

find a small group of tourists, now gazing through a telescope at our stone man, now admiring the work of a young artist, whose delight was extreme at the coincidence that the peak should have had its portrait taken, as he flattered himself, for the first time, on the day on which it was first ascended.

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### MOUNTAINEERING ON THE PACIFIC.

THE following account of an ascent of Mount Baker, by a member of the Club, Mr. Coleman, the author of 'Scenes from the Snowfields,' is condensed from a very interesting article originally published in 'Harper's Monthly Magazine':—

In these times of volcanic activity, when from all quarters we have accounts of the heaving and rending of the earth's surface, and the whole Pacific slope is agitated with the throes of earthquake, some account of the first ascent of Mount Baker, which has been active within the memory of man, may not be uninteresting. At a time, too, when the Alpine Club finds its occupation gone, the opening out of a new field for exploration deserves attention.

Mount Baker is the most northerly of those great cones which dot the Cascade range, and is only fourteen miles south of the great boundary line cut through the forests which divide the American and English possessions. It forms the most striking feature in the attractive scenery around the Fuca Straits and the Puget Sound. Amidst numerous groups of islands (the Western Cyclades) and pine-clad heights, like another 'Snowy Olympus,' it towers above—the silent sentinel of a solitary land.

The mountain may be approached on the south-eastern side by the Skadgett River, taking Utsalady, on Puget Sound, as the starting point; on the western side by the river Lummi, which flows into Bellingham Bay, taking Seahome as the starting-point; and on the northern side by a trail from Fraser River, taking Fort Hope as the starting-point. For the third attempt the approach by the Lummi was chosen. General M'Kenny, Superintendent of Indian Affairs for Washington Territory, kindly placed four trustworthy Indians at my command. To the official sanction thus given, and the fitness of our dusky companions for their duties, we were indebted for our security in ascending the river. We cannot forget the expertness displayed in many difficulties by Squock and Talum. Though a Flat-head, Squock is very handsome, and, with his swarthy face and long thin limbs, resembles an Arab.

Sure of such good company, I determined to start from Victoria on August 4th, 1868. Travelling is very enjoyable in these inland waters. The bottom of the canoe is spread with small branches and twigs, and then covered with matting of native manufacture. Blankets are then placed against the thwarts and form a soft cushion, against which one can recline and be as comfortable as in a first-class railway carriage. When camping on shore at night, the mats are spread out on the beach, and (with one's blankets) make a soft bed. Gliding along in our canoe,

away from the noise and bustle of the busy world, the spirit revels amidst the beautiful scenery of the archipelago. Island after island is passed, all wooded to the water's edge with the cedar, the fir, and the tender green of the arbutus. The mossy banks are here covered with bushes, and there relieved with bold groupings of rocks in picturesque forms. As we look down through the clear and limpid waters, the silvery fish are discerned disporting themselves among the most beautiful forms of sea-weed and shell; while away in the distance, bounding the horizon, are the snow-capped mountain ranges of British Columbia and Washington Territory.

In passing along we noticed the camp of the English garrison on San Juan Island, and were struck with the singular beauty of the scenery around it. In the foreground is the level green sward, with a noble tree rising from its centre, and fringed with spreading maples. Up through these there are winding walks to the officers' quarters, and beyond a lofty hill, on which a summer-house has been erected, whence the surrounding shores are seen to advantage. Between this and the American camp, seven miles off, lie farms in a high state of cultivation, the proprietors of which declare it to be the 'best land they have struck,' since there are no rents, no sheriff's officers, no taxes, and no prisons.

We now enter Bellingham Bay, perhaps the future terminus of the Northern Pacific Railway. We made direct for Squallicum, the residence of the Hon. Mr. Eldridge, whose house we had appointed the rendezvous. We found that Stratton had anticipated Ogilvy and myself, and that a party had assembled to witness our departure. Starting in company with our dusky friends, under the command of a trustworthy Indian named 'Squock,' and our canoe loaded with a month's provisions, it appeared that the Fates had combined to render our journey interesting, for the spectacle that burst upon our view that night was grand in the extreme. For miles around the forests were on fire. No illuminations ever kindled for crowning of king or news of victory could be more brilliant. From numberless pines the coruscations darted up to heaven, their refulgence reflected in the gleaming waters.

