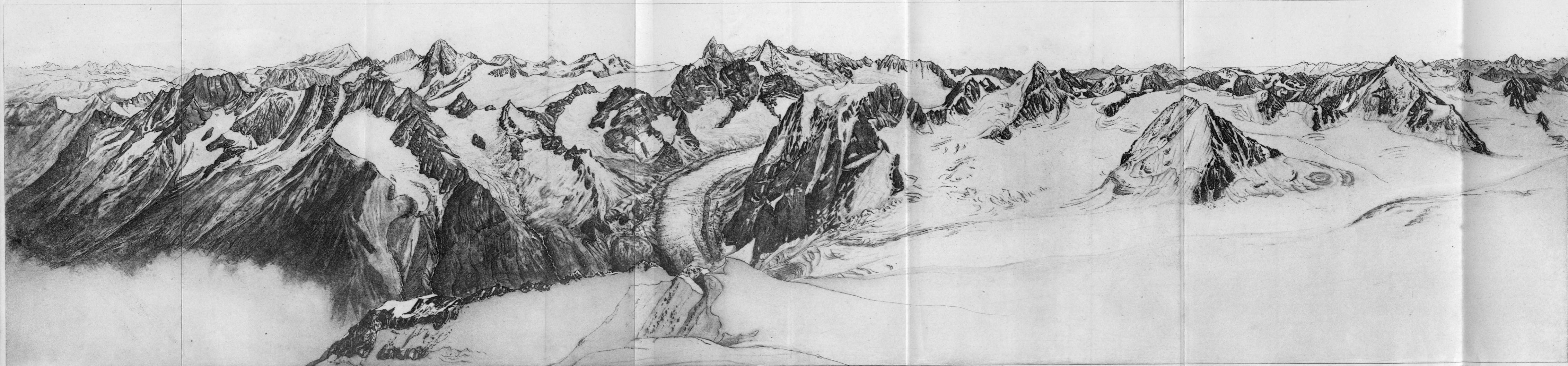


Jungfrau, 13,700, 43. Finsteraarhn. 14,028, 50. Prt. of Nadelhn. Täschhn. 14,758, 20½. Alphubel, 13,803. Allaleinhn. Rimpfischhn. Strahlhn. 13,235. 13,796; 207. 13,750. C. di Jazzi. 12,527; 21½. M. Rosa, 15,217, 20½. Lyskamm, 18½. Castor, 13,879, 17. Pol. lux, 16½. Les Junceaux, Bo. de Giulia. 7½. Bo. de Creton, 7½. Château des Dames, circ. 12,000, 8. M. Pilonet? 15. Zerbion, 9,083, 17. Plain of Italy? Dirn. of Châtillon. Cme. de Roise Banque, 10,333, 23. Pte. de Tersiva, 11,500, 23½. Merlo, 10. Bella Tola, 10,138, 20. Couronne de Bröonna, 10,381, 9. Pte. de Mouri, 11,713, 8½. Pte. de Bricolla, 12,018, 8½. Weissn. Schalln. 14,804, 147. Rothn. 13,855, 12½. Grd. Cornier, 13,022, 8½. Dirn. of C. d'Hérens, 11,418, 61. Tête Blanche, 14,318, 8. Gabelhn. 13,393, 10½. Tête de Valpelline, 12,510, 42. S. Col de M. Brulé. Mitre de l'Evêque. Bc. de Fontanella, 7½. Dirn. of Prerayen, 61. Mt. Relessau, 8½. Les Rousses, 4½. Col d'Olen, 3. Tête de Chavanné, 43. Col de l'Evêque, 3. Tête d'Olen, 11,508, 3.



A CUST. DEL. PETITES DENTS. GRANDES DENTS. DENTS DE BERTOL. DENTS DES BOUQUETINS. MT. COLON, 11,956, 2½m. LEVÊQUE, 12,264, 3m. PT. MT. COLON, 11,631, 1½m. BEC DE BLANCIEN, 12,146, 3½m. LA SCIASSO, 3½m. Dirn. of Arolla, 6,450? 2½m. Gl. de Pièce and Vuibez Rocks, 10,499, 1m. Ice-fall of Vuibez Gl. Col de Chermontane, 10,118, 1½m. or La Sengla. Gl. d'Otemma.

