PEAKS, PASSES, AND GLACIERS.

CHAPTER I.

THE PASSAGE OF THE FENÊTRE DE SALENA, FROM THE COL DE BALME TO THE VAL FERRET, BY THE GLACIER DU TOUR, THE GLACIER DE TRIENT, AND THE GLACIER DE SALENA.

The Glacier du Tour is perhaps the least generally and the least accurately known of the great ice-streams which descend on the northern side of the chain of Mont Blanc. It lies in so deep a recess, that its existence is scarcely suspected until the traveller is brought opposite to the opening by which it flows into the valley of Chamouni. The parts of the Tête Noire and the Col de Balme from which alone it is visible to the ordinary tourist are so near to the glacier, and the last slope over which it descends is so long and so steep, that even a careful observer could form no idea from below of the vast extent of its upper portion. It may be owing to this circumstance that it has tempted the curiosity of very few explorers. The passage I am about to describe was discovered many years ago by a man of the name of Munier; but, if I am correctly informed, it was never attempted again till the year 1850, when it was made by Professor Forbes, as related by him in a very interesting chapter appended to his "Norway and its Glaciers." From that time till the year 1857,—the date of the expedition recorded in the following pages,—I could not learn that the passage had been taken by any one. It has since become better appreciated; and in 1858, two or three parties ascended the Glacier du Tour, and descended to Orsières either by the Glacier de Salena or by the Glacier d'Orny.

The Glacier du Tour is the most eastern of the glaciers of Mont Blanc descending into the valley of Chamouni. The great system of crags which closes up the head of the glacier may be roughly compared to the nave of a wheel, from which the four glaciers of Le Tour, Trient, Orny, and Salena, are the radiating spokes: with this qualification, however, that the glaciers of Trient and Orny, which lie to the east of the Glacier du Tour on the one side, and of the Glacier de Salena on the other side, of the main chain, have a common origin in a vast snow-field from which the first descends rather to the east of north, and the second nearly due east. The Glacier du Tour keeps a general direction towards the north-west, while that of Salena, which is more sinuous, is turned a little to the south of east. It follows from this arrangement, that, while the lower extremities of the four glaciers are widely separated, they approach very near together in the upper region where they originate. It is not, however, so simple a matter as might be supposed to pass from the Glacier du Tour to that of Salena. The Glacier du Tour, the twin system of the Trient and Orny, and the Glacier de Salena, are all on different levels; the Glacier du Tour being much the highest of the three, the head of the Trient occupying an intermediate level, and the Glacier de Salena being much lower than either. There is a difference of probably not less than 1,000 or 1,500 feet between the level of the highest plateau of the Glacier du Tour and that of the portion of the Glacier de Salena which lies immediately behind the rocky boundary separating the two; and the precipitous nature of the southern face of the dividing range (above the Glacier de Salena) forbids all thought of passing directly across it. The only known passage is by the head of the Glacier de Trient, which must be reached by descending from the high level of the Glacier du Tour. At the very furthest recess of the Glacier de Trient, where it runs up into a little corner and insinuates itself between the two glaciers of Le Tour and Salena,—elsewhere separated only by an inaccessible wall of crag, the common boundary of both,—a narrow opening, which I have ventured to call the Fenêtre de Salena, gives a romantic access to the still lower level of the Glacier de Salena. A shorter descent to Orsières may be effected by leaving the Glacier de Salena altogether out of the question, and turning eastward as soon as the Glacier de Trient is reached. From half an hour's to an hour's walk over swelling snow-fields then brings you to the head of the Glacier d'Orny, and

Orsières lies almost beneath your feet. But to my mind, though the expedition is longer and more laborious, the attractions of the Salena route are far greater. At the time I first visited the Glacier du Tour, in 1857, it was supposed to be necessary to ascend quite to its highest portion, and to gain the Glacier de Trient by the very difficult descent I have here described; but, in 1858, an old friend and myself discovered a far easier passage through a gap in the chain of the Aiguilles Dorées, between the Aiguille du Tour and the head of the glacier, by which all danger or difficulty is avoided, and a very beautiful view of the Swiss Alps is gained. I should not conclude this rough topographical notice without saying that it appeared to myself and my companions of 1857 to be just within the limits of possibility that another passage may be found to the Glacier of Salena from that of Le Tour; but it can hardly be an easy one. As we all thought, from the very imperfect and hasty survey we had when descending the Glacier of Salena, the latter glacier runs up in a kind of deep inlet at the back of the Aiguille d'Argentières; and as we had observed that the rocks might be scaled without any great difficulty at the south-west angle of the Glacier du Tour, which adjoins the south-eastern buttress of the Aiguille d'Argentières, it occurred to us that it might be possible to effect a descent by the other side to that recess of the Glacier of Salena of which I have spoken. This, however, so far as we are concerned, is only conjecture; but the attempt is worth making, as the relative positions of the several glaciers and ridges of this portion of the Mont Blanc chain are but imperfectly known, and most incorrectly laid down on all the maps hitherto published.*

After waiting at Chamouni two or three days, hoping for weather fine enough to enable us to ascend Mont Blanc, finding that the barometer continued obstinately below "temps variable," and getting tired of expectation and inactivity, we resolved to attempt a somewhat less lofty expedition, and after discussing various plans, determined to see how the weather would serve us for the passage of the Glacier du Tour. Fortunately for us, Auguste Balmat, who was again my guide, was one of the few persons who had made the passage, having crossed the col seven years before, in company with Professor Forbes; and the pleasure with which he looked back on that expedition, and the praises I had always heard him bestow upon the great beauty and grandeur of the scenery, had

* See Note at the end of this Chapter.

long excited my curiosity, and given me a strong desire to explore this wild and unfrequented region. Accordingly, on Monday morning, the 24th of August, 1857, we set off for the Col de Balme, intending to sleep there that night, and start for the glacier at two or three o'clock in the morning. The weather was anything but inviting; the wind blew a hurricane; the Monts Maudits and the whole of the Grand Plateau were covered with a dense mist of powdery snow. The Glacier de Taconnay, almost as high as the Grand Mulets, was dusted over with the dirt blown from the rocks. The Glacier des Bossons was dirtier than I ever saw it before, and when I walked up after breakfast to Balmat's cottage, a few hundred yards above the church at Chamouni, it was at times with difficulty that I kept my legs. With all this, the air was so close and sultry, that walking, even at a very moderate pace, was an unpleasant exertion. However, we had so often had occasion to observe that fortune smiles upon the brave, that we set off, five in number—R., W., and myself, Auguste Balmat and François Cachat—nothing daunted by these unpromising appearances, and arrived in due time at Argentières. The aspect of the weather grew worse every hour, and the good folk of Argentières prophesied our speedy return. Before we arrived at the Col de Balme, heavy rain had set in all along the valley of Chamouni, and soon after we reached the little hostelry, an impenetrable mist came rolling up from the valley of Trient, shrouding in its cold grey folds every part of the prospect; the barometer fell still lower, and everything looked as badly for the morrow as it could do. We managed, nevertheless, to pass a very pleasant afternoon, and went early to bed that we might be ready for the weather as soon as it was ready for us. The wind was still so strong that I was obliged to have the outside shutter fastened to keep the rain out, so that I could see nothing; but, throughout the night, whenever I awoke, the soft and constant dripping of the water from the eaves told me that there was no change for the better. I had slept two nights at the Col de Balme, some ten days before, intending to make the same passage, but had been driven back to Chamouni by finding, when I awoke on the 16th of August, eight inches of snow on the ground, and I began to think the present expedition was doomed to a like unsuccessful termination.

