

MONTE ROSA FROM MACUGNAGA. By the Rev. C. TAYLOR.  
Read before the Alpine Club, April 2, 1873.

ON July 22, 1872, a party, consisting of William Martin Pendlebury, Richard Pendlebury, and myself, with Gabriel Spechtenhauser of Fend, in the Oetzthal, commonly known as Gaber,\* and the local guides, Ferdinand Imseng and Giovanni Oberto, started to attempt the Italian side of Monte Rosa from a point on the left bank of the Macugnaga glacier, called by Imseng, *Rücke Jägi*.†

We had been travelling for some weeks in the Eastern Alps, and had reached Chiavenna by way of the Disgrazia. Then, the party having disbanded, W. M. Pendlebury and I, with Gaber, set off for Macugnaga, while R. Pendlebury agreed to rejoin us at Zermatt after a flying visit to Milan; but it so happened that he came up the Val d'Anzasca, and that on his way he fell in with one Ferdinand Imseng, a guide unknown to fame, whose ambition it was to ascend Monte Rosa from Macugnaga, and thus to accomplish a feat which mountaineers of greater experience had been unwilling to attempt. It was soon agreed, though with no votes to spare, that Imseng should have a trial, and, the weather being at length good, we arranged to start for the 'Rücke Jägi' on the following day.

From the Monte Moro hotel, now kept by the brothers Oberto, Imseng pointed out the route by which he proposed to ascend. The precipitous face of the mountain, running at first approximately from north to south, and then curling round to the east, was from this point full in view; the Nord End being to the extreme right, the Höchste Spitze next to the left, and the Zumstein Spitze farther to the left and in the bend. The Höchste Spitze is described by Mr. Ball as a double tooth of rock, of which the eastern pinnacle is 24 feet lower than the western. The former pinnacle may be called the *Est Spitze*; the latter is known as the *Allerhöchste Spitze*. The ridge which leads up to the Est Spitze runs about east and west, and is seen endways from Macugnaga; but a good broadside view should be obtainable from the neighbourhood of the Cima di Jazi. Between the ridge in question and the Zumstein Spitze is a snow Sattel, which overlooks the Grenzgetscher, and may be called the *Grenz Sattel*. Imseng's plan

\* He was introduced to us, with Alois Ennemoser, by the Herr Curat Senn, and has travelled with one or more of us in the years 1870-2.

† This name was written down at Imseng's dictation.

was to mount the Grenz Sattel\* and to attack the ridge of the Hochste Spitze from its southern side.

The necessary preparations having been made, we set off with Caspar Burgener as porter, and reached the place of bivouac in an afternoon stroll of four and a half hours; the route being at first through Belvedere, then to the left up the broad and almost level moraine, and lastly to the right, along a ridge of the moraine and up some rocks at the base of the eastern slope, which we proposed to climb. It was not, however, without some controversy that we agreed to take up our station with no other shelter than a wall at our backs. Gaber in particular hankered after the chalets of Pedriolo, and disliked the prospect of passing the night 'under an icefall,' with an empty kettle and no fire; but Imseng, knowing the place, dismissed the last fear as groundless, and, urging the necessity of an early start in the morning, promptly led the way up the rocks on the right, which, though from below apparently bare, were found to be plentifully interspersed with shrivelled twigs of the Alpenrosen. Of these, axes and fingers soon chopped or tore up an abundant supply. Then, after a reconnaissance, we set off again, Imseng with a small waggon-load of fuel scudding lightly along, and at length halting, some few minutes before 7 P.M., at a bleak but well-chosen spot on the mountain side.