1876. Scale, Rad. circa 8½in. PANORAMA FROM THE PIGNE D'AROLLA, 12,471 ft. PHOTOGRAPHURE GOUPIE & C<sup>ie</sup> PARIS - LONDRES.

THE  
ALPINE JOURNAL.

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AUGUST 1876.

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ROCKS AND RAMBLES IN THE COMBE D'AROLLA.  
By A. CUST.

IT has been recently said, and with truth, that the love of the Alps has its root in higher cravings than those for mere adventure and novelty. There are other more 'odious' people than 'tourists' nowadays 'defiling' the mountains, whose only 'passport' to them seems to be a length of purse which enables them to hire a couple of guides to haul them into prominence, sometimes in a single season. For these, the true Philistines of the Alps, the poetry of the mountains has no charm; indeed, they seem sometimes hardly to know so much as their names. I came across a gentleman 'doing' the high-level route, who, when asked which of one or more alternative passes he was going to take, said that he really did not know; the guides had pointed him out some châteaux he was to pass next morning! At least, the 'tourist' confines himself to the valleys.

I write for the amusement of those who, like myself, leaving the 'bagging of peaks' and other great 'agenda' of the Alps mostly to their more fortunate or more skilful brethren, are therefore generally without vent for their feelings in the pages of this journal; and who are not ashamed to confess that besides mountaineering itself they seek in the Alps health of mind and body and æsthetic enjoyment.

Two previous descriptions of Arolla have cleared the ground, and impart a supplementary character to my task. Mr. Hamilton's account is probably well known to readers of this journal, while a recent number\* of the 'Saturday Review' furnished the general public with a good deal of information.

Now I have been brought up in profound reverence for the 'Saturday Review.' I should have a poor opinion of the

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\* August 21, 1875.

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mental powers of anyone who questioned its political sagacity, and should hardly credit him with any at all were he not to take for granted its logical infallibility; while the acme of literary fame would be to undergo dissection in its columns. It is then with a novel relish that I turn and bite the biter.

It is perhaps too much to expect of a paper which is acquainted with the ins and outs of European statesmanship that it should be equally conversant with the ups and downs of Alpine topography, but it might have been worth while to make sure of the accurate representation of the heights of, at any rate, the two principal mountains with whose description it was concerned. It is doubtless excusable to make Mont Colon 'rise to a height' of more than 300 feet above its due, for the mistake has its origin in a high authority; but what are we to say of a writer who, in describing the view from the Pigne d'Arolla, makes his summit the highest of 'this part of the Pennine Alps;' whereas its immediate neighbours, Mont Blanc de Cheillon and the Ruinette, are higher, the latter by 250 ft.; who apparently sees the Mischabelhörner through an intervening ridge, which almost entirely hides them; and who gravely states that 'from no other point of view does the peak of the Rothhorn look more tremendous as it literally flames up into the sky' (!) I appeal with confidence to the candid reader, whether there is anything tremendous or any symptoms of flaming up in the accompanying view of that mountain? Possibly our reviewer has a newspaper correspondent's faculty for vivid painting of unvisited spots; but the most charitable supposition is that—like some foreign tourists whom I once saw gaining for the first time the view from the Col de Balme, and after deigning to stop for one brief instant to look at it while they excitedly exclaimed to their guides, 'Which is the Mont Blanc? Which is the Monte Rosa?' retiring satisfied with the accustomed information to more substantial comforts—he drank in from some Zermatt guide the familiar names of his native valley, and saw the Rothhorn in the Dent Blanche. Fortunately, he does not venture further on 'what would be only a catalogue of names.' However—and here my dissecting knife makes quite a professional flourish—the bulk of the article contains a fair general description of the locality.

The panorama, of which the accompanying illustration is a part, took its origin on the lovely morning of July 27, 1874, when a large party, consisting of my friends Messrs. Cawood, Colgrove, and myself, then staying at Arolla, together with Messrs. Bonney, Foster, Pendlebury, and Taylor, on the wing from Zermatt, assailed the Pigne. We were seduced into