We rose at six, with little hope; but just as we were finishing breakfast, one of those strange transitions took place which are

not uncommon in mountain countries; and in a few moments the dreary cloak of mist was gone, no one knew how or where, and the eye ranged freely over the great aiguilles and glaciers of Mont Blanc, and over the green pastures of the valley of Chamouni, from the Col de Balme to the Col de Vosa. The change was as transient as it was rapid; a few seconds more, and all was wrapped again in the wreathing mist; but our hopes had been raised, and encouraged by the momentary glimpse of better things, we soon procured the necessary supplies and prepared for a start. It was just eight o'clock when we bid adieu to the landlord, and left our homely, but clean and hospitable, quarters for the trackless waste of ice and snow which lay between us and the next human habitation we should see. In a few seconds we lost sight of the house, and were picking our way through the fog, towards the base of the heights which rise to the south of the Col de Balme and form the termination of the eastern boundary of the Glacier du Tour. Things began to look badly again, when suddenly the mist was rent into shreds before us, and almost over our heads we beheld the sharp summit of the Aiguille Verte, covered with the fresh snow of yesterday, and glittering with a thousand diamond points in the unclouded sunlight of that upper world. We joyfully accepted the vision as the earnest of a glorious day, and turned with quickened steps and more cheerful anticipations to face the short but rapid ascent that brought us, through alternate gleams of sunshine and shades of mist, to the edge of the precipices guarding the Glacier du Tour. Here we looked down upon a broken cataract of ice a thousand feet below us, streaming over the steep ridge that forms a sharp line of separation between the upper region of the glacier and the stupendous masses upon which the traveller gazes as he skirts the hamlet of Le Tour, on his way from Chamouni to the Col de Balme. We lingered here a few moments, and while doing so the mists cleared swiftly away, and disclosed to our wondering eyes a vast series of plateaus, swelling domes, and steep banks of ice, stretching back from the point above which we stood to the origin of the glacier, a distance of many miles. A glance showed us that no easy task lay before us; for although the general direction was not difficult to be distinguished by the practised eye, at each considerable change of inclination in the surface of the glacier a formidable system of deep and yawning crevasses seemed to deny access to the more practicable regions beyond. In the middle of

the glacier the crevasses were of unusual size and difficulty, and extended in a nearly unbroken series high up into the loftier regions of the *névé*. On the opposite side of the glacier, a long wall of serrated rocks, in which numberless aiguilles shoot from amidst the buttresses of ice, and rise in rugged majesty to the sky, forms a stupendous and perhaps impassable barrier between the Glacier du Tour and that of Argentières. We saw it clad on every ledge and slope in its mantle of fresh-fallen snow, and glittering with a lustre almost insupportable to the unprotected eye, which warned us that the sun was already high, and that we had no time to dally if we would sleep beneath a roof that night. We therefore descended as rapidly as the necessity for some caution would permit, and in a few minutes reached the level of the glacier. We kept along the edge, clambering over the rocks as far as it was prudent to do so; but it was not above half an hour before we were obliged to quit them, and take to the ice.

The brilliancy of the atmosphere, and the lustre of the new snow, made it advisable to have recourse at once to our spectacles and veils, and those of us who had them took advantage of the halt to put on their gaiters. We began by climbing a steep bank of frozen snow, dirty at the bottom, but bright and pure as we advanced, and thus marking the limit to which yesterday's fall had descended. Arrived at the top of this incline, we saw that the only practicable path must be over a vast dome of snow-clad ice, at no great distance from us, and lying immediately at the base of the Aiguille du Tour, which rose in imposing masses on our left. The base of this dome was guarded by an intricate network of formidable crevasses; but, these once past, the unbroken surface beyond seemed for some distance to promise an easy advance. There appeared to be a double system of crevasses beneath the dome, the smaller immediately in front of us, the larger more to our right, and forming part of the great central system of crevasses which, throughout the lower part of the glacier, made progress in that direction impossible. As is very often the case, where these two systems approached one another the crevasses were somewhat broken, and it seemed likely that bridges would be formed by the falling in of their walls. Accordingly, we descended into a kind of little valley, making our way somewhat to the right, and further into the glacier, in order to profit by the junction of these converging ice-streams. Here, though not without some little difficulty, we effected a passage

among the huge abysses on either hand, whose dark blue depths contrasted well with the spotless white of the fresh snow of the upper world. We now began a gentle ascent, winding round the base of the dome, but had not advanced far before we began to find ourselves seriously embarrassed by the multitude of dangerous crevasses which lay like pitfalls in our path, completely hidden by the new snow, now many inches deep. We found that we were amongst a system of crevasses lying longitudinally in the direction of our route, whose existence the gentle inclination of the glacier would scarcely have led us to suspect. We therefore turned to the left, and climbed some distance towards the top of the dome, crossing many a crevasse over which it was prudent to pass, not so much on our hands and knees as crawling "au ventre," with the alpenstock laid lengthwise in the snow still more to distribute the weight.

Higher up we advanced for some distance without any great difficulty, till we were again brought to a stand by a most formidable set of crevasses, which threatened at one moment to forbid our further progress. They lay on the further side of the dome, just as we wanted to descend slightly into a magnificent hollow at the foot of a steep and lofty curtain of snow, by which we were to ascend to the highest plateau of the glacier. We had several times been obliged to take to the lying-down process, but at length we came to a crevasse of such width—as ascertained by sounding with the alpenstock—that we dare not attempt it, even on our faces. When we followed it up in one direction, feeling our steps with our sticks, along its edge, we found it still impassable, and fresh crevasses opening on the other side of us, so that we were upon a mere tongue of ice, with a hidden gulf on either hand. When we sought a passage in the opposite direction, we found the crevasse growing wider. When we turned to the right, to descend the side of the dome, and seek a passage lower down, we found ourselves stopped by a new crevasse, so wide that even through the thick covering a certain slight sinking of the surface, exposing a few inches of a broken crust of frozen snow, showed what we might expect in that direction. We were forced to turn back, and retrace our steps for a considerable distance, before we could find an exit from this perplexing labyrinth. At length we succeeded in quitting the dome and entering upon the basin beyond it, where we found the ice tolerably compact and safe. We were now well past the Aiguille du Tour, and saw that on our left a broad and deep gap

in the chain of aiguilles seemed to offer an easy passage to the Glacier de Trient. I have since ascertained that this opening affords far readier access to the head of the Glacier de Trient than the route we actually took.