No long time elapsed before we had set light to our roses and boiled some snow from a couloir which ran beneath. Then, *inter alia*, we had time to reflect on our prospects for the night and the following day. The ascent which we proposed to attempt had been declined a few days previously by Ulrich and Christian Lauener, and in 1867 by Christian Almer. The veteran Lochmatter had also pronounced against it, and it was not surprising that Gaber, more or less backed by one of his Herren, should have felt qualms about following an unknown local guide into a region which some of the highest authorities on mountaineering had condemned as dangerous. But Imseng, nothing daunted, steadily maintained that his route was comparatively little swept by avalanches, and would be reasonably safe at an early hour of the morning. It has been thought, notwithstanding, that we showed a want of caution in undertaking the expedition; but it was natural that

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\* We did not, however, complete the ascent of the Sattel, but inclined a little to the right of it, and took to the rocks at their lowest point.

the positive statement of a man who knew the mountain, and had examined the proposed route\* repeatedly from different points, should have been allowed to outweigh a very considerable amount of less definite testimony on the other side. At all events we might go to the end of the lower rocks, and then turn back if circumstances proved unfavourable.

Soon, however, the fading of the light changed the current of our thoughts, and warned us that whatever might be in store for us on the morrow, we were likely to find our present quarters of the coolest. We had had experience of *châlets* in descending order of comfort, from the luxurious hay barn of Waxegg to the open cheese shed of Porcellizza, but a lower depth seemed now to be reserved for us under the *séracs* of Monte Rosa. The night, however, was passed more comfortably than we had any right to anticipate, the temperature being remarkably moderate for the situation. Lying with our backs to a low wall of rock, and our feet sloping towards the moraine of the Macugnaga Glacier, we settled down as best we could; a scientific member of the party speculating what would become of us if the laws of friction should be repealed during the night. Each Herr coiled himself up in a blanket, while the three guides and the porter, having only one between them, lay closely packed in the neighbourhood of the fire. Imseng, with no extra covering but a woollen nightcap, was quickly at his ease, and proved to our dissatisfaction that he was fast asleep: the rest appeared to sleep less soundly; but those who watched late had the consolation of seeing a bright moon shining upon a panorama of ice and snow which no visitor of Macugnaga will need to have described. About midnight Imseng woke with a slight shiver in time to save the last spark from extinction. This led to a general stir. Then, the fire having been made up, we once more composed ourselves till the guides aroused us by their preparations for breakfast, which was, after all, but a very scanty meal, owing to the difficulty of descending the rocks in the dark to procure snow.

At length, some time after 2 A.M., the breakfast was over, and everything seemed ready. We were on the point of putting on the rope and making our start while it was yet dark, when a deep roll from the Zumstein announced that the avalanches were waking early. Gaber thereupon put in a

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\* In company, I think, with Alexander Burgener. I was told, in 1870, by Franz Burgener, that some guides proposed to make the ascent, and to ensure the popularity of the excursion by building a hut.

final protest against proceeding, for when an expedition is once fairly launched he is not the man to turn back. 'Guide,' said he, 'what think you? I think it is very dangerous;' but Imseng, though with a shade less of confidence than overnight, still maintained that his route was safe. In the discussion which followed it was urged reasonably enough that the warmth of the night must have loosened the foundations of the séracs and increased the danger to be apprehended from avalanches. Even Imseng, as I learned long afterwards, shook his head and said that he did not *quite* know, when asked in an undertone by R. Pendlebury what he really thought of it. But in spite of all whispered doubts the party of progress remained steadily in the ascendant, and we determined, without too closely defining the meaning of our sage resolve, that we would go just so far as we could with safety go. Accordingly the rope was put on, and the start made some minutes before half-past two, in the following order: Imseng, R. Pendlebury, Oberto, W. M. Pendlebury, Gaber, and myself.