taking our 'Saturday Reviewer's' 'broad road,' which gave the guides the gratification of exercising their climbing powers on the Zinareffian rocks, in extricating their large convoy from his '*cul de sac*,' by which I presume he refers to the head of the Cijorénove glacier. In the latter we were certainly 'pelted' with water, though not with 'rocks,' from the glacier, and that we escaped 'destruction' was probably owing to the ignorance which prevented us from 'following the right way' not being of the perverse nature which modern expositors even of the most uncompromising creeds require before their penalties can take effect. I understood at the time that we ought to have ascended the rocks sooner instead of keeping near the glacier side, in which case we should have found a certain oblique ledge: the latter, however, I have vainly looked for, with the eye, since. On the top, the view from which was pronounced by so good a judge as Mr. Bonney to be one of the finest he had seen, I succeeded, in rather more than an hour, in collecting sufficient material to suggest afterwards the idea of publication, and in chilling the ardour of those who were good-natured enough (being roped) to wait for me. We reversed Mr. T. Brooksbank's route (A. J. VI. 366) over the Breney Col proper, and had our greatest adventure when we got to the bottom of the glacier of that name. For none of our mighty men or guides could find the way down to the valley towards Mauvoisin. We dispersed abroad, every man doing what was right in the sight of his own eyes, till from 'crag to crag the signal flew,' and Mauvoisin's steeps were 'bristling into axe and brand.' The true path, and I make bold to say I suggested it at the time, kept up along the level grassy plain in front, nearly as far as the châteaux of Gétroz, as was patent next day when with my two friends I returned to Arolla *via* the Gétroz glacier. I have shown the simplicity of the latter route in a recent number of this journal (vol. vii. p. 216). It shall serve now to introduce us to Arolla.

Time was when a well-known mountaineer on his way from the Col du Mont Rouge and Col de Cheillon, found 'a very narrow ledge of rock' . . . but it 'looked so ugly that we preferred keeping to the right and crossing the ridge at a higher level.' He was mistaken in believing he had crossed the Pas de Chèvres; so were some ladies 20 years later, who could not be persuaded that a pass they had crossed almost without assistance or climbing of any kind was of necessity not the 'Pas.' A mean between the two heresies gives us pretty nearly the true faith respecting the 'very narrow ledge of rock' which constitutes the Pas de Chèvres. An ordinary amateur

could climb up it alone, but would not care to descend it. To a small roped party it offers 5 min. amusement. On emerging from the Pas the stranger will receive his first impressions of the geography of the Arolla valley. On his left he has, separating him from the Col de Riedmatten, some picturesque 'dolomite' rocks of the same formation as the more important Monte Dolin, with which he is nearly at a level; in front the range of Dents, of which more anon. 'We now found ourselves,' says our writer, 'at the head of a desolate valley communicating with the Combe d'Arolla, savage with piles of broken rock and ghastly stems of scorched and withered pine.' While he praises the view of the Colon in descending, he wastes no remark on the Combe itself, and with unprophetic soul fails to point out its evident suitability for an Alpine hotel—probably because he had 3 hrs. yet between him and dinner.

No one in describing a place can divest himself of association; fortunately, my predecessors have saved me the necessity for trying. Suffice it that for me this nook in the Alps will ever smile.

Our descent from the Pas, as we were in good time, gave me an opportunity I had wished for of lingering in the woods above the hotel. We had left the regular path, which makes a bend to the left to avoid the woods, and kept straight down; and I remained behind my friends to sketch. These woods are of no ordinary kind. The broken undulation of the ground makes them no less difficult to traverse than picturesque. The rivulets that course through them seem answerable for certain banks or terraces which give foreground beauties a chance of collecting to contrast themselves with the sublimer distance of the Colon or the Pigne. The spot I selected may well enchant the loiterer; it has, methinks, few equals amid the high Alps. Stand back, ye profane! An invocation is due to the spirit of the place.

A small grassy plain of a curiously regular oval, various in all the detail that stump and shrub and stone can give, lies enclosed where the hill slopes away with a protecting terrace-bank. A sparkling rill flows its length, calling on you with babbling tongue to lie by its side and catch its cool breath. Trees of all sizes hang their branches athwart the blue sky, or contrast their rugged stems with the verdure below; here a battered dwarf, there in conscious grace and dignity the Arolla pine. It is a little world in itself. The eye gradually gets accustomed to its environment, and forgets the measurement of mountain angles. So satisfied are you with the graduated harmonies of a more lowly scale, that you are positively startled

when a chance opening or change of position shows you the mighty moraines sweeping up to the level of your forest monarchs, and guiding your almost unwilling eye again upward to the glaciers and rocks beyond; alike gleaming in the transparent air, whose hue you now appreciate. And yet scarce able as you are to realise these, you must go higher: higher than topmost pine, till your little world seems to sink away diminished from under your feet—to the bright haze of cloud and sky where floats the snowy dome of the Pigne.