Balmat and Cachat were both well laden, and had had a good deal of work while we were extricating ourselves from the crevasses, so I insisted, at this point, on taking the lead of our procession. As soon as this change could be effected, we struck across the glacier, directly towards the Aiguille d'Argentières, which towered high above the steep bank of ice we had to ascend. To our surprise, no *bergschrund* appeared to run along the base of this *arête*, and the top was reached without any difficulty. We were all very much impressed with the grandeur of the upper end of the Glacier du Tour. Of all the countless aiguilles, named and nameless, which rise in rugged majesty throughout the whole range of Mont Blanc, and constitute so curious and characteristic a feature of the Mont Blanc scenery, few are to be compared with the Aiguille d'Argentières. It is not only of great elevation, towering far above any neighbouring summit, but is remarkable for the ruggedness of its sides, and for the number and varied aspect of the glaciers which literally stream down its base, while above, it is broken into fantastic and inaccessible precipices, or clothed with a glittering mantle of snow. These upper slopes are ploughed by the frequent fall of avalanches, and crowned by the sharp peaks in which the aiguille terminates, whose sides are spotted with irregular patches of white, almost to the very summit. Beneath its base, the glacier rises and falls in scores of great ice-domes, like swelling waves, separated the one from the other by crevasses of enormous size. Their dark shadows break up the glistening surface, which shines like a sea of diamonds in the noonday sun. To the left of the aiguille, just at the south-west corner of the glacier, and beyond this maze of ice-works, is a gap in the serrated ridge, so like a col that one is tempted to make for it. That col is unexplored. We fancy it must lead either over to the Glacier d'Argentières, or perhaps more probably to a wild recess of the Glacier de Salena, whose opening we noticed from the other side of the pass, but of which the further end was hidden from our sight.

To the left of this col was a long and lofty ridge of mingled rock and snow, the southern boundary of the Glacier du Tour; it is

depressed at its eastern extremity to what looked like another very passable col, for which almost any one unacquainted with the pass would have made. Later in the day, however, we saw what tremendous precipices of naked rock we should have found beneath us, had we gained the crest of this ridge. Immediately to the left of this depression, and occupying the south-east angle of the glacier, was a fine massive aiguille, towards the base of which we now turned, and pursued our still ascending way. The snow was deep and softened by the mid-day sun, and at every step we sunk above our knees. The labour of making the steps, under such circumstances, it is impossible to conceive without having tried it; and I was not at all sorry, after half an hour's experience, to give up the post of honour to some one else. Much caution was still necessary, for we were not yet out of the region of hidden crevasses. It was two o'clock before we reached the base of the nameless aiguille I have mentioned, when we descended into a deep chasm between the glacier and the aiguille, in order to avail ourselves of the boulders and rocks which lay along its side. In the bottom of this wild valley we toiled our way, still rising at every step, till about twenty minutes after two we reached its highest point, and suddenly found ourselves gazing down upon the vast expanse of the upper part of the Glacier de Trient, apparently unbroken by a single crevasse; one swelling sheet of spotless white, marked only by the long track of a chamois, leading straight up to a narrow aperture in a huge wall of rock, through which we were to pass.

The Glacier de Trient was many hundreds of feet below us; and the problem was, how to reach it. We stood at the edge of a slope of nearly bare ice, too steep to slide down, and clothed with too little snow for that to help us. This ridge extended right and left, in an amphitheatre, whose diameter, measured from the gap where the chamois had crossed the chain to its extremity in the other direction, was about half a mile. Magnificent as was the weather, and clear as was the sky on the side of the Glacier du Tour, the mist hung so thick upon the Glacier de Trient that we could hardly tell how to approach it. When Balmat had made the passage before, they had been able to execute a glissade, and had thus descended in a few moments to the glacier beneath. The state of the snow now forbade any such pleasant and easy progress. Opinions differed: I was for turning to the right, and attempting

a diagonal descent along a face of rock and snow—the back of the aiguille whose base we had been skirting. Balmat and Cachat, on the other hand, advised that we should make a steep and rapid ascent in the other direction; and, gaining the level of the Glacier du Tour, from which we had descended into the hollow, should continue along the edge of the steep *arête* which raised it above the Glacier de Trient, till we reached the extremity of the amphitheatre. Here the direction of this boundary wall to the Glacier de Trient took a sharp turn to the north. The actual line in which these two steep walls of ice met (the one running westward, the other northward, from the line of junction) presented, of course, a more gentle inclination than either of the walls themselves, just as the slope at each corner of a square earthwork would be less than down either of the sides. By this pointed ridge, they thought we might best descend to the Glacier de Trient: and, though I did not much like the look of the place, I yielded at once to their greater experience.

We found some rocks jutting out here and there along this ridge, which greatly facilitated our progress. It was, however, a matter of considerable difficulty, for the ice was hard and very slippery, and the snow not deep enough to be of much service. The descent that lay before us was the nearest approach to the last *arête* of the Wetterhorn that I have ever met with. After breaking through an overhanging cornice of frozen snow, we began our descent with much caution, making free use of the ropes. After a while we came to two rocks, about fifteen or twenty feet apart, each upon the very edge of the ridge, which was here somewhat more deeply covered with snow. Balmat and I were the first, and we thought we might venture to slide from one rock to the next, and so avoid the labour of step-cutting, and the tedious precaution of using the ropes. *We* reached the lower station in safety; but R., who came next, lost his direction, and was going over to the left, down a fearful slope of ice three or four hundred feet high, too steep for us to see in what it ended, but separated, in all probability, by a *bergschrund* from the Glacier de Trient; for we found one at the foot of the gentler slope on the right. It was a terrible moment, as there was only one chance. It was utterly impossible for him to stop himself, or for either of the men to help him. Balmat was already some distance below, cutting steps, and Cachat was engaged with W., twenty or thirty paces higher up. R. showed

great presence of mind. He did not utter a word, but threw himself on his right side, so as to pass as near to the edge as possible, and stretched out his arm for me to grasp. Fortunately he passed just within my reach, and I was able to catch his hand and arrest his progress, otherwise it might have been a very sad day for all of us. I think both our hearts beat quicker than usual for a few moments; but R., with great prudence and forbearance, said nothing that could shake our nerves, and sat down quietly against the stone, while I set to work and cut a set of steps, by which W. and Cachat descended without the risk of a similar mishap.

