys of the whole summer. For the first time we could see Mt. Brazeau, the whole massif of Mt. Warren, and the mountains of the W. and S. end of the lake. We made level readings and observations with the compass ; we made sketches and took pictures ; all my mental activity, that day, was diverted to the outer world. Perhaps a reaction to the previous day ; perhaps forms and colour proved too much of an attraction ; perhaps the climb was too filled with the joy of motion and not difficult enough to produce a reactive introspection. We left the summit at 3, and on the return got into more difficulties than during the ascent, as the snow was softer : in order to avoid the danger of falling stones, we attempted to cut down directly from the summit. The line of descent ran along a series of steep, narrow couloirs, filled with soft snow and loose rocks, and a series of narrow horizontal ledges. We kept always below the line of ascent, but the steepness and smoothness of the face upon which we were crossing gave us several anxious moments. At 5 we were in the couloir followed in reaching the ridge in the morning ; there we unroped and sped down the unstable scree slopes and on to the flowery shores, to the waiting boat, at 6.15.

The next day, July 10, we made preparations to establish a camp at the S. end of the lake, whence we hoped to open our attack upon Mt. Warren. Somewhat vague information told us of a glacier almost reaching the water, or, according to others, actually pushing its way into the lake. It turned out to be over 2 miles from it !

Motoring up the lake was an uninteresting and slow affair,

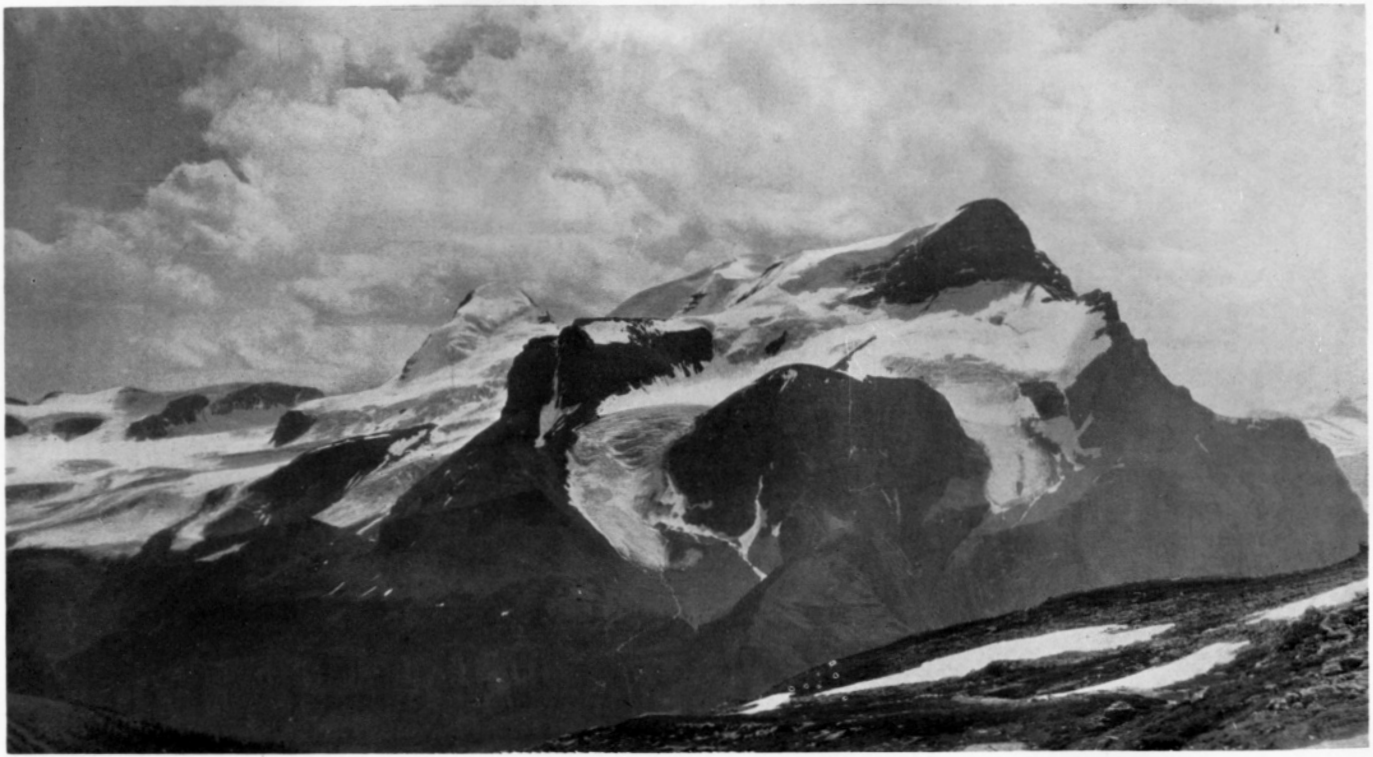
as the all too pampered motor developed some kind of a coughing fit, after which it would simply go dead. We were so consumed with curiosity as to what the S. end had in reserve for us that we did not actually take notice of anything before the Sampson narrows.