Our journey was henceforth up the Lummi into the bosom of the forest. Its banks are adorned with several species of willow, alder, the crab-apple, grasses, English clover, the daisy, the cockspur thorn, the sweet-brier, the wild rose, and the beautiful festoons of the wild pea. There is plenty of open land along the lower portion of the river, and half a mile up we observed the telegraph wires crossing the river—a silent prophecy of speedy settlement. Five miles on our way was blocked up by a 'drift,' and a portage had to be made. This consists in carrying the canoe and provisions along the bank. For this we were prepared, having shortly before exchanged our 'Chinook,' or salt-water canoe, for two small shovel-nosed canoes. Leaving our Indians to manage this, we struck off on a trail to visit the 'ranch' of Mr. John Tennent, half a mile distant. He consented to join us, and was constituted our geographer and interpreter in chief. Scarcely had we rejoined our Indians when they hailed a couple of passing canoes, and had a 'wah-wah,' or friendly chat, which they commenced by shaking hands all round in a grave, business-

like manner. Our canoe was propelled against the stream at times by paddles, and at times by poles, and made about three miles an hour. This was slow progress, but we did not regret it, as the scenery became surpassingly beautiful. There were long rows of lofty cotton-wood trees, which at first sight reminded one of the English elm. The cotton-wood is sometimes called the balsam poplar. In spring, when the buds are breaking, the air is filled with the scent of it. Then there would be successive rows of pines in serried ranks, mingled with the cedar and broad-leaved maple, and relieved with the gorgeous crimson and Indian yellow tints of the vine maple and the hazel. The scene would then change; there would be next long reaches of alder and willow, indicating good bottom lands. Now and then the stately ranks of pines would be broken by some tall fir gracefully leaning forward with its arms, and sweeping the stream like some dishevelled beauty. Conspicuous among the arborage is the Menzies spruce (*Abies Menzii*), so called from its discoverer, Dr. Menzies, the surgeon of Vancouver's expedition. Its feathery foliage hangs down in delicate clusters, like lace upon a lady's jewelled arm. Coleridge said the birch was the 'Lady of the Woods;' and we would certainly rank the Menzies spruce as the 'Queen of the Forest.'

We took into consideration our final approach to the mountain. We had here to choose between the three forks of the river. The north fork is a whitish stream, showing that it is glacier-fed. By this we could have gone forty miles further; but owing to the numerous rapids in its upper part and the difficult nature of the country beyond, as discovered on my first journey, it was rejected. The south fork, which emerges from a sequestered leafy nook, looked very tempting. Its waters are gentle and limpid until they mingle with the turbulent main stream, and were suggestive of the peaceful current of youth before entering upon the toils and trials of manhood. It promised grateful repose after the difficulties of our previous journey. It seemed as if upon its easy surface we would have a breathing space before plunging into the desolate scenery around the base of the mountain. The south fork, however, would have led us out of the way; besides, Squock and Talum recommended the middle fork, alleging that a day's journey would bring us to the head of navigation, and that in the three days' land travel between that and the snow line we would find occasional elk trails, and reach a point where the ascent was more easy. This was the route chosen. Here we leave the outskirts of civilisation; our path henceforward will be through a howling wilderness tenanted by wild animals, through dense and trackless forests where the light of the sun never enters, across maddening torrents and precipitous rapids, and along overhanging precipices. We have to deal with Nature in her sternest aspects—torn and convulsed, at war with herself—bearing on her face the scars of countless ages of desolating power, of the flood of the avalanche, and of the burning tempest. Starting next morning at ten, our company was unexpectedly strengthened by one of Umptlalum's hunters. The toilsome fifteen miles beyond made us not sorry to quit the river. We had first three heavy portages, and afterwards twenty-seven riffles or rapids. Many hitches occurred, where the Indians got

out and lifted the canoes from the rocks on which they grounded. Our difficulties may be conceived when it is remembered that the river rises 285 feet in fifteen miles. Here we prepared for our land travel. Having taken out provisions for ten days, we stowed the canoes and their contents in a 'cache.' Cutting down some young alders, we fastened them across the trees, to form a framework. On this the provisions and other packages were laid, and covered with matting, while the canoes were thrust underneath. Care must be taken that the framework is fastened upon young trees that will not sustain the weight of a bear. Having made our packs as light as possible, we plunged into the forest along the bank of the river, in order to reach a ford some twelve miles up. With difficulty we made about a mile an hour, over fallen trees, under old logs, down steep ravines, over high rough rocks, and through close-set jungle. After reeling under our packs, knocking our feet against stones, and twisting our limbs among opposing obstacles, we came at last to a spot on the bank, which we named 'Camp Fatigue.'