We were still, however, a long way from the bottom of the slope, and could not see what lay beneath us at its foot, but nearer the head of the glacier a great *bergschrund* separated the steep bank of ice, on part of which we stood, from the more level surface beneath; and, as this appeared to grow wider as it approached us, it was deemed advisable to cut a descending path along the side of the *arête* towards the narrower part of the crevasse. We had but one ice-hatchet, so that one man only could work at a time; and the rest of us sat down upon a block of stone to partake of the first food we had tasted since leaving the Col de Balme, while Balmat began to cut the steps. It was very hard labour, and, for the first time in my experience, Balmat owned himself fairly exhausted when he came back. He was quite breathless, looked worn and haggard, and tossed off a glass of kirschwasser with more eagerness than I had ever seen him exhibit. Cachat changed places with him, and completed the few steps Balmat had left unfinished; and we then crawled one after the other along this precarious footway, with the pleasant consciousness that if we slipped there was a good wide crevasse to receive us at the bottom. The footsteps brought us to within a few yards of the *bergschrund*, at a place where the avalanches from the *arête* had choked it with soft snow, and seating ourselves on the bank, and letting ourselves go, we shot across the crevasse and landed safely on the other side.

We now crossed to the gap in the opposite wall of rocks which we had had so long in view; but it wanted only twenty minutes to four when we reached it. We found it also guarded by a moat of crevasses running all along its base, but a frail bridge of ice, over which the chamois had led the way, afforded us access to the rocks, and in a few moments we had all scrambled up, and stood together

on the top of the ridge. We cast a look back upon the formidable *arête* down which we had cut our way; it looked very grand and imposing, and we did not like the view the worse for the well-marked trail we had left upon its smooth white surface.

A partial clearing in the mist, while we were on the *arête*, made us suspect that we had not taken the easiest course, and, just before arriving at the gap, the sky cleared sufficiently to show us that had we followed the course I had suggested when we first came in sight of the col, we should easily have reached it in ten minutes. But the state of the ice and snow varies so much from year to year that it would be impossible to conclude that this would always be the case. In such passes as this, there are certain landmarks which must be observed, and certain spots which must be passed; but all the details of the route must be determined by the accidents of season and weather.

It would be impossible to imagine a wilder passage than the narrow gap through which we were now crossing the main chain of the Pennine Alps. We were amongst the most shattered rocks I ever saw, and on either hand aiguilles towered above our heads in every fantastic shape. One, which we named the Aiguille Balmat, lurched fairly over, and seemed ready to fall upon us. It had not been visible at first on account of the mist, and this heightened the imposing effect produced, when, on looking through the fog, we saw it looming, vast and threatening, just above our heads. The gap itself was not more than four or five feet wide, so narrow and so definite, that, on W.'s calling it "*la fenêtre*," we adopted the name at once as being the most descriptive we could give it.

The Glacier de Salena lay still some hundreds of feet below us, and we had a bad descent over ice-clad débris before we could reach it. Fortune was still against us. When Balmat had last been here, he and his companions had been able to make a glissade, by which they accomplished in a few seconds what to us was a toilsome affair of nearly half an hour. It was only when we were fairly landed on the great snow slopes of the main part of the glacier, and were released from the necessity of cautiously picking our steps, that we could look about us and fully appreciate the magnificence of this great and wonderful glacier. On our right lay the stupendous chain of rocks hemming in the head of the Glacier de Salena, and forming a gigantic terrace, upon which the

Glacier du Tour is raised hundreds of feet above its neighbour, effectually preventing access from the one to the other by the col that looks so easy from the head of the Glacier du Tour. They stretched away in a long serrated ridge of huge black precipices, broken by patches of unmelted snow, and curving backwards as they receded from us, so that at last they formed a wild and deep recess or bay, whose upper extremity we could not see, but which must run up near to the back of the Aiguille d'Argentières. It was a grand scene of sublime desolation, and its effect was not a little heightened by this mysterious recess, which left something for the imagination to do in filling up the details of the picture. The passage by which we had crossed the main ridge led, not to a point half-way between the northern and southern boundaries of the glacier, but to its north-eastern angle, close to the origin of the great spur separating the glacier of Salena from that of Orny; its opposite or southern boundary was a vast range of crag and glacier, the immense height of which above even our elevated position brought strikingly home to the mind the prodigious scale of the chain of Mont Blanc, while its great length, and its gentle declivity towards the east, gave to the view a character quite different from anything we had been accustomed to associate with the southern side of the great chain. The greatest mass rises some distance below the head of the glacier, and may well be compared in grandeur, if not in actual magnitude, to the Grandes Jorasses, to which it bears no inconsiderable resemblance.

In the far distance, in front of the descending traveller, the Mont Vélan rises to a height which seems the greater because it towers far above all the intervening ridges. When we saw it, the peak just overtopped the clouds; and I think there must have been considerable refraction, for it looked higher than any mountain I ever saw, though we could not have been much less than 11,000 feet high when we passed through the gap above the head of the glacier. Indeed, we had great difficulty in persuading ourselves that it was the Vélan—we thought Mont Blanc himself could scarcely have been so high above us.

But the most wonderful part of the prospect was the chain of rocks which towered in imposing magnificence on our left; and which, so far as I know, is not to be seen from any of the ordinary points of view in the neighbourhood of Chamouni. Its general direction is such as to form an obtuse angle with the broken line of

lofty precipices forming the eastern boundary wall of the Glacier du Tour, and before leaving that glacier, we had already passed beneath one or two peaks of the same general character; but it is only above the Glacier de Salena that they attain their full richness and grandeur. They are broken and shattered to no common degree; but their peculiar characteristic is that they are of a deep ruddy yellow. Professor Forbes, as Balmat told me, named them, very happily, "Les Aiguilles Dorées," and they constitute the great feature of the pass. They extend from the base of the Aiguille du Tour to about half way down the Glacier de Salena, and form a group of the most massive dimensions, and of the most wild and rugged aspect. Here and there upon their sides is a small patch of scanty vegetation, but this is of rare occurrence; they are generally quite bare. They are traversed in every direction by long lines of disruption, which look like intersecting threads of a different rock. Bathed in the full tide of the summer sunlight, they beamed with a ruddy glow, which might well suggest the hues of molten gold, and which, if the painter dared to transfer it to his canvas, would be set down as an experiment on the credulity of the beholder. A hardly less striking characteristic of the scene is the great number and size of the affluent glaciers of the Salena. They pour down from every break in the Aiguilles Dorées, as well as from the huge snow-capped heights on the opposite side of the glacier.