The first few steps were not encouraging. We groped slowly over the rocks to the couloir, where the leaders floundered into a mass of soft snow, which augured ill for the condition of the slopes above when they should have been exposed for a few hours to the action of the sun. Things, however, were not so bad as they seemed; the main part of the couloir was hard enough, and it was merely an accidental accumulation at a point near the edge which gave ground for apprehension. Passing the couloir we came upon rocks again, and then before long to a second couloir considerably broader than the first. Imseng now turned abruptly to the right, and showed a disposition to go straight up, while Gaber emphatically dissented, and urged the necessity of crossing. Being some distance behind the leader, and not at once appreciating the situation, I assumed at first that the dispute was about an unimportant detail, and was thus led to conjecture that Imseng was bent upon trying a more direct ascent, of which he had held out hopes the evening before. But he was in reality actuated by overmuch caution rather than by rashness, for as the party advanced in accordance with Gaber's more far-seeing, though bolder, recommendation,\* it became evident

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\* The other course must have led us into difficulties. We have always found Gaber a bold and judicious guide, who can be trusted in trying circumstances. When we had been lost in a storm and partly frozen near the summit of the Ortler, it was mainly through his sagacity that we were enabled to complete the descent.

that we were flanked on the right by a strong battery of séracs. One by one we partially disappeared in a deep furrow, the trail of some huge ice-block which had plunged down the slope to the glacier beneath. Then advancing, unmolested as yet by the enemies we had most to fear, we found ourselves at the beginning of a long stretch of good and fairly interesting rocks.

Our course having hitherto lain almost horizontally along the side of the mountain and in the direction of the Zumstein Spitze, we now turned more to the right and commenced ascending the rocks, rather rapidly than otherwise, considering the size of the party. Our way was for a time safe and plain before us; and, as we struggled up the massive boulders, we shook off the stagnation of the night, growing more and more convinced at every step that Imseng was a true prophet. At length the rocks came to an end for a time, and we emerged upon a precipitous broken snow-slope, which was blocked along its further side, except at the upper corner, where there was a narrow gap looking towards the Zumstein, and surmounted by a small but rather threatening sérac. As we made for this point, going horizontally along the upper part of the slope, an avalanche was observed to break away at some little distance below us. But our route was well chosen; and as we passed through the gap, cautiously though without difficulty, we could not help remarking the skill and judgment with which we had been led.

Nothing worthy of notice occurred between this and the first halt near the end of the lower rocks, a little before 5 A.M. At the start, and for some time afterwards, the slopes on our left, as they fell away in the darkness, had of necessity seemed more formidable than they really were; and almost the first thing that the dawn revealed was a thick cloud which threatened storm as it rolled over us from the valley. But soon the clear light showed us the true nature of the work before us; and long before the halt it had become evident that we had nothing to fear from the weather, except, perhaps, some excess of heat that we would gladly have dispensed with. At the halting-place, which we thought safe and well chosen, we passed a very pleasant five-and-twenty minutes. But the eyes of lookers-on are sometimes sharper, and their imaginations generally more lively, than those of persons actively employed; to one or other of which causes may perhaps be attributed a report afterwards current at Macugnaga, that we halted for breakfast under a dangerous cornice, which to the spectators who watched us from below seemed likely to make short work with us, and which actually fell on the third day after. It could, perhaps,

be decided by a comparison of watches whether the reference in this rumour is to the first halt, or to a shorter one made from two to three hours after, or to a still later occasion when we halted to drink some wine under the shelter of one of the last séracs ; but if, as I incline to suppose, the allusion is to the first and longest of these halts, I must confess that I doubt the accuracy of the report, although, on the other hand, it should not be too hastily denied that a spectator below may have had the advantage of us in more than one particular.

The halt over, we proceeded in the general direction of the Grenz Sattel, with such deviations as the nature of the ground necessitated ; but this part of the route for some hours has left so little impression upon me that I cannot describe it at all in detail. I remember only that we found enough of séracs and crevasses to keep us continually on the alert, and make us unconscious of the lapse of time. The snow, which at the commencement of the day had been hard enough to bring the axe into requisition, was now rapidly softening, and kept the leader fully employed at treading steps, which he did very effectually, perhaps even causing delay by making them better than they need have been. That we made slow progress is evident from the time which passed before the final rocks were reached, but that we were not idle may be gathered from the rate at which the hours flew by ; and indeed there was more work in the expedition than had been apparent from below to practised eyes, or could have been inferred from an estimate of the vertical height to be climbed.