Future travellers will find 'Camp Fatigue' where two gigantic pines spring up from one root, and a tributary joins the middle fork, which, being pure and limpid, was named by us 'Clear Water.' On the morning of August 12th we bade farewell to 'Camp Fatigue,' and kept along the bank of the river, the path being but a slight improvement upon that of the previous day. Mr. Tennent called our attention to a fern having a fibrous root, the young sprouts of which, if bruised, are good for wounds. We also observed a skunk-cabbage, a species of the tobacco plant, whortle-berries, red elder-berries, red huckle-berries, blackberries, thimble-berries, partridge-berries, a specimen of the mimulus, a solitary thistle with a fibre as strong as Manila hemp, and a water-dock, which opens first with a flower like the tulip, out of which afterwards spring the leaves. We also observed the beautiful *Adiantum pedatum*, or Canadian maidenhair, which, seen *en masse*, resembles the plumage of a bird, and in England can only be cultivated in conservatories. But the most lovely plant we had yet seen was a monopetalous one, which exactly resembled modelling in wax—both stem and flower being perfectly white. It was about four inches in height, the stem being somewhat thick in proportion to the flower; but unfortunately it turned perfectly black when put in the collecting-case. About five o'clock we came to a brawling stream tumbling into the river which comes down from the Lincoln glacier. We named it 'Roaring River.' The spot where we took up our quarters was in a grove of alders, and was named 'Camp Doubtful,' for here the Indian guides were at fault. Fearing that we might get too much to the east of the mountain, we despatched Squock and Talum next morning to reconnoitre. I occupied myself meanwhile in making a sketch of the camp; Stratton, Tennent, and Ogilvy went off prospecting and geologising; and the remaining Indians crossed the fork. By-and-by, Ogilvy, Tennent, and Stratton came in and stated that the region was a perfect chaos of rocks, thrown up in all conceivable shapes and sizes, consisting principally of lava, cement, and sandstone—no granite nor quartz, and no stratified rocks—nothing but loose gravel and dirt mixed with huge boulders, and everything seeming to be on the move when

the heavy freshets come down from the mountains. Stratton said that the river resembled a mining stream rushing madly along, and as muddy as the Yuba River, in California, during the excitement; but, though they tried several pans, did not get even a colour—they did not expect it. They would as soon prospect in a haystack for gold; for, so far as the indications went, the 'bed-rock' must be hundreds of feet below the surface. There were very few berries, and not a bird to be seen.

The day passed by, and we were anxiously concerned in regard to Squock and Talum; but they returned late in the evening, and reported that they had reached a spot above the snow line by a path that was comparatively easy to find. They brought in a couple of marmots, which they demolished at supper. Wearied with fatigue, my companions sought their blankets, and 'left the world to darkness and to me.'

As foemen eager for the fight, we started early on the 13th; and if our path was steep and full of toil, we were cheered by noting our progress through the different zones of vegetation corresponding to the varied seasons. Passing from summer, a few hours brought us to the region of eternal snow. The camp behind us was 1,916 feet above the sea level, as determined by the aneroid. From that to 3,900 feet was the temperate region, where berries were found and the sal-lal plant. At this elevation ground vegetation ceased, although the hemlock, the spruce, and the fir remained. Indeed, we here passed through a magnificent forest of firs, extending as far as the eye could reach. They ran up a hundred feet without a limb, and on the northern sides were covered with moss. The indications showed us that the snow in winter reached eight feet above their base. We began to experience cold whenever we rested. The day was foggy, and the gloom, added to the labour of 'packing,' made it very depressing. As we continued up, the trees diminished to half their size, and the ridge became narrower and narrower.