When Balmat had made the passage before with Professor Forbes, they had descended for an hour, or an hour and a half, down the middle of the glacier, and, after passing through a perfect maze of crevasses, had found it necessary to take at length to the rocks on the right, and to clamber beneath some small but very unpleasant glaciers, which come down from the crags above, and overhang the Glacier de Salena. We thought it worth while to try another passage, and accordingly left the central part of the glacier, before arriving at the region where the crevasses are so numerous, and ascended towards the left beneath the base of the Aiguilles Dorées. In this direction, the wall of crags forming the boundary of the upper system of affluents to the main glacier retires considerably, so as to form a kind of bay or amphitheatre. The further extremity of this rocky chain stretches forward into the channel of the central stream, and forms a kind of promontory, at the base of which it flows round to the left, so that the lower portion is hidden by the projection. The swelling surface of the glacier on our left, which

bounded our view in the direction we took, seemed to promise a direct communication with the opposite side of the promontory; and as we knew that the path to Orsières lay to the left of the glacier, we hoped thus to gain considerably in point of time, as well as to avoid passing beneath the overhanging glaciers on the right. We therefore made a long and rather steep ascent, first over beds of snow, and afterwards crossing a vast accumulation of débris, which had fallen from the heights of the Aiguilles Dorées, and now formed a sort of spur to the chain; and arrived at length on the brink of the precipitous rocks overhanging the lower part of the Glacier de Salena. The view, as may be imagined, was very magnificent. The glacier was at least 2,000 feet below us, but so close, that a stone dislodged from where we stood, would not have rested till it reached its surface, or the bottom of one of its crevasses. The day was now far spent, and R. had unluckily fallen very lame from the effects of an old injury to the knee, and, with the uncertainty as to whether a descent was practicable or not, we did not venture upon trying it. There was no resource, therefore, but to regain the level of the glacier to the right as quickly as we could, and making our way through the labyrinth of crevasses to the other side, to trust to the forbearance of the small overhanging ice-streams. Pressed as we were for time, we could not help stopping for a few moments, as we passed a very curious pool of melted snow of considerable extent, lying in an unexpected hollow in the rocks, near the top of the glacier, in whose motionless and pellucid waters the grand peaks of the Aiguilles Dorées were perfectly reflected.

A steep scramble, not unlike the descent of the rocks of La Tête, in the valley of Fée, conducted us to the edge of the Glacier de Salena. I had for some time past abandoned all hope of sleeping under a roof that night, and was much relieved by finding on the lower part of these rocks a quantity of dwarf rhododendrons. "À présent," I said to Balmat, "nous sommes sauvés; le feu, au moins, ne nous manquera pas ce soir." Balmat, with whom the wish was father to the thought, still hoped to reach Orsières, and would not admit the necessity of a bivouac. But R.'s lameness was increasing, and this rough descent tried him severely, and we had entered the ascending shadow of the opposite peaks long before we reached the foot of the rocks. The descent ended in an abrupt precipice, down the face of which we had considerable difficulty in finding any

passage at all. Balmat and I pressed on ahead, in order to explore the way, and while doing so, I was nearer making an end of my expeditions than was at all pleasant. My companions were still entangled in a mass of broken débris which we had quitted, when a large stone dislodged by one of them came bounding after me. I heard it coming, and, as I thought, leaped aside from its path, when suddenly it struck against a rock not many yards from me, and was hurled with a frightful velocity right at my head. There was a boy mentioned in Drinkwater's "Siege of Gibraltar" who possessed the useful faculty of seeing the cannon balls coming, and was able to call out to the soldiers in time for them to save themselves; but I doubt whether his skill would have availed him much if the battery had been within a hundred yards of him, and I cannot ascribe it to any dexterity on my part that the missile passed within an inch or two of my head, instead of striking it. I mention the circumstance as an illustration of the great caution that is necessary in ascending or descending steep and stony *arêtes*, where any one is likely to be beneath you. I had in this instance a most narrow escape, and yet the danger was not of a kind that one would have thought much of beforehand.

On reaching the glacier, every lingering hope we any of us had cherished, that it might be possible to weather the promontory round which the glacier flowed, was extinguished. The rock was worn so smooth and polished, that a chamois could not have made his way along its surface, and between it and the glacier were yawning chasms, whose depth we could not tell, effectually barring our progress in that direction. The ice was too much broken to afford us the means of passing *down* the glacier itself. There was nothing left for us, therefore, but to cross the glacier, which we effected without difficulty, and to clamber a considerable height up the crags on the opposite (or southern) side. This was a most unpleasant and fatiguing business, for our path lay over a mass of yielding moraine and débris brought down by the glaciers above us. Thus late in the afternoon, however, there was less risk than there would have been at mid-day, and we passed beneath them without accident. A few paces further, we reached the top of a shoulder of rock, and seeing, for the first time, the lowest portion of the Glacier de Salena, were able to form a fair estimate of our chance of reaching Orsières that night. We had to descend from 1,000 to 1,500 feet before we could regain the level of the glacier,

and we had not yet made half the distance from its origin to its extremity. After getting down to its surface, we had still to recross the glacier by a difficult passage, and to pick our way for the best part of a mile through a huge accumulation of boulders, intersected by glacier torrents, before we could attain the opposite bank. The rays of the sun had altogether disappeared from our neighbourhood, though, on looking back, we saw the summits of the Aiguilles Dorées bathed in a flood of golden light. Balmat still clung to a hope that we might find a cattle-track, on this side of the glacier, by which we might venture to descend in the night; but any lingering thought of bed was dispelled in my breast the moment we had crested the ridge, and all my energies were thenceforth directed to finding a tolerable encamping ground. We now scrambled down a very steep *couloir* for hundreds of feet, sometimes painfully groping our way among the loose stones, sometimes able to slide for a considerable distance on the fine compacted débris of centuries. The glacier below us came tumbling over a ledge in its bed, like the Talèfre below the Jardin. A precipitous ravine was crossed with some difficulty, and at length, to our great satisfaction, we emerged on to some rocky slopes abundantly covered with dwarf rhododendrons, junipers, and other mountain shrubs.