The lake widens again beyond the narrows, and the cliffs on both sides become more precipitous. We passed on our right a beautiful hanging glacier, and finally rounded a gigantic rock fortress raising its ruined battlements into the floating clouds 4000 ft. above the water : Peak Thumb.

After this corner the lake turns somewhat to the E., and it ends with low sandy shores at the opening of a short valley coming from the E.

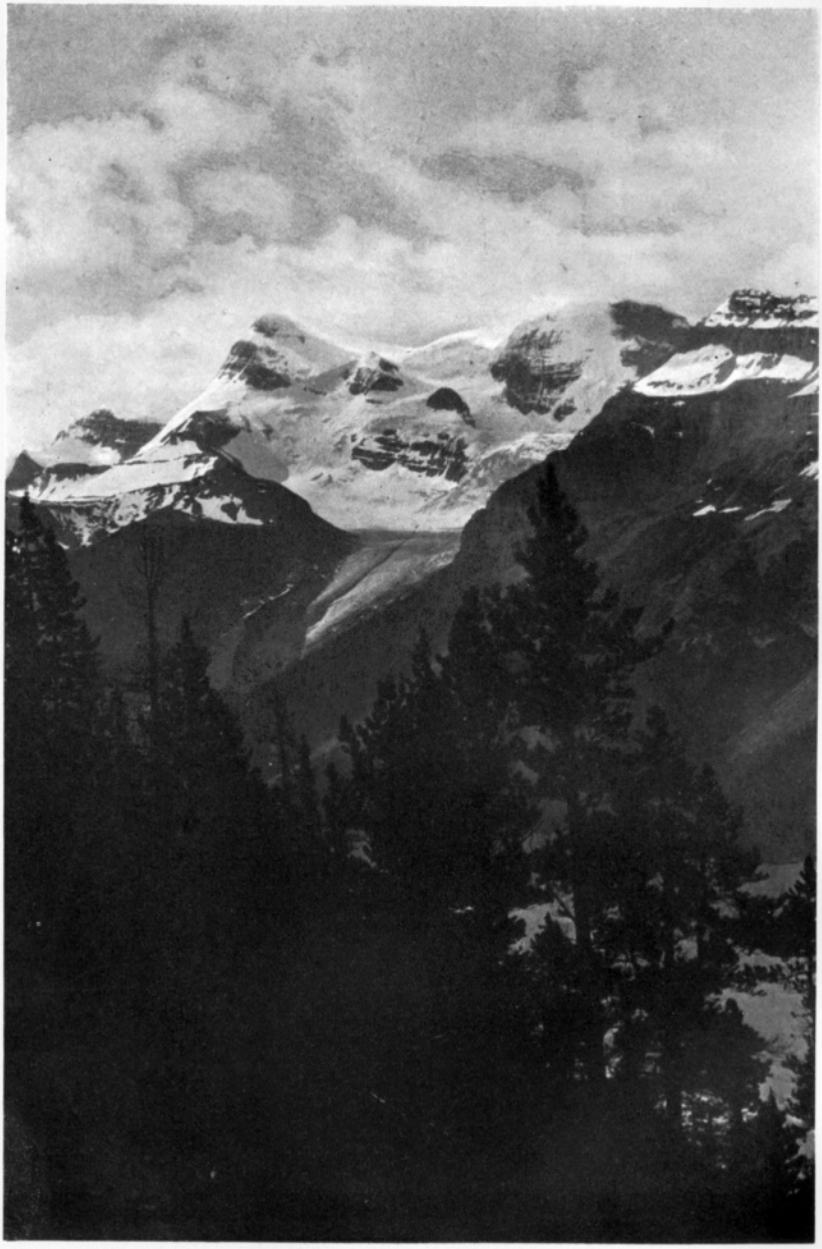
Camp was established on the gravel flats of the Warren Creek, dominated by the precipitous walls of the N. peak of Mt. Warren. Nearby, a cold pool of spring water, the shore of the lake covered with dry driftwood, fewer mosquitoes than anywhere before ; altogether an idyllic spot. Bill, a true woodsman, erected his shelter tent amongst the pines on a bed of moss. I preferred the open and set mine upon the gravel, and I can now truthfully say that each pebble left a deep impression on me ! The stove was erected at the back of a rock ; really only a piece of iron sheet, but it served its purpose well. We had no sooner set up our tents than it began to rain ; we set off in a hurry to look over the approaches to Mt. Warren. This magnificent massif is a chain about 2 miles long, running from N. to S. It forms three peaks: one, the northern, rocky; the others, at the S. end of the chain, snowy. The E. face of the group is covered with a beautiful ice field, running to the valley with six tongues. It measures about 3 miles in width and a little less in length. But that day we did not learn all this ; we only learned that about 1 mile from the lake the valley divides in two branches, one running N. and the other S. The latter ends with a morainic amphitheatre, with foaming torrents rolling over the brim. We felt that it was the best way to approach our giant, and so after a rainy night we set out at 6 A.M. on July 11. We moved rapidly along the true right side of the torrent, which sharply turns to the S. after receiving an affluent from its true right, which we crossed easily. In about 1½ hours we came to a point where the main torrent is joined on each side by a smaller stream. We were altogether deceived as to the position of the highest peak of Mt. Warren. We thought the rocky and the snowy peaks to be much closer than they really were, so we started up the