The view obtained from the Pigne d'Arolla having only whetted my appetite, I made a point of returning to it the following summer. It is my firm persuasion that, if I cannot adorn a tale, at least I may have served for a text for a sermon. For after an almost unendurable snowing up at Zermatt—there was a foot of snow at the Riffel—my days in Switzerland being numbered, I made a push to set off with Weisshorn Biner after mass on a bright Sunday morning, and became, though my feelings were mercifully spared at the time, an object of much concern to a reverend telescopist at the Riffel as I toiled through the fresh snow, for fear I should escape the crevasse due to my sins, and so spoil an appropriate tract! A crevasse, however, would have afforded a luxurious respite from the yielding snow and scorching sun, which afflicted us in the tract beyond the Col de Tête Blanche, for the first time in my experience affecting my eyes, barricade them as I might, till I was like a blind man stumbling after his dog. In going from Zermatt, the latter Col appears to have some advantages over the Col d'Hérens, and certainly the forward views are finer. The puzzling properties of this snowfield in a mist are well known. The summer before last a Scotch lady bound for the Col de Bertol passed the afternoon and night on it, not far, I believe, from the route for the Col des Bouquetins. Being beset by a storm, and off the proper track, while the cold was very great, J. A. Carrel, her guide, performed the ingenious but arduous task of building a snow-hut for her in the open. A roof was contrived, and only a breathing-hole made by an axe-handle left, and it was found that sufficient warmth was preserved. The lady arrived at Arolla next day none the worse for her adventure.

Never in the Alps is the traveller more certain that his day's work is done than when he steps on that gentlest of ice streams, the lower Arolla glacier; never more certain the consolation that gladdens his eyes than when they light on the tiny speck of an hotel below its broad sweep. I found, besides the pleasant greetings which I had anticipated from the Juge and the

'Major,' three changes wrought by the past year. The bridges on the way to the glacier had been renewed so as no longer to test nerve and balancing power; the third story had been opened; and lastly, through the alteration of the hour to six, we were in time for dinner.

Next morning saw me trudging behind a lantern en route for the Pigne. The fresh snow rendered it an easy virtue to follow the orthodox ways. Two 'right ways' lead to our mountain. In ascending we rightly gave the preference to the Glacier de Pièce, which conducted us to a ridge at its head overlooking the Otemma glacier, whence an easy ascent on the right leads to the summit. The descent should not be made by this route, for (1) the glacier will have uncomfortably softened; (2) the moraines, far from becoming more beautiful, gain exasperating qualities from the full view of the hotel. It is my impression that a more interesting descent might be made from the above-mentioned ridge by the Vuibez rocks, the tops of which are seen jutting out from the Pièce snow in the illustration, to the Arolla glacier. These are practicable, and, so far as my observation goes, probably easy; with Mr. Cawood I gained a point level with the upper part of the ice-fall, but time prevented further exploration. I took the valiant Biner to look at them in descending on the second day, but he did not like the fresh snow; and besides we ought, I fancy, to have put our heads over nearer, or opposite to, the ice-fall. The alternative route to the Pigne is by the Pas de Chèvres and the Glacier de Cheillon.

The summit was beset by a biting wind, which rendered it imperative to descend a few feet to make sketching tolerable. The provision knapsack furnished me with a luxurious seat, while had Shakespeare had the opportunity of observing Biner patiently sleeping for hours on a coil of rope resting on a snow slope he would have added him to his objects of royal envy. I was making the best use of a magnificent view, when a phenomenon unique to me on so fine a day occurred. A hailstorm came down upon us from behind, obliterating in mist point after point of the view as I feverishly snatched its parting lines, and diluting in more tangible moisture the drawing as fast as made. The storm swept grandly away to the Matterhorn, as it might have swept from one of our Lake hills to another. Disheartened and temporarily baffled as we were, we were not driven from our post; and were able to show, by the interesting experiment of remaining in one position from 7.57 to 1.30, that the immediate proximity of a snow slope robs even a keen air of deleterious effects on the human frame. I had no thermo-

meter, but certainly towards the end, my knapsack having been given up when the storm suggested a meal, the temperature of the snow began sensibly to approximate to that of my body.