Here it became quite dark; but we had found a sheep-track, and we thought it must lead somewhere, and accordingly pressed on very eagerly, that we might descend as far as possible before halting. We passed many a group of rocks and boulders which would have afforded us some sort of shelter for the night, but unluckily there was no water near, and, tired as we were, and unprovided with wine, we felt that water was a necessity. At length we found the precipices above fast closing in upon us, and, on feeling our way with our hands beneath one huge slab of rock, we found the herbage moist and rank, and discovered, with a great deal of trouble, a place where water dripped at the rate of about a drop a second. We heard, however, the rushing of a torrent, some distance beneath, and determined to try and reach it. We floundered down for about ten minutes, now stumbling against the rocks, now slipping over the herbage wet with dew, now entangled in the bilberry bushes; but, like the deceptive promise of the mirage, the further we advanced the more the sound appeared to recede. We halted for a few minutes, while Balmat ventured on by himself, and instantly disappeared in the darkness. He was

gone so long that we began to get seriously uneasy about him, as he had ceased to answer to our shouts; but at length he hailed us from far below, with the consolatory advice to stay where we were. We shouted every minute to guide him back to us, and presently he returned, saying that he had descended to the edge of some frightful precipices, when he dared go no further; that he had found a grove of pine-trees, which would have given us excellent shelter and fuel, but that there was no water. He had followed the sound of the water, which led him back again, until he came to the edge of a steep ravine, at the bottom of which the water was dashing fast enough, but which it was impossible to descend in the dark. He thought, therefore, that we had better bear towards the upper part of the glacier and reascend, so as to strike the torrent, if possible, in a less inaccessible part. Weary and footsore, we stumbled back again for about a quarter of an hour, when the men both declared that it was not safe to go any further, and we must light a fire and trust to finding some water by the aid of its light. In passing through the fir wood, Balmat had laden himself with dry and rotten sticks, and on returning from our last halt we had all of us laid hold of everything in the shape of a stick we could find, so that we had no great difficulty in lighting a fire with the help of a box of vestas from my knapsack. Fortunately, there were plenty of dwarf shrubs about, chiefly bilberries; but mingled with these were rhododendrons, which give a warm and blazing fire; and, as the weather was very fine, we hoped to pass the hours till morning without any serious discomfort, while I, certainly, was not sorry to add to my stock of Alpine experiences that of a night spent beneath the blue canopy of heaven.

It was a quarter past eight when we halted, and nearly nine before our fire was fairly burnt up. Then Balmat and Cachat, taking each a brand, set forth on a voyage of discovery; and were fortunate to find water trickling over a slab of rock a few hundred yards from our bivouac. We were almost tempted to change our quarters, but there was more grass and there were fewer shrubs by the water, so we determined to stay where we were. The slight repast we had taken while on the *arête* above the Glacier de Trient was the only food we had tasted since leaving the Col de Balme; and, as we knew that we had been careful not to overload our guides, it was with some anxiety that we examined the contents of the knapsacks. We found a small quantity of mutton, and three or

four pounds of bread, half a flask of kirschwasser, a few raisins, some chocolate, and a tolerable supply of sugar; not too much for five men who had been walking more than twelve hours. Happily, Balmat had some citric acid and lemon essence in his pocket, by the help of which and the sugar we turned the water into an excellent and most refreshing lemonade. Still, we had to sup on half rations, or something less. My companions fortified themselves against the cold with kirschwasser; but to me it is a nauseous and horrible compound, which nothing but necessity would induce me to touch, so that I was fain to content myself with the lemonade,—rather a cool "night-cap" on the bare mountain side.

Before lying down to seek such rest as we could get, we divided the night into five watches. We considered that soon after four we might hope to be on the move, so that an hour and a quarter apiece would carry us through the night. We resolved to take the first three watches ourselves, as we knew we could not trust Balmat or Cachat to waken us if we should sleep, and they stood greatly in need of rest. We drew lots, and it fell to R. to keep the first watch, to myself to keep the second, and to W. the third. It was not till we came to lie down that we fully appreciated the comfort of our bivouac. The slope on which we were encamped was so steep, that no one who was not fortunate enough to find a hole in which to nestle could keep himself from slipping, especially as the bilberry bushes on which we lay were soaking wet with the heavy dew. W., who is great at sleeping, with admirable instinct found a most eligible hollow close against the fire, where the only danger he incurred was that of being scorched; but it was the only place of the kind, and after trying every spot which seemed to give the slightest promise of support, and finding that nowhere could I keep myself from slipping down, except by clinging to the wet bushes, I was obliged to desert the fire and betake myself to the under side of a boulder about thirty yards off, where I had the double advantage of a hollow to sit in and a back to lean against. Here I tied my handkerchief over my head, and tried to think I was very warm and comfortable: but I was not so successful as not to be very glad when Balmat brought me a large stone, which he had heated in the embers of our fire, to sit upon.

It was a night I would not have missed, with all its inconveniences. The stars shone bright and clear out of the sky of jet; not a wreath of vapour could be seen; the solemn glacier far

beneath us showed dimly through the gloom with a dead and spectral white, as if it had been some mighty giant lying in his shroud. The crags beyond it were sombre as a funeral pall, and, in the darkness, seemed to rise to such an enormous height, that the eye grew weary of wandering upwards, before their massive ebony was relieved by the liquid and transparent blackness of the sky, with its thousand glittering points of light. Not a sound broke the awful stillness of the scene, except the faint dashing of the distant torrent, which we had sought so unsuccessfully, and the crackling of the fire as R. heaped upon it fresh armfuls of bilberries and rhododendrons. Occasionally, by the fitful glare of the flames, I could see his form moving slowly and noiselessly about, now in bold relief against the ruddy light, now half hidden by the curling smoke, now illuminated by the blaze, as he passed round to the other side in search of fuel, quite unconscious of how much he was adding to the picturesqueness of the scene. I could not help thinking of home, and of those who not improbably were at that very moment thinking of me, little dreaming that I was lying out on the side of a glacier, many a thousand feet above the sea, with nothing between me and the blue vault of heaven. It was a pleasant thought, and led me gently back to another bivouac beneath a rock by the Lac de Tacul, and thence to many an Alpine wandering enjoyed in the same good company; and at length I was passing from reverie to sleep, when, alas! the inexorable voice of R. proclaimed that a quarter past eleven was come, and that it was my turn to feed the fire, instead of indulging in the pleasures of memory or the luxuries of imagination.