At length, when Imseng had done what might have passed muster for a good day's work, it was suggested that Gaber should change places with him. The change having been effected, we soon came to one of the most interesting portions of the route. Swerving a little to the right, we found ourselves at the edge of a monster crevasse which could be made out from Macugnaga ; then, turning to the left, we walked for some distance along it in the direction of a promising bridge by which we hoped to cross. Before the bridge was an irregular mound, along the front of which we passed without much difficulty. Then, burrowing through the froth of snow on its further side, we crept slowly downward, leaving between us and the crevasse a frail barrier, on the outside of which our right arms were at one point placed so as to overhang the brink. The next moment Gaber was at the bridge, promptly hacking at the cornice which covered its lower end. Imseng, for some reason, seemed to think this bridge impracticable, and proposed to go in quest of another ; but the sound of the axe in

front was the sole reply, for Gaber, though by nature a man of the rocks, is fast developing an acquired taste for crevasses, and it was no ordinary pleasure for him to lead us over the most voracious-looking 'schrund' that it had ever been his happiness to cross.

In the few minutes which elapsed before the preparations for crossing were complete, I took the opportunity of observing the situation from my position in the rear, which enabled me to see underneath the bridge. The crevasse may have been nine or ten yards across. Its solid walls ran straight down till they were lost in the depths, except that at one point they inclined inwards, clamping between them a large block of ice, over which the bridge itself was formed, and which had doubtless fallen in the same avalanche that had piled up the mound behind us. The bridge proved trustworthy, and the abrupt slope immediately above was ascended without apparent risk; then we turned back some few degrees to the right, being driven by the nature of the ground to deviate a little from the direction of the Sattel which it was proposed to ascend. Before long, Gaber, still unreconciled to the expedition, was glad to resign the lead into the hands of Imseng, who once more went to the front, and continued there till the rope was taken off in the evening. The slope of the mountain was now considerable, and the snow, as Gaber afterwards described it, 'bad and hollow,' but there was nothing to suggest extraordinary risk so long as we went with caution, and looked well to every step. After a time, still bearing a little to the right of the Sattel, we came to a colossal sérac heavily fringed with icicles, under which we proceeded to pass, turning considerably more to the right so as to face almost north. As Imseng laboured at the steps, we had leisure to examine the massive structure on our left; but I regret that I am unable to communicate any results of scientific importance, for a crack and a rattle put an untimely end to our observations. Imseng with a shout sprang forward, while the hindmost darted back, and R. Pendlebury, *in medio* but not *tutissimus*, with the rope taut on either side, received a smart rap on the head from a fragment of an icicle; W. M. Pendlebury was struck on the chest by a larger block, and although in the excitement of the moment the circumstance was almost unheeded, yet some days later an expanse of black and blue testified to the severity of the blow: Gaber escaped with a slight contusion above the ankle; I cannot answer for Oberto, but only the first man and the last were wholly out of the line of fire. Nevertheless, the alarm was a false one, for after this slight ebullition the sérac

cooled down and suffered us to pursue our way in peace, though not altogether without a lurking suspicion that the mountain had perhaps not done its worst.