Next day, again favoured by the weather, we set off for Mont Cheillon, my hope being to cross it, and then reascend the Pigne. The two previous days, however, having taken the freshness out of us, and the Arolla side of the Cheillon appearing from the glacier difficult, if not impossible, from its overhanging mass of snow, while I had no particular object in making the ordinary ascent, I summoned moral courage to acquaint Biner that the Cheillon was to be given up and the Pigne revisited. Poor Biner's despondency showed itself shortly in a pathetic manner, when he broke the silence by ejaculating, with the air of a man going to be hanged, the single word 'Water!' I carried the cup, and his held-out hand left no doubt as to the meaning of what he was too disconsolate to encumber with polite excrescences.

Let us now turn to the panorama which is the sole excuse for this rambling article.

The traveller ascending the main valley from Evolena has in front of him a bold promontory of rock dividing this into two branches. The points next him are the Petites Dents, of which the extreme group bears the name of Visivir. Our sketch commences with the latter on the left, and the Oberland above them in the distance. A well-marked gap appears to the right on which I once spent several hours in solitude only broken by a couple of chamois on the Dents, skitching in a niche, with one leg, so to speak, over the precipitous declivity at the far side. A noble view of the Dent Blanche rewards the trouble of the ascent. To be alone with Nature in her wild recesses for a day is to let go the anchor and float down a stream of thoughts. One of the charms of Arolla is the accessibility of its walks and climbs, and the encouragement which it offers to the independent Rambler. Whether made alone (let me not be misunderstood, so far as I myself am concerned, to mean on any but easy ground), or better still with friends similarly inclined, such rambles, however humble, are fraught with an enjoyment all their own, and never wholly effaced from memory by more pretentious expeditions. The explorer at Arolla will find gratification whether he turns to the Vuibez rocks, the rocks W. of the Pièce Glacier, the Casiorte, which is accessible on two sides, the Vouasson (if the way be known), or to the range about to be described. A word is due in passing to the very pleasing view from the Vouasson. Stand-

ing apart from the main chain, interfered with only by the higher and far more rugged Aiguilles Rouges, it groups with success far objects and near, and lets the eye rove as happily from Monte Rosa to Mont Blanc as over the many-peaked Oberland, and along far-reaching lines of the Rhone valley to distant Tödi.

The Dents, Small and Great, Bertols and Bouquetins, forming one continuous barrier of rock to hem in the vast snow-mantle which droops from the shoulders of the Tête Blanche, are a notable feature of our valley. From the Bouquetins which are on the boundary line between Switzerland and Italy, they run northward in set array bristling with points. But like an embankment surmounted by a broken stockade, their barrier can generally be scaled, often with ease, and here and there crossed. The Grandes Dents, extending from the Petites Dents to the Glacier de Bertol, concern us most, and contain two summits of name, the Dent Perroc and the Aiguille de la Za, the latter of which looks straight down on the hotel. By their accessibility, variety of detail, and beauty of view, they rejoice the heart of the explorer.

On the occasion of my longest visit to Arolla I came industriously armed with a copy of the Federal Geological map, which enabled me to collect specimens greatly to my satisfaction and its credit. From a short way above Vex upwards, metamorphism is universal, the culminating point of change being reached in the rocks on either side of the Arolla Glacier. Two kinds of rocks form the mass of the Combe d'Arolla. First come the schists, a motley mob; the friable, dingy 'gris,' which extends from Evolena upwards, from which the upper Val de Bagnes derives its sombre aspect, interlacing with the more variously hued 'Verte' with its streaks of emerald green; then these are trodden under foot by the hard, clean 'Arolla gneiss,' which, commencing its sway with Satarne and the Petites Dents, knows no rival, according to the map, among all the peaks which feed the Arolla Otemma and Breney glaciers, save one small belt of 'gabbro'\* reaching from some of the Bertols through the upper part of Mont Colon to Pt. Mont Colon. Once only does the gneiss merge into a granite in a belt crossing the Arolla glacier, and forming on the one side the ridge reaching up to the S. end of the Grandes Dents, on the other the Vuibez rocks. Now the strata of the Grandes Dents, besides other rough

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\* See in the Appendix the notes kindly added by Mr. Bonney at my request, containing the result of his researches in the district subsequent to the visit mentioned above.