The ridge became at last only five yards broad. Here there is a vast basin about a mile and a half in diameter. It descends precipitously in a succession of benches to a depth of perhaps 2,000 feet. The sides of the basin were lined with limestone and slate, with outcroppings of a cement rock—a mixture of sandstone and limestone, the latter predominating. These were strewn with pebbles, showing that the country had been submerged to this point in some former age. On the sloping sides of the basin were patches of snow, the first we had observed. This spot, which may be taken as the snow line, was 5,175 feet above the sea level. We had intended to make our encampment at the summit of this ridge, close to the ice-fields opposite the Lincoln Peak; but the fog increasing, and all being fatigued, we halted and sent the Indians forward to look for water, having been in a state of extreme thirst for several hours. In half an hour they reported the discovery of water. We followed up, and found an admirable camping spot, where there was an open space covered with grass and clumps of small balsam firs. In one of these clumps, where we found traces of the elk and the bear, there was a snug nook, sheltered all round, save

an opening to the north. Across this we placed a large ground-sheet that I had fortunately brought along, and lighted our fire within. This corner, which was only just large enough to accommodate the party, looked very pleasant, and received the name of 'Camp Hope.' But, alas! the water of which the Indians had boasted proved to be a muddy mixture from a marshy spot in the vicinity. Thirsty as we were, we could not drink it. After waiting a while the fog partially cleared, and we despatched the Indians down into the basin beneath us with every available pot and pan; and at a depth of 500 feet they found a stream formed by the melting patches of snow. During this delay we were cheered by observing that the clearing of the fog had revealed two magnificent rocky peaks, or 'aiguilles,' as they are termed in Switzerland, to which we gave the names of 'Lincoln' and 'Colfax.' While walking around we saw large patches of Scotch heather and blue-bell still in bloom, and plenty of lupins. The Indians having brought in the supplies of water, we had our tea made, and turned into our blankets, being, like Mohammed's coffin, between earth and heaven. In the night the noise of the falling avalanches frightened the Indians, and ever and anon they crossed themselves.

Next day, August 15th, the fog was still dense; so, acting on the proverb that we might go farther and fare worse than at Camp Hope, we remained there. Ogilvy, Tennent, and three Indians went out shooting, while Stratton and I kept camp, doing sundry repairs, posting our diaries, etc. About five o'clock they returned, with four marmots, as they are termed in Switzerland, but known in these parts by the name of ground-hog or wood-chuck. While sketching, I often heard their squeak, and saw them lurking around. They are greyish in colour, about  $1\frac{1}{2}$  feet long, and have two long incisors in front of each jaw. The largest secured on this occasion weighed twenty pounds. They had also shot a species of rabbit.

On the morning of the 16th we found the fog had cleared away. The summit was now seen for the first time, lying to the north of the two peaks already mentioned. I called my companions, and directed their attention to the path I proposed to take. From this point it looked fearfully precipitous, and they doubtfully shook their heads. They followed up, however, and shortly afterward there was presented a magnificent view of the Red Ridge, with its glaciers cradled in its arms, which greatly resembles in outline the 'Aiguilles Rouges,' as seen on the north side of the Valley of Chamouni. It is separated from Mount Baker by a pine-covered ridge extending at a lower altitude, and distant perhaps ten miles. In its hollows are three small glaciers of the class termed by Professor James Forbes 'secondary' or 'rudimentary.' As we neared the snow-fields the ridge which we were keeping became broader, the trees became dwarfed into shrubs, and in the 'open' there were gentle slopes covered with grass, and occasional patches of snow in the hollows. These grass-covered slopes were strewn with flowers. We found the lychnis of a beautiful red colour. Although in California it grows to the size of a soldier's cockade, here it was very small. There were also the lupin (so plentiful in Vancouver Island), daisies, and other flowers. They were all good illustrations of Darwin's theory

of natural selection, having short thick stems to enable them to withstand the storms of their exposed situation, and at first sight appeared different species.