After this we plodded on for I cannot say how long, without seeming to encounter any difficulty. We looked upwards to the Sattel, and saw nothing to hinder us from reaching it. Whether the mountain was growing commonplace, or whether we were becoming hardened to anything short of the sensational, must remain an open question; but suffice it to say that everything was going well, and the idea of failure had vanished from our minds, at a moment when we were on the verge of the most alarming situation of the day. A sudden sliding of the surface through which we trod brought the whole party to an instantaneous halt. Each man planted himself in his steps, and looked on in silence, no sound being heard but the hiss of the snow as it skimmed down the steep slopes on every side. Perhaps an avalanche was coming, perhaps not; we had no means of judging for the moment which of these contingencies was the more probable. And yet our feeling was one almost of indifference, for the reason doubtless that, although we may have been in some danger, we were absolutely free from perplexity, since nothing could now be more self-evident than that we must abandon the Sattel, and make with all care for the very lowest point of the rocks on its right. Accordingly, it was not long before we were again in motion. We had waited for a time to see what was coming, but the sliding went on without diminution, and at the same time, as I thought, without material increase. Gaber, however, remarking that it grew worse every instant, was anxious to be at once on the move, and recommended very judiciously that we should go some distance to the right, and then mount straight up in a line of still snow under cover of a sérac. He had singled out perhaps the only spot in the neighbourhood where the slope was undisturbed. The snow was in motion right and left, and some distance in front, but the current immediately above was turned by the sérac itself, and poured off in a strong stream to the north. At the sérac we made a halt and drank some wine, feeling ourselves for the moment in a position of comparative security, and having a, perhaps, irrational confidence that somehow we must succeed now that we were almost within a stone's throw of the solid rocks. But, confidence or no confidence, the right course was to go on; for had not retreat likewise its risks, which we were in no mood to under-estimate? Earlier in the ascent we might well have been turned back by similar appearances; but with the rocks now close in front, and

hours of softening snow behind, it was clear as the day that we must go forward, since it was no longer consistent with prudence to go back. Whether the situation was really dangerous, we were unable to judge. But it was idle to speculate: the practical issue had to be tried: one stage more, and then the rocks—perhaps. Accordingly we passed under the sérac to the south, and scrambled up its side; a piece of work which under more favourable circumstances might have been thought difficult. We then made for the last sérac, which lay midway between us and the lowest point of the final ridge, and from which a small crevasse ran down obliquely to the right, so as to separate us from the slope by which we were to reach the rocks. The snow here seemed better than below, but, the incline being greater, it was deemed right to use every precaution before we fully committed ourselves. Imseng was sent to the front for the first trial, and went to the full extent of his own rope, now uncoiled for the first time, while the main body of the party remained well placed below; Gaber next followed, changing places with R. Pendlebury; \* then, one by one, we stepped over the crevasse, till the last man had left his firm footing under the sérac, and the whole party was launched irrevocably upon the slope.

It was felt that the decisive moment was now at hand, and that in a brief space the fate of the expedition must be determined; but we gave our minds to the work before us, and wasted very little thought on possible consequences. The snow was not to be trifled with, but it bore the pressure put upon it, and showed no symptoms calculated to cause uneasiness; and, indeed, but for the recollection of what we had experienced below, it would scarcely have occurred to us at this point that there was any danger at all to be feared; but, as it was, we went with the utmost caution, fully resolved that up to the last step no chance should be thrown away. I have a sufficiently lively recollection of the scene, but there is little that I could say by way of description which would not be better left to the imagination of the reader. The simple fact was that six men, joined by some fifty yards of cord, were nearing the end of a short steep snow-slope. A few steps, and the head of the column was hopefully near the goal. A few more, with growing confidence but undiminished care, and the last film

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\* The order from this point to the summit was: Imseng, Gaber, Oberto, W. M. Pendlebury, R. Pendlebury, myself. After reaching the ridge, we used only our own rope, which was 100 feet in length.

of doubt was scattered by a subdued *Jodel* from Imseng, which announced that the rocks of the 'Vorspitze'\* were reached, and the day was won.

Up to this point, as we learned on the following day, our porter had been anxiously watching us in company with Lochmatter. Once they had lost sight of us, but we soon reappeared, and thenceforward remained in view until the rocks were reached.† The time must have passed slowly down below; but our own feeling was one of sheer amazement, when we found that five good hours had elapsed from the first halt, and eight hours, including one spent in halts, from the start, for our watches positively assured us that it was not far short of half-past ten.‡

After a few words of consultation among the guides we set off again, going at first to the north of the ridge, the opposite side to that which Imseng had intended to try. While we were still on the snow some one had foreboded that the rocks themselves might present insuperable difficulties, but Imseng pledged his word that success was certain if they could once be reached. I had myself put the question both overnight and in the morning, and had extracted from him the further assurance that, if the worst came to the worst, we might cross the Sattel and find an escape by the route of the Sesia Joch; but as for the rocks, he had seen them from above, and had no doubt whatever that they might be climbed. It so happened, however, that he did not approach them in the way that he had planned, nor do I think it likely that he had surveyed our actual route in detail; but we were more than nine hours of daylight to the good, which gave time enough, though none to spare.