We changed the watch very successfully, without disturbing either W. or our jaded guides, each of whom had provided himself with a hot stone, and was lying among the bushes a few yards higher than our fire. R.'s knee was by this time very painful and sadly wanted repose, but he could not find a tolerable resting-place anywhere near the fire, and was obliged to hold on by the shrubs as he lay; but he wisely kept as quiet as he could, and, for all the signs of life he gave, might have been buried in the profoundest slumber. Had I had much time for reflection, I think I should have been impressed with the solemnity of the scene even more than when I was contemplating it from my den beneath the rock, for now I had a more uninterrupted view of the dark prospect on every hand; and, as I walked about amongst the prostrate motionless

forms of my companions, I felt as if I was the only living thing within sight or ken. There was not, however, much time for such thoughts, for it was full occupation for one man to feed the fire. The bilberry bushes that one tore up by handfuls were gone in no time. There was a hissing, a little cloud of smoke, and a crackling blaze, and then there was an end of them. The rhododendron twigs burnt with a bright and cheerful glow, and threw quite a flood of light over our little encampment; but they hardly lasted so long even as the bilberries. The junipers had rather more substance, but were full of prickles, and hurt the hands; so that it was really hard work to keep the fire up to the mark; and I found it continually necessary to widen the area of search. I was lucky enough to fall in with a very respectable alder-tree, which I was able to cut in pieces with the saw-blade of a large knife; and this was the best *pièce de résistance* I met with: but I cannot say I was sorry when half-past twelve was fairly come and past, and it was W.'s turn to take my place. I had some trouble to rouse him; but, once awake, he proved an admirable forager, and R., who took his comfortable place, now got some chance of rest and sleep. It was become too cold to go back to my former nest, so I heated a stone to sit upon, and another for my feet, and kept myself from slipping into the fire as well as I could. I was too hungry even to think of sleep, had there been nothing else to prevent it; so I made the best of it, and watched the black sky and twinkling stars, and the curling smoke, and W. feeding the fire, and thought of home and a thousand other pleasant subjects, amongst which the idea of a bed the next night at the St. Bernard, after a hot supper and a draught of their good red wine, was, I must own, most sensually prominent.

Balmat and Cachat came down before W.'s watch was ended, driven from their lairs by the increasing cold, and looking weary and haggard enough. I wondered whether I looked as tired as I thought all my companions did. After two o'clock, I doubt if any one slept a wink, except perhaps R., who was snug in W.'s berth; for the cold became intense, and now and then a wreath of vapour from the valley below drifted past us, wrapping us in its cold grey folds and chilling us to the very bones. And now we began to watch eagerly for the daybreak, for the sense of discomfort began rapidly to overpower every other feeling. You cannot—at least I never could—appreciate the picturesque, while the teeth are chattering

with cold, and the inner man loudly proclaims its detestation of that which nature also abhors. That pale grey tint which steals over the eastern sky so imperceptibly that you hardly know it is there, save for the sicklier glitter of the stars, how long before the dawn it shows itself! how slowly does it ripen into light! how it seems to intensify the power of frost, and to give a sharper edge to the keenness of the wind! It was the most protracted daybreak I ever remember. Again and again did I turn my eyes resolutely away, that I might be sure, on looking again, to see some signs of the advancing day. Again and again was I doomed to disappointment, the only change perceptible being that the sky looked colder and more pitiless than before: the wind also was brisker and shrewder, and wherever you posted yourself for a warm at the fire, in an instant the breeze set in that direction, and you were smothered and half-blinded by the smoke. But

> "come what come may,
> Time and the hour runs through the roughest day;"

and at last the grey faded into white, the white deepened into yellow, the yellow kindled into a faint red blush, and the highest peaks of the Aiguilles Dorées were once more tipped with the welcome light of day. Our bivouac was ended, and, having nothing to eat, we ate it, packed up our knapsacks, and girt ourselves for our onward journey.

We had quite lost the sheep-track of last night, and Balmat set forth alone to find the best way down to the glacier. As it grew lighter we had a better view of our position, which was certainly not an inviting one. The slope of the mountain was so steep that our watch-fire had descended bodily several feet during the course of the night, and, at a very short distance below us, the bank ended in some formidable precipices. I cannot say much more for our personal appearance than for the character of our accommodation. With dress disordered, with boots and trowsers first sodden with tramping through the wet herbage, and then powdered with the ashes of our fire, with hair unkempt, with faces and hands grimed with soot and smoke, we looked like anything but reputable folks. However, there was no help for it, and we felt that any attempt to smarten ourselves would be out of place till we were a little less cold and uncomfortable. In about twenty minutes Balmat came back, his trowsers wet through up to the thighs

with forcing his way through the scrub and underwood. We now gathered up our traps, and at a quarter to five bade farewell to our encampment, and trudged downwards to the glacier. We were further from it than I should have supposed, and it took us a whole hour of very steep and fatiguing descent, before we reached the lateral moraine, which was of great size, and seemed to us unusually rugged. Here we rejoined the sheep-track, which passed along the top of the moraine, and at length descended into a hollow between a perpendicular wall of rock on the right and the glacier on the left. It was obvious that we should gain considerably if we could follow this path down to the Val Ferret, instead of crossing the glacier and descending on the other side. But some large boulders, perched upon a very steep declivity of ice just overhanging the path, induced us to display the better part of valour, and we took to the glacier at once. It rises here in magnificent pyramids and ridges, being almost as much broken as the Talèfre; but we pushed on steadily and vigorously, like men who knew that Orsières and breakfast were synonymous, and by a quarter past six were safely landed on the opposite moraine, by the side of a clear mountain rill, which expanded itself, as if to suit our convenience, into a pool of crystal water. The knapsacks were instantly unshouldered, and brushes, combs, sponges and soap speedily at work. Most of us stripped and enjoyed the luxury of a thorough wash, though there was nothing but the sunshine and a pocket handkerchief to stand us in the stead of towels. It was wonderful what a change was wrought in a few minutes. We left the glacier a set of unwashed scarecrows: we flattered ourselves we left the welcome little stream looking something like gentlemen; though, alas! with a keener appetite than before, if that were possible.

We had a toilsome way to pick, first along the great moraine of the glacier, then across a wide desert of débris and sand silted down by a number of torrents, fed partly from the Glacier de Salena itself, but chiefly from the tributary glaciers that pour from the height we had reached late yesterday afternoon. Looking up from here, we thought the descent would have been practicable though difficult, and were rather sorry we had not tried it, though we had, beyond all doubt, taken a more prudent course. A night passed half-way down those crags would have been rather worse than uncomfortable. At length, towards seven o'clock, we reached, very much to our satisfaction, the base of the mountain chain on the

north of the glacier which had been opposite to our encampment, and had looked so black and frowning in the dead of night. With my telescope I took one last look at the scene of our bivouac, and could just discern the spot where our watch had been kept—a little black patch of scorched shrubs and embers amidst the general green and grey.

We had now to mount a considerable height, and to pass through weird-like groups of blasted firs, beneath whose scarred and barren trunks the strawberries, which never would have been found there when the trees were in life and health, grew in some abundance, and occasioned us a little not unpleasant delay. Looking down from this part of our journey, we were surprised to find the glacier still rolling out its interminable length in front of us, and it was not till after the lapse of more than an hour of steep descent, behind a long wall of débris which looked like an ancient moraine, that we had the satisfaction of finding that we had left the ice fairly behind us, and were really approaching the valley of Ferret. R. was almost knocked up, and I proposed to push on and send him a mule to carry him down to Orsières; but he had no notion of being beaten, and after a quarter of an hour's halt beneath some tall pines,—the beginning of a narrow belt of noble wood which bars the lower extremity of the glacier valley, and shuts out every glimpse of the Val Ferret,—stumped resolutely onwards, determined to finish the expedition on foot with the best of us.