In rather less than two hours we reached our last encampment near the 'névé.' The ridge was still covered with scattered balsam firs of stunted growth. We encamped on a spot 7,054 feet high, where the trees formed a semicircle round a small volcanic rock which served us for a fireplace. The ground was covered with grass and heather, and sheltered by the trees from the cold winds of the glaciers. To the south-east was a vast snow-field, stretching perhaps 2,000 feet beneath, and terminating in a glacier. Below this glacier, and only separated from it by 'moraines,' lay a lovely valley, with open land covered with grass and sheltered by pines. It wanted only a 'chalet' or two, a flock of goats descending the hill-side, with the sound of tinkling bells, to make me believe that I was in Switzerland. Many valleys have I seen, but this was the best illustration of 'Beauty sleeping in the lap of Terror.' Away thousands of feet above the snow-field, rose on every side black, jagged, splintered precipices. Of these the Lincoln Peak is from this point of view the most prominent. A little further east is the Colfax Peak, and beyond that, due east, is the summit itself. The ridge on which we were encamped is two miles in length; it sweeps first round to the north, then to the east, intersecting another ridge running down from the Colfax Peak. These ridges may possibly be the walls of an extinct crater, whose vast hollow is some two miles in length by about the same in width. At the point of intersection of the above-mentioned ridges, but beyond it (a vast field of névé filling the intervening space), rises the great peak, entirely snow-covered.

Next morning we started at five, and about half-past six came to the end of the ridge (about two miles). Here we put on our creepers and spiked boots, made several packs, and took provisions for twenty-four hours. In fact, we prepared to pass the night out if need be. The Indians bade us farewell, and were observed to cross themselves and to utter prayers for our safety. No sooner had we launched forth than a division of opinion took place. Acting on my old rule in the Alps, always to follow the 'arête' when practicable, I was for following a ridge which leads to the Colfax Peak. Mr. Stratton, with genuine Yankee 'goaheadness,' and a happy ignorance of the dangers of concealed crevasses, and the frailties of snow bridges, started on a track of his own which he had marked out on the previous day. Not having a veil, he adopted the custom of the Cascade range Indians when travelling on the snow, and blackened his face—particularly around the eyes—with a piece of burnt stick. He thus appeared very much like an Ethiopian serenader. Although alarmed for his safety, I could not refrain from the mirth his appearance occasioned. I was obliged to compromise with the others and descend on the snow. We then roped ourselves together, and left the ridge, keeping twenty-five feet apart. We went up an elevated valley—possibly an extinct crater—filled with névé, and terminating in two glaciers. The first of these, which is covered with dirt, and scarcely recognisable as a glacier, lies on the northern side of the valley under a ridge which appears to lead directly

to the summit. It looked so practicable that on the occasion of the previous journey I at one time entertained the idea of trying it, but after surveying the vast extent of treacherous *névé*, intersected with numerous *crevasses*, which we should have to traverse, thought, in the weak state of my forces, it would not be advisable to trust it; and it was fortunate we did so, for on reaching the summit we observed that the ridge was covered on the other side with overhanging '*séracs*;' and on leaving the mountain, as our route lay on that side, we could, with the aid of a glass, see that it looked very formidable. The ridge which joins the Colfax to the summit crosses the head of this elevated valley. We made for this. The route lay through more than five miles of *névé*. This was intersected by at least twenty-seven great *crevasses*. These were so close that sometimes they were not more than five yards apart. No sooner had we crossed one than we saw another. Their depths displayed those beautiful colours with which Swiss travellers are so familiar. The lovely mazarine blue prevailed. We crossed them by the bridges formed by avalanches which had fallen in the spring and early summer. We did not dare to trust these entirely, but, as a precautionary measure, kept firmly attached to each other by the rope.

To avoid the avalanches descending from the Colfax Peak on the one hand, and from the 'Grant' or main peak on the other, we kept on through the middle of this vast tract of *névé*. We were in considerable anxiety concerning Stratton. Divested of rope and without a pack, he had made rapid progress. At one time we saw him crossing a spot exposed to avalanches of ice, and shortly afterward were greatly alarmed to see him take a jump, and then suddenly disappear, being lost to view behind projecting masses of *séracs*. It appears that he had fortunately fallen in with the tracks of a grizzly bear, and wisely concluding that what would bear its weight would sustain his also, he had followed it without hesitation across snow bridges over the chasms. On the previous journey, about the same height, Mr. Bennett and myself observed the traces of a young elk followed by a wolf, and also the marks of blood where a scuffle had taken place. Our anxiety was at last relieved by finding Stratton's footmarks at the very spot where we expected to cross his track. Above this, the slopes of snow became very steep as we approached the shoulder of the main peak.