true left confluent, and, after a short tussle up a rocky creek and a comfortable walk on a solid moraine, reached the ice. We commented upon the easy approach and plunged headlong into the middle of the first icefall. It was not difficult: there were many bridges, and with some cutting we made good progress. Above it we found ourselves in a snowy basin; a brief survey made us reach a sad conclusion: we were in a veritable trap. To the right, steep rocks with snow banks perched above; the ice below peppered with stones; in front, soft snow alternated with belts of perpendicular rocks with avalanche channels; to the left, a tremendous sérac icefall. Looking upon that situation now, it is evident that we should have returned to the moraine and attempted another approach; but we were convinced that Warren's highest peak lay exactly in front of us, so we attacked the séracs. It was, without doubt, the hardest thing of its kind that I have ever encountered in the Rockies. We had to make our way, with very laborious cutting, up perpendicular walls of ice, only to have the way cut off twice by huge transversal crevasses; finally a blade of ice, crumbling in several places, brought us past the bad place. But there in front of us was another large gap, filled with soft snow ending against a wall of ice perhaps 20 ft. high. There is such a thing as irritation in mountain climbing; no doubt it appears a rather foolish thing, but it occurs, and it occurred to me on that occasion. It is not so much irritation at the inanimate mountain as at our impotence in an unforeseen emergency. The wall was perpendicular for about 10 ft.; then it rounded up; the base sunk in the soft snow filling the crevasse. I cut steps in the wall as far as I could, hoping thus to be able to reach the upper rim. But once against the wall, on the first step, the simple weight of the body would throw me back. At each fall the soft snow bridge would give way, and soon one leg went through into a deep black hole. Now I had to stand farther from the wall; there was no other approach on either side of the bridge. Fortunately I still had enough sense in my madness to cut high up towards a huge ledge to which I pulled myself up. And so, in a last effort, with the aid of the ice axe, I finally crawled over the solid flat ice of the upper plateau. In front of us we had now a large snow basin. Beyond it, Mt. Brazeau, a majestic mountain of ice. The crossing of it, under a broiling sun with soft snow, in which we sank up to our knees at each step, was a matter of almost herculean fatigue. On such occasions Hainsworth usually led: he would have to sink