For the first few steps the rocks were not steep, but they were interspersed with some patches of snow and ice. Afterwards they became steeper, and we ascended by a sort of gully, inclining a little to the north; the climbing being perhaps intermediate in difficulty to that in the Zermatt and Breuil ascents of the Matterhorn. Once only, as we were passing

\* Imseng's expression for the Est Spitze.

† Burgener then returned to Macugnaga, and, starting at midnight, brought our knapsacks over the Weissthor to the Riffel.

‡ We had expected to clear the snow much earlier, otherwise the expedition might have been abandoned. We lost time, doubtless, by letting one guide lead almost without intermission. The eastern slope of Monte Rosa, being fully exposed to the morning sun, becomes less safe towards midday; and for this reason the *descent* from Monte Rosa to Macugnaga is not, as a rule, to be recommended.

up, and along the face of a wall on the left, we came upon a weak point in the ledge, which, however, was easily detected. After a while we crossed over to a wall on the right, and there spent much time in quenching our thirst from a rock of more than average dampness. In this halt and another of like nature, some hour and a quarter or more may have been consumed; for we concluded a little prematurely that we could now afford to loiter. At one point, which I cannot precisely fix, we encountered an obstacle in the shape of a smooth inclined slab, which no one man alone would have found it an easy matter to surmount; accordingly Imseng was first pushed up, and the rope was then for once brought actually into use instead of being worn merely by way of precaution. The next thing that I remember is our arrival at a point on the backbone of the ridge, from which we looked down to the Grenz Sattel on the left; the Silber Sattel and the Nord End being to our right front.

Here Oberto placed a handkerchief under a stone on the left.

Although we had now been for a long time on the rocks, some good work remained to be done before the ascent even of the eastern peak was accomplished—a peak which is of sufficient importance in the history of mountaineering to be called by a distinctive name, whether Est Spitze or any other, since it was ascended from the Silber Sattel before the Allerhöchste Spitze had been reached, and is cut off from the true summit by a gap which was described as quite impassable. But we felt that the gap must now be passed, and passed it was, though with what degree of difficulty I can scarcely say, for the inclination to discriminate was fast evaporating. The complete ascent of the ridge was to occupy us for what remains of five hours when the duration of the long halts already mentioned is subtracted; and, whether because the time was long, or because we had expected it to be shorter, our freshness showed signs of wearing off before the summit-cross was seen over the left shoulder of the Est Spitze; so that, without meaning any disrespect to the rocks, we began to whisper that we had had enough, considering that the sun had all day poured an unwelcome blaze upon us, after perversely refusing to show us a view from some half-score of peaks that we had climbed before. No vestige of doubt survived to make our toil interesting; there was nothing for it but to work on and long for the end. Upwards again over walls and towers and pinnacles, to which may some future chronicler do fuller justice, and down and outside projecting rocks, and round them to the right, and once more up, till at length the

last impossibility was fairly vanquished, and the labour of thirteen hours was brought to a successful close.\*

The usual banquet followed, and does not need to be particularly described; but the champagne of victory had been left behind, for it was voted tempting fate to speak even with an 'If' of reaching the summit. The general view was good, except in the extreme distance, and we could see down under a cloud to Macugnaga. By one half of the party the Matterhorn was now for the first time seen close at hand. As Imseng inspected it, he augured that there was still too much snow upon it; for it was the desire to ascend this peak that had brought us into the neighbourhood, although Monte Rosa had been taken by the way.