treatment underground had to undergo considerable torture from which they only emerged bent at right angles. The Perroc has its strata tops inclining southwards at some 45°; the S. end exactly reverses this. The combination of the two forms a striking object in the part of the ridge immediately N. of the Aiguille de la Za. As for the latter, the powers below seem to have found it a tough morsel, as it has resumed if not quite the inclination of its neighbour the Perroc, at least an upright compromise, while the rocks at its base are crumpled up like sheets of paper. Or if we may no longer picture it a shred of gneiss that has refused to bend, and our Aiguille be but the result of denudation, at least it may boast to be an example of the survival of the fittest; and, like some fossil Titan, the remnant of a struggling brotherhood, it rears a head defiant of annihilation. Beyond the S. end of the Grandes Dents appears (the pleasant meadows of the Prazgras furnished the view on which this description is based) in marked contrast with their regular lines, a blunt, chaotic mass descending to the SE. This is the granite referred to above, with whose name 'Arkesine' I leave Mr. Bonney to deal; and at first sight it looks as if it were responsible for the past torture of our poor gneiss strata; as if seething up from the infernal regions it had bumped them up with its head, jostled them out of the road with its shoulders, twisted them over on their backs as it wriggled itself into the light of heaven, battered them down and overlaid them with sprawling red-hot arms. If so, it too has succumbed to destiny in its turn, and shorn of arms and head survives but as a weather-worn and shapeless trunk. I fear, however, this theory, like many others connected with the lower regions, has received scant mercy of recent years. Granite loses much of its interest when we are told that it is only gneiss in a more perfect stage of metamorphism.

The poetic halo which Mr. Ruskin has thrown over the Montanvert ridge has inspired me with a profound reverence for the junction spots of the gneiss and the granite; and I hold it indisputable that all true worshippers of Mr. Ruskin and the poetry of the mountains are bound to clamber along such ridges. If I failed to reach the exact point of junction on the Grandes Dents, opportunity was more in fault than zeal. I approached it, at least, once by the arête from the top of the Bertol glacier; again by the top of the ridge of the Grandes Dents themselves. Scrambling along this, when momentarily parted from my friends on one occasion, I erected a diminutive cairn on the S. summit, though in too great haste for the enjoyment which this 'ridge of

shattered gneiss,' with its skeleton turrets and ruined pinnacles, should give. Anyhow, let those whom it concerns know that the Grandes Dents S. of the Aiguille, offering a magnificent view which I was unlucky enough only partially to see, can be scrambled along at pleasure, and ascended either straight from Arolla, or from the Glacier de Bertol.

Here are to be obtained specimens of gneiss in variety; some weathered to a light but rich fawn colour, fair to behold, while inside they are white as paper, with a partial tinge of a very faint yellowish green, of which sort I took a specimen from the base of the Aiguille, with the crushing bend of its layers visible in the space even of a few inches. Others delicately streaked inside, with pure lines of glistening green and white, which outside are partly weathered to orange.

To return to the Aiguille. My first attempt, made with Messrs. Cawood and Colgrove, though long contemplated and determined, was a failure, owing to the lateness of the hour, the mist and drizzle that dogged us for hours, and lastly inability to get further. We ascended by the Bertol glacier fruitlessly, wandered about the Grandes Dents, found the Aiguille, and stormed it in good hope. But when we had got about halfway up, Mr. Colgrove, who was leading, very wisely declined to go further at a point which, while easy going appeared a few yards above, was shorn of sufficient hold alike for hand and foot. This was on the E. side. We looked round at a ledge leading towards the left, but our spirits had now been damped; prudence prevailed, and we gave it up, agreeing afterwards that with happier times more might have been done. We groped our way back through the mist to the Grandes Dents, and descended straight to the hotel from the summit S. of the Aiguille, close by the arête, seen in my sketch, leading down to the Maja, night overtaking us before reaching the valley.

My second attack on the way back to Zermatt I have recorded in the last Journal. What more remains may now be told.

On the fourth day (Wednesday) of our outing from Zermatt, the much-enduring Biner and I paid our adieux and bill to the Juge, and stepped forth for the last time into the cold, dim twilight outside his hotel. Now, fearing accidents, I had not enlightened Weisshorn as to our route to Zermatt till the previous evening, when he appeared to comprehend and consent. Without a word, however, he now started off as if for the Arolla glacier, whereupon a colloquy of the following nature ensued.