Photo, M. Strumia.

Mts. BRAZEAU and WARREN from the N.



Photo, M. Strumia.

Mts. Charlton (left) and Unwin (right) from Mt. Sampson

anyhow, as he is somewhat heavier than I am, and therefore it would save some energy for the good of the party! As we reached the S. end of the basin another one appeared, closed at the S. end by a snowy spur leading to the summit ridge. It appeared extremely steep, but we felt that, not being broken by rocky belts, a snow avalanche could not have serious consequences. By a long tramp in the soft snow we reached the spur about one-third the way up, above the partly open bergschrund, which we crossed over a bridge made by an avalanche. Just there the incline begins to swing upwards, and straight up we went. It soon became necessary to cut steps through about 5 or 6 inches of soft snow into the ice, a task which repeated itself about three hundred times and took a good hour. To our left there were several outcrops of disintegrated rocks, but the snow looked better. Toward the end the inclination of the snow became less: we could now go along without cutting, and shortly rested upon rocks of the final ridge. We realized now that the peak was not far from us, in a northerly direction. We followed the S.E. snow ridge that forms a huge corniche to the right and falls to the left with a magnificent rocky wall, and at 4 P.M. reached the top (*ca.* 10,800 ft.). Perhaps a quarter of a mile from us, another rocky peak broke through the final ice-cap of Mt. Warren: Hainsworth set his level upon it and found it to be several feet below us. We called this latter the Central Peak. Between the S. (highest) and the Central Peak there is an arête of ice and rock, broken by huge fissures and adorned with great corniches. On the other side towers Mt. Brazeau, a rounded snow-cone, not nearly as inspiring as the giant seen previously in the day. We were on the top for 1 hour; it seemed a minute. We took a little food, and made numerous observations with the level and the compass, but above all we admired. Maligne Lake is not visible: the Central Peak of Mt. Warren covers it. The S.E. face of Mt. Warren is fearfully repellent; but beyond it the world is immense; Mt. Brazeau, all the peaks around the lake, Forbes, the Lyells, Mt. Columbia, Alberta, the Twins, Clemenceau, Hooker, Ermatinger, Scott, Brussels Peak, Christie, Fryatt, the Ramparts; and then a violet infinity of peaks lost in the haze of the heat. The mind did not stop with the limited range of senses; it went beyond it, in the great hall of the past, and it was not long before only the body was sitting on the top of Mt. Warren.

That glorious hour flew away as a meteor; a cold wind brought our senses back to the pressing need of a prompt

return. We trod our way back along the steep ridge : the steps were large, but to the foot slowly lowered, while the face pressed against the ice, they appeared miles from each other. It took us over 1 hour to reach the snow basin, but from there we cut down directly toward the lower portion of the icefield. The way appeared interminable, but a great deal easier than the morning course. We started down at a great pace, with that determination that narrows crevasses and makes of frail snow bridges solid highways. It is the reckless mood which may lead to one's doom, but also to a beneficial disregard of the value of life. We crossed the muddy, hideous, glacial torrent over a magnificent ice bridge and were on the moraine.