A little before 4 o'clock, after a halt of half an hour, we started for the descent in the fresh tracks of a party from the Riffel. Below the Sattel the snow was extremely deep, and we were frequently reminded that there were crevasses under foot; but at length, after all delays, we came to the rocks of Auf der Platte, and our troubles were at an end. We reached the Riffel at about 8.30 P.M., or upwards of eighteen hours from the start. Imseng was giving me his autobiography—how that he was a Saasman, and related to the well-known mountaineering *curé* of that place, who was drowned three years before in the Mattmark See; had been settled for some time in Macugnaga; was twenty-seven years of age—though, by the way, he looked younger; was a *Jäger* by profession, but also worked in the mines—when our attention was arrested by an electric flash from the left, a signal from the Zermatt *cabane* to the lower world. Almost at the same instant we reached the hotel, already full to overflowing, and ordered dinner with a quiet mind, reflecting that a blanket and a doorstep would reproduce all the accommodation of 'Rucke Jägi;' but in due time it was announced that there was prepared for us 'das schönste Zimmer im ganzen Hause,' to wit the drawing-room, where we slept in dreamless state, till roused at six by the general stir to see the first party of the season on their way to the summit of the Matterhorn.†

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\* The following new route up Monte Rosa may be suggested as worth trying:—Mount the Grenz Sattel from the Riffel, and complete the ascent from this point, according to Imseng's original plan.

† Young Peter Taugwalder, having crossed the Matterhorn with us from Zermatt to Breuil (July 24 and 25) is now in a position to say whether the scene of the accident of 1865 is still traversed. Under his lead things went as well as could be desired. He showed a little anxiety before beginning the descent, but was soon reassured when he found that the last man, Gaber, was to be trusted.

## NOTE BY THE EDITOR.

THE Est Spitze of Monte Rosa mentioned by Mr. Taylor is undoubtedly the summit above the Silber Sattel (the hollow between Monte Rosa proper and the Nord End) ascended in 1848 by Professor Ulrich's guides, and subsequently by other parties, who, without any sufficient reason, considered it impracticable to pass from it to the Dufour, or as it is more generally called, the Allerhöchste Spitze. After the reading of Mr. Taylor's paper, a discussion took place as to the relative height of the two peaks, and Mr. Moore suggested that the Allerhöchste Spitze may prove to be in reality the lower of the two. The difference in height between them is, as we can testify by experience, exceedingly small, and not easily determined by the eye. For, having climbed Monte Rosa by the ordinary route, but with guides strange to the mountain, at a time when the stone man on the Dufour Spitze was masked by a heavy fall of fresh snow, we walked over that summit, and began without a question the passage of the ridge leading on to the eastern peak. Some progress had been made, when one of the party, looking back, detected the stone man, to which we then returned.

Standing on the Dufour Spitze, it seemed to us impossible to assert with confidence its superior height. But, on the other hand, all those who have reached the eastern summit have, despite the natural bias they must have felt towards a contrary opinion, acquiesced in its inferiority. The question, now attention has been called to it, admits of easy decision, but we shall be surprised if the established verdict is reversed.

## REVIEW.

## THE LIFE OF PRINCIPAL FORBES.\*

THE Life of Principal Forbes could not be passed over without a word of welcome in the pages of this Journal. It may be said, without exaggeration, that from his writings, more than from any other source, sprang the influences that created the taste for mountaineering exploit and enterprise of which the Alpine Club is a remarkable illustration. Later *opuscula* have popularised the subject, but they probably would never have been written save for his *opus magnum*; and it is impossible not to see in the extracts from his diaries and correspondence, which form the great attraction of the interesting volume before us, how intense, amidst all the deeper and soberer claims of scientific investigation, was his sense of beauty and grandeur, and how keen his enjoyment of mountain life and adventure. It would have been no matter of surprise if the father of all true and accurate knowledge of the phenomena

\* *Life and Letters of James David Forbes, F.R.S.* By John Campbell Shairp, LL.D., Principal of the United College of the University of St. Andrews; Peter Guthrie Tait, M.A., Professor of Natural Philosophy in the University of Edinburgh; and A. Adams-Reilly, F.R.G.S. London: Macmillan & Co., 1873.