After a few minutes, we suddenly emerged from the wood, and found ourselves on a gentle slope of pasture land, profusely irrigated by little rivulets of the purest water, and dotted all over with the purple flowers of the autumnal colchicum. The sudden change of scene was quite startling. Our last halt had been made within a few yards of a glacier torrent, whence we had gazed back upon a scene of savage grandeur, for wildness and desolation almost without a rival even among the Alps; of which the sole components are crag, precipice, snow, ice, and aiguille, combined in every variety of stern and awful magnificence—the very citadel of winter: a few steps had brought us into the garden of summer. The grass beneath our feet was fresh and moist, and almost dazzled the eye with the brilliancy of its emerald green. Hardly a stone's throw from us, the rich valley of Ferret stretched out on either hand, studded with châlets, dotted with sheep and cattle, sparkling with cultivation, instinct with life and luxuriant beauty. The dark

masses of the great chain bounding the valley on the south were clothed with wood and herbage nearly up to the summits, and a thin veil of delicate haze which hung upon them showed how great was already the power of the autumn sun. Even the glacier torrent, which we had left on our right in traversing the wood, now flowed behind a rising ground, so that not an object was in sight to remind us of that desolate region of eternal frost we had so lately quitted.

But it is half-past nine o'clock, the sun is blazing fiercely in the clear sky, and we, who were on the march before five, have yet to reach Orsières before we can hope for a meal. So we make no pause, but hurry on, and in a few moments have gained the carriage road leading down the valley. It is curious to observe how well that great glacier is masked: the exit of the valley is very narrow and unpretending; there is nothing to lead you to suspect for a moment that it is almost within sight of one of the largest glacier systems of the Alps, and ten minutes after you are on the road to Orsières, hardly a trace of its existence is to be seen.

The rest of our way was hot and dusty enough; the sun shone directly in our faces, and though the berberry bushes lined the road in rich profusion, yet not one berry of all those countless thousands which hung in graceful crimson clusters from every branch and spray, and seemed to offer welcome refreshment to our parched mouths, was ripe or sweet; so that, in spite of the smiling plenty and richness of the valley of Ferret, we were glad enough when another valley began to open on our right, and a straggling village, at the foot of a steep declivity on the face of which were traced the long white zig-zags of the St. Bernard road, appeared in sight, and defined at length the limit of our morning's walk. Balmat and I pressed on apace, that no time might be lost in preparing an ample indemnity for the enforced abstinence we had submitted to, but it was half-past ten, nearly six hours from our bivouac, before we reached our destination.

R., I felt sure, would need rest before he could eat, and W. and I should want to indulge in copious ablutions, which would be succeeded, in the case of W., by a dilatory toilette (at which he is no mean hand); so I was fain to put off the hour of triumph a little longer yet, and ordered dinner at twelve, an arrangement which met the approval of my friends when they arrived: but, when we were washed and dressed, we began to repent of our forbearance; and I, in particular, was accused of displaying the

most sensual and unromantic hankering after the flesh-pots. Of course, dinner was half an hour late, as we were ravenous; but, when it did come, we distinguished ourselves. Nothing was amiss to any one; it was all fish that came that day to the net, and we felt ourselves almost constrained to apologise to the landlady for our appetites.

That afternoon, we started for the St. Bernard, and two days afterwards re-crossed the great chain and returned to Chamouni by the Col du Géant. We had many discussions on the comparative merits of the two passes. Balmat maintained that the Aiguilles Dorées gave to the Glacier du Tour a decided superiority; but for my own part, after having repeated the passage of the Glacier du Tour, and having three times crossed the Col du Géant, I am compelled to give the palm to the latter. The passage of the Séracs surpasses, so far as my experience goes, everything else of the kind, except perhaps the upper part of the Glaciers des Bossons and de Taconnay; while the boundless view of the glaciers and mountain chains of Piedmont, which is seen to the south of Mont Blanc, is one that strikes my imagination with uncommon force. On the passage of the Glacier du Tour there is hardly any distant prospect to be seen; and from the enormous length of the Glacier de Salena there is a certain degree of monotony in the latter part of the day's journey. Still, it has attractions of its own of no common order, and presents combinations of glacier and crag of unsurpassed magnificence; and I cannot do better than by recommending every one who has time and strength to spare to try both passes, and determine for himself which is the more interesting. It is quite possible he may have to perform both journeys twice before he will be able to make up his mind; and if he has made either once, he is sure to long for the opportunity of repeating the expedition.

It only remains for me to mention, as an additional inducement to attempt the passage of Le Tour, that it is not included in the Chamouni tariff, and that the traveller is therefore at liberty to make his own bargain as to the number of his guides and the remuneration of each. I do not think that there are at present half a dozen guides who have made the passage. The direction is easy enough to find, but there are some formidable difficulties to be overcome, and it will be seen from our experience that there may be occasion for a very skilful ice-man. It is certainly not a pass to

be undertaken without good guides; and if only a small number are employed, care should be taken to keep down the amount of baggage to the lowest possible quantity. There may be a great deal of heavy work to be done, and the pass is very long. Thirty francs seems to me a reasonable price for each guide, and I apprehend most of them would be well satisfied with that sum. Provisions can be procured good, and on reasonable terms, at the Col de Balme, where the inn has passed into the hands of very civil, honest, and intelligent people.

ALFRED WILLS.

NOTE.—Reference has been made, at p. 3, to the incorrectness of the common maps, so far as this end of the Mont Blanc chain is concerned. The map of Mont Blanc given in this volume was corrected from a reduced copy of a map in Johnston's Physical Atlas, which is no doubt compiled from the most authentic sources. It is no exaggeration to say, that the whole of the eastern portion of the chain is a pure effort of imagination. Auguste Balmat was in London while the map was in preparation, and he and I are responsible for the portion of it east of the Aiguille d'Argentières. We found it necessary to throw down mountain ranges, to create glaciers to fill their places, and in fact to take the most revolutionary proceedings with respect to this part of the king of Sardinia's dominions. It was impossible, in the uncorrected map, to recognise a single feature of the actual topography. The present map lays, of course, no claim to absolute accuracy; the corrections were made merely from memory and general knowledge of the district; but it is free from the gross blunders of its predecessors. The general direction of the Glacier de Salena is fixed with exactness by the fact that the Mont Vélan is seen from the head of the glacier, as you look down it. Mr. Johnston's map is said to be drawn from the actual surveys of several Alpine authorities, at the head of whom stands Professor Forbes, his name appearing in large letters. It is right to mention, that the only portion for which Professor Forbes's surveys are answerable is the Mer de Glace and the adjacent glaciers and aiguilles.