On the return journey the moraine is usually the place where we feel tired. The interest of the climb is over, the energy of desire is consumed, and we have only a remnant of our physical forces. That evening our mind was lagging back on the summit ridge, amongst the giants, while we dragged ourselves down the moraine and over a rocky wall to avoid a cañon below. We crossed a stream with a terrific current, and finally joined the morning trail. We were still distracted when we sat to our supper in the camp. But as the last light glimmered over the shivering water, our imaginations were pushed down by the dark night from their height of desire, and we stood in the darkness to hear the wind rushing down the conquered mountain to recount the glory of the day.

Next day we got up at 11 in the morning, and at that it was a great achievement ! Almost immediately to the back of the camp opens a steep rock slide, mostly covered with creeping juniper and a mosaic of flowers. There are loose stones, too, but where the slope becomes dangerously steep we kept to the right, upon more solid rock. The progress was slow ; we wandered up, collected flowers, took pictures ; bathed in the mist of two silvery falls ; we kept far enough from each other to be undisturbed and near enough to appreciate the finer things of companionship. Above the falls we sat by a cold pool and lunched. It was hot, silent, and clear. In front Mt. Warren dominated things and thoughts majestically. Above the falls we entered a rocky amphitheatre ; a barren, uninteresting monochromatic world of loose rock. The amphitheatre is closed at the N. end by a low saddle, adorned by a thin strip of snow forming a corniche. We cut to the left, over huge boulders piled in great disorder ; it was pleasing gymnastics that resolved some of the muscular stiffness and improved our kinetic euphorbia a great deal. We

emerged, after a brief scramble up a snow slope, on to the E. rocky ridge of Peak Thumb. It soon turned into a comfortable snow highway, upon which is perched a disintegrated steeple of rock, well in view from the chalet. We arrived on the rocky summit at 5 P.M. (*ca.* 9200 ft.). It is one of the most aerial perches in the world. The W. face falls to the shore of Maligne Lake with two perpendicular drops of about 2000 ft. each, separated by a narrow plateau. The lake lay at our feet in both directions, but much of it was hidden by a lower N. spur of our peak. We were up in 6 and strolled down in 2 hours. We did not use the rope all day ; and that night at camp, even in the midst of a lucullian supper, we were still in a contemplative mood.

What a camp that was : we had by now become familiar even with the forbidding buttresses of Mt. Warren ; we had won it and it did not oppress us any more ; we were becoming part of our world. At night in the tent the melody was even keener : the far pulsing of waterfalls blown by the high wind ; the muffled rumble of the torrent ; the murmur of the pines ; the wild lashing of the lake against the sandy shores ; and the petulant chatter of the brook. Occasionally rocks came crashing from the invisible ice-tongue down a fearful couloir that cuts Mt. Warren's most northerly spur, and filled the melodious silence with tragic echoes ; then again the sound of water and wind.

Our last climbing day was one of colour and contemplation ; our senses had by now rested enough to be more keenly appreciative of the outer world, and the valley that we explored that day was by far the best of all our journey. It was virgin, too, I believe, of human tracks.

On July 13 we left camp at 10 in the morning and proceeded up the Warren Creek to where the valley divides ; there we plunged in the wood to the left, and slowly approached the true right bank of the torrent draining the last unknown massif of the group ; that which we named Mt. Maligne. We met two cañons, the second one necessitating a rather unpleasant digression high over the steep wooded slopes, with a great number of windfalls and an unusual number of mosquitoes and other winged pests. We followed the true right side of the torrent ; above the second cañon the valley opens gradually : we were now about 300 ft. above the level of the rushing waters which have cut their way deeply into the barren limestone of the bottom. A little above, the valley is closed by a high rock wall, with the black ice tongue of the Maligne Glacier just