Soon after we had reached the shoulder leading to the great peak we came to a narrow ridge, about four feet in height, composed of reddish *scoriae*. From this point we saw a glacier flowing down through a deep and narrow gorge on the southern side of the Colfax Peak, having its origin in the snows of that peak. We were also able to see the head of another glacier, extending in an easterly direction, and fed by the snows of the Grant or main peak.

Having now reached this spot, about 9,265 feet above the sea level, we found it necessary to refresh. Ogilvy pounded some ice, and, with the aid of brandy, made a cocktail; it was very acceptable, and was christened the 'Mount Baker Cocktail.' Its fame reached Victoria, where it was reproduced at one of the bars, and, aided by the exhibition of a veritable piece of rock from the summit, attracted thirsty crowds. I had brought an alcoholic apparatus, which was filled with snow, and

some tea prepared; fortified by this refreshment and an hour's rest, we made for the top of the saddle by the northern side of these rocks. Like gladiators of old, we prepared ourselves for the combat by divesting ourselves of every superfluous article of clothing. The slope was steep, and there were crevasses immediately below. A single false step would probably have been fatal.

The last three or four hundred feet of this shoulder consists of a deposit resembling mud, quite dry in parts, and cracked from the action of the sun. At length we reached the top of the saddle, and stood on the base of the principal peak. Here we found Stratton, who informed us that, when dozing, a large eagle had swooped down upon him with murderous intention; he had succeeded in beating it off before it did him any injury. If we had indulged any doubt of this being a volcanic mountain, it would have been dispelled by the smell of sulphurous exhalation which greeted us. So nauseous was it that Stratton had vomited while waiting for us.

At this point the base proper of the peak may be said to commence. On our right, across a hollow filled with *névé*, is the lip of the crater, indicated by a huge triangular-shaped rock; and on our left are tremendous precipices extending down to the track of *névé* we had traversed in the morning. Around the summit of the peak is a perpendicular wall of ice, about thirty or forty feet in height, terminated on the left or northern end by a knuckle of rock, which can be plainly seen from the Sound. The only passage we could discern through this barrier was on the left, between the knuckle of rock before mentioned and the wall of ice. The peak rises about 1,000 feet above the saddle; its face is scored with deep furrows made by the masses of ice which have fallen from the crowning 'corniche.' It commences with a gentle slope, and gradually becomes steeper, until near the summit it is about 60°.

Roping ourselves together, we now attempted this, and soon found it necessary to use the axe. Some fresh snow had fallen, but had not had time to become consolidated with the ice beneath, and could not be trusted. We had thus to cut steps. The axe was passed on to Stratton, who plied it with vigour and skill. While thus engaged he got a great fright. Having heard a dull, grating sound, he looked up, and saw a mass of frozen snow, about twelve feet square, moving down toward him. Paralysed with terror, he was about to warn us, when it fortunately stopped. Even at this height there were crevasses. Into one of these Tennent sank, but he managed to extricate himself. The work of cutting the steps is very severe, and our progress was necessarily slow, for some 350 required to be cut. When nearing the summit we saw the spot where Mr. Bennett and myself were stopped on the previous attempt—on the right, at the foot of the perpendicular wall. Here we turned a little to the left, in order to make for the passage before spoken of; and in cutting a step Stratton disclosed a little stream of water. The day was very warm, and our labour made us thirsty; so the cup was joyously passed, and we all had a refreshing drink. As precipices extended downward from our feet, a single false step would have been fatal. In safety, however, we passed the most dangerous

point, and reached the passage, which, by a gentle ascent of thirty or forty feet, brought us to the summit. It was now four o'clock. We had been two hours making this final climb. The plateau on which we stood was about a quarter of a mile in diameter, and embraced an extent of about eighty acres. The scene was grand in the nakedness of its desolation. The white surface of snow was unrelieved by a single rock. The forests had been on fire for weeks, and a dense pall of smoke veiled the surrounding scenery from our view. It lay like a reddish cloud beneath us. We felt cut off from the world we had left. Overhead the sun poured down his bright beams from a sky which formed a dome of purplish blue, unsullied by a cloud.

There was a peculiarity in the snow which covered this plateau that I have not observed in the Alps. In form it resembled small tongues of flame, all leaning in the same direction, and was evidently caused by the violent eddies of wind. It seemed as if there was some mysterious sympathy between the volcanic fires within and the snowy surface without.