reaching its brim, whence a large muddy stream issues with a waterfall. We had followed right along a goat-trail, and could have picked enough wool to furnish our bed at the camp quite comfortably. The meadows of the upper portion of the trail could hardly be described, and they can hardly be admired unless you are there with plenty of time and the proper mood. Then just let the sun and the perfume permeate the whole body, as the eyes gaze with increasing wonder over the glittering Warren icefall. It comes down in long tongues dipping into the grey of the huge moraine, and rises majestically to cover Mt. Warren and the N. face of Mt. Brazeau. Marmots frolicked around, and a little later we came upon a herd of wild goats, eleven or twelve in all, with kids, walking peacefully over the soft green of rolling meadows. Leisurely they strayed up and joined another group of about the same number, and then moved upward at a slow pace, possibly to escape the pests becoming numerous on the lower heights. We chased them for a while with the cameras, then we sat down by a clear brook and turned again to the contemplation of the far icefield, and the nearby carpet of flowers. We were anxious to get a glimpse of what lay to the back of the ridge at our left. When we came upon it we realised that our conception of that territory was somewhat warped. In fact, we were not on the ridge which we expected to lead to Mt. Florence, but were separated from it by a huge snow basin. The ridge we were upon was actually the S. end of the Maligne group. The late hour advised us against attempting the long ascent to the highest peak of the Maligne group. We were anxious to make observations from as many points as possible, in order to complete our somewhat scattered notions about the geography of the region, so we decided that we should cross the snow basin and there divide: Hainsworth climbing Mt. Hawley and I climbing Mt. Florence. We did not rope during the whole day, as the climb did not offer any real difficulty. Mt. Florence, by the S.E. ridge, proved an easy climb, the only difficulty being a short snowy ridge connecting two peaks of almost the same height (*ca.* 9750 ft.). But whatever was lacking in sport was made up in the great world of silence and giants which closed around me on the summit. After building a cairn, I remained there long enough to see the sun setting at the back of huge billowing clouds above Mts. Unwin and Charlton, the lake below taking on crimson tints as a vague fog slowly covered the far end of the Maligne Valley. Meanwhile Hainsworth had climbed Mt. Hawley (*ca.* 9850 ft.), a rocky peak N.E. of Mt. Florence. At 5.45 only, I left the

summit and returned to meet Hainsworth in the snow basin and resume the tramp in the soft snow. Returning to the S. ridge of Mt. Maligne, we glissaded down steep slopes, and thought we could reach our trail more directly by cutting down into the gorge below; we were soon stopped at the brink of a huge cliff, where we had to turn around, climbing wearily for another half-hour. Then we just strolled down.

Near one's journey's end comes a feeling that we have rushed over it too much; that, indeed, in the anxiety of covering too much ground, of learning details of a region, of seeing new things, we actually tramp past the finest ones. And so, again, that evening we became suddenly silent and once more introspective; and when we reached camp that night, almost in total darkness, we felt that our spiritual maturity in mountain climbing was still far away. It rained heavily that night and next morning, and the mountains were all veiled when the boat called for us about noon. We came down the lake and spent the rest of the day at the chalet. Phillips' great kindness helped our return trip from the Medicine Lake to Jasper, on July 15, but we should have been lost for transport between Maligne and Medicine Lakes had not Joe Weiss, genial mountain-lover and photographer, helped us with our rather heavy loads to Medicine Lake. There, more rapid means of locomotion took us back to Jasper, where we had a hard time to preserve some of the spell of the high hills through the rather noisy welcome of civilization.

Notes.

All ascents made in the Maligne Lake district are first ascents.

Several of the names used in the present article are new, and have been duly submitted for approval to the Canadian Geographical Board.

The bibliography of the region is well reviewed in the article by Mr. Palmer ('A.J.' **36**, 93–115).

The Kebnekaise District, Sweden.

By H. L. JOSELAND.

IN view of the extent of the mountain area in Swedish Lapland, it is strange that, with the exception of an article on Sulitelma in Vol. **20** of the Alpine Journal, little or no information appears to be available about it in English.