The only object that broke the monotony of the scene was another and smaller peak, at the distance of about 500 yards. As it was possible that it might be a few feet higher, I proposed that we should also plant a flag there. We accordingly marched up to it, and placed a flag, naming it after General Sherman. We found, however, that they were both of the same height—10,613 feet. It may be mentioned that this height, determined by the aneroid, agrees substantially with the trigonometrical measurements made by Captain Lawson, of the United States surveying-ship 'Fauntleroy' (10,814 feet), as also with those set down in the English maps (namely, 10,694 feet). The thermometer stood at 40° above zero Fahrenheit.

While making these observations with the barometer, and sketching the two peaks, my companions left to make a reconnaissance. They approached the southern side of the Sherman Peak, and, observing a slight depression, ventured down. Here they got a glimpse of the crater. As far as they could make out, it was about 300 yards wide, and appeared to extend under the north-eastern side of the Grant Peak. It is therefore not impossible that the greater part of this peak may disappear in the next eruption. Stratton described the spectacle as one that made him shudder—black walls of rock with streaks of sulphury yellow blending with green and red. No traces of fire were visible by daylight, but smoke was plainly observed. About 300 feet of the top of the crater on the Baker River side is torn out, and here vast masses of lava have rolled out—wave after wave overlapping each other as it cooled. Fire must still be slumbering beneath, as there is no snow on the lava.

My companions returned about five, and hurried me off before I had an opportunity of inspecting it personally. Indeed, as there was no time, unless we spent the night upon the summit, they concluded not to tell me of their good fortune.

Harnessing ourselves together with the rope, we prepared to descend. Each step had to be well considered, but we passed the most dangerous spot in safety. The sun had considerably melted the snow, so that we

were able in many places to let ourselves slide down. In a comparatively short time we arrived at the spot where we had left our 'impedimenta.' These we took up, and continued our journey. The sun was already sinking, so that we had no time to lose. Urged by the fear of having to pass the night on the mountain, we plunged after Stratton down slopes, across snow bridges, by walls of ice, as if pursued by a fiend. Vain were my remonstrances, fearful of an accident, but my companions hurried on in a manner that would have sent a Swiss guide into fits. Such a helter-skelter mad-brained party was never seen on either Mont Blanc or Mont Rosa. The sun set, twilight came on, when suddenly we could no longer discern our tracks of the morning. In the labyrinth of crevasses and séracs around we could not make out the route. Calling a halt, a consultation was held. We resolved to retrace our steps, and the tracks were again discovered. In the feeble twilight, the spot on the ridge we had left seemed ever to recede. Overcome by fatigue, I would fain have made my couch on the snow. But my companions pressed me on, and about nine o'clock we reached the ridge at the point where we had taken to the snow in the morning. Leaving there our packs for the Indians to pick up in the morning, we made for our last encampment. Stumbling over the angular rocks as well as we could in the dark, our progress was very slow. As we approached, we shouted out, when the Indians made a great blaze. At length, about eleven o'clock, we got in. The Indians were overjoyed. What with the injunctions of Umptlatum and their own superstitions, the honest fellows had felt considerable anxiety on our account. Tea was soon made, and over the flowing bowls we recounted our adventures to the Indians. We had no sooner turned in than the weather changed. The wind moaned and blew in fitful gusts, telling of the coming tempest. It was very cold, and, as we turned round in our blankets, we felt thankful that we were not on the mountain.

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#### THE PASSAGE OF THE SESIA-JOCH FROM ZERMATT TO ALAGNA BY ENGLISH LADIES.

MR. BALL, writing in 1863, referred to the first passage of the Sesia-Joch by Messrs. George and Moore, as 'amongst the most daring of Alpine exploits,' and expressed a doubt whether it was not a *tour de force* which would never be repeated. Mr. Moore, indeed, repeated his exploit with another companion, but he was for many years unsuccessful in inducing anyone else to follow in his footsteps, and both guides and mountaineers seem to have shared the doubts of Mr. Ball as to the route being one fit for ordinary use.

The members of the Alpine Club heard, therefore, with some astonishment that in the autumn of 1869 two ladies had not only crossed this most redoubtable of glacier passes, but crossed it from Zermatt to Alagna, thus descending the wall of rock, the ascent of which had until then been looked on as an extraordinary feat for first-rate climbers.

The details now in our possession leave no room to doubt that the