I, having already faced the other way, exclaimed: 'Do you know where you are going?' He replied that he had been talking to the Juge, and the proper way was by the glacier. 'No,' said I, 'we are going up here,' pointing towards the rocks of the Aiguille de la Za. In vain he protested that it was impossible, and the rocks would tumble. I answered that I had examined the route, and felt sure there was a way. In short, he had to turn about and trudge down to the bridge and stumble upwards through the abominable pitfalls of invisible rock and brushwood at the other side with the air of a man resigned to his fate. Thenceforward he was passive docility; he hung behind, and his mien and voice were dejected. At the top he was obliged to confess that the route was all right, and by the time we had gained full sight of the base of the Aiguille his spirits had risen to a pitch astonishing in so prosaic a man; he literally took off his hat with a bow, and said 'Good morning, Mr. Aiguille!'

For one hour we kept straight up from the hotel, then for another inclining to the left, made towards some dark rocks seen under the Perroc in the view, most of the way being over good ground. We then ascended, skirting the near side of these, and afterwards going round them to the left again, till we reached the base of the final ridge, at the bottom of a plane of rock and snow, inclined to the right, and lying at a rather less angle than the strata. The edge of the plane is seen in the view, and had often attracted my attention as likely to offer an easy ascent.

Divided counsels lost us time here, and finally brought us out too much to the left, near the Point, marked 11,641 ft. on the S. A. C. map, so that we had to descend for about 10 minutes to gain the gap for which I had aimed, and which is conspicuous in the sketch. Here we halted for breakfast, and bottled our names, under the idea of being on the Col de la Za; but steep to the Mont Miné glacier shelved the other side, and between us and the Aiguille lay a narrow arête which, by our route, will have the better claim to the name.

The reflective Biner had by this time become original; his idea of our route being to descend to the Monte Miné glacier, and the valley below, and take some other pass to Zermatt next day. Fate, I explained, called us to Zermatt that night; there was a depression yonder in the ridge running E. for the mid-Bertol glacier, whence, as we were coming to Arolla, I had marked the descent. Weisshorn's faith, however, had waxed visibly since 3.30 A.M., and, at least, was sufficient to carry us along the arête that guarded the Aiguille. We roped now for

the first time, but had not much trouble to get to the base of the Aiguille. Biner had pronounced the rocks straight below my gap impracticable, but gave a verdict in favour of the gully on our side of the Aiguille. From the account, however, of the person who ascended it with the Juge, there may be risk from stones. Doubtless it is the most direct way; what I claim for mine is that it is one of two safe and easy ways by which the ridge may be gained, the other being by the Maja arête. As for the still more direct gully or gap S. of the Aiguille, Mr. Kennedy had much the same opinion of it as I. He, in ascending the Aiguille with Fischer, avoided the slope leading to the gap as unsafe, taking to the Grandes Dents, and thus following the route by which we descended, as above mentioned.

Leaving our axes, we proceeded to tackle the Aiguille. We tried the same side as I and my friends in the previous year. To my great satisfaction the valiant Weisshorn struck at the same spot at which we had—with this difference, that he declined it without climbing himself to so high a point as Mr. Colgrove reached; at which I chuckled inwardly. We then worked round to the left above the ledge we had then thought of, and stopping just short of the SW. arête, ascended again by some 12 ft. of steep rock, the only real difficulty we had to surmount. In fact, like other objects famous only among local guides, the Aiguille is somewhat of an impostor. Half an hour each way sufficed, and there was, with the above single exception, good foot and handhold. Biner clambered up the difficult place without much trouble, and then, having selected a knife-edged rock of peculiar sharpness, he was proceeding, under pretence of assisting my upward progress, to accomplish my speedy death by cutting the rope, when my protests upset his arrangements, though not his philosophic composure. Thenceforward all was comparatively plainsailing; we again got round to the E. side, and thence to the top. We allowed ourselves 10 m. here to scrawl a few lines as a memento of the view, read the cards of the previous travellers who had thought it worth while to record the fact of their presence, and add our own.

In descending, Biner made a double with the rope at the mauvais pas, which might, I thought, have been avoided by getting on to the arête; while we varied the route by making for the knob of rock jutting out from the S. side.

The snowfields, though soft, were even; we skirted the edge of the Bertol glacier, and no ascent, I think, was required to reach the ridge I had pointed out. An easy descent on the other side led to the Col d'Hérens route.

The end of the above ridge appears in the view as a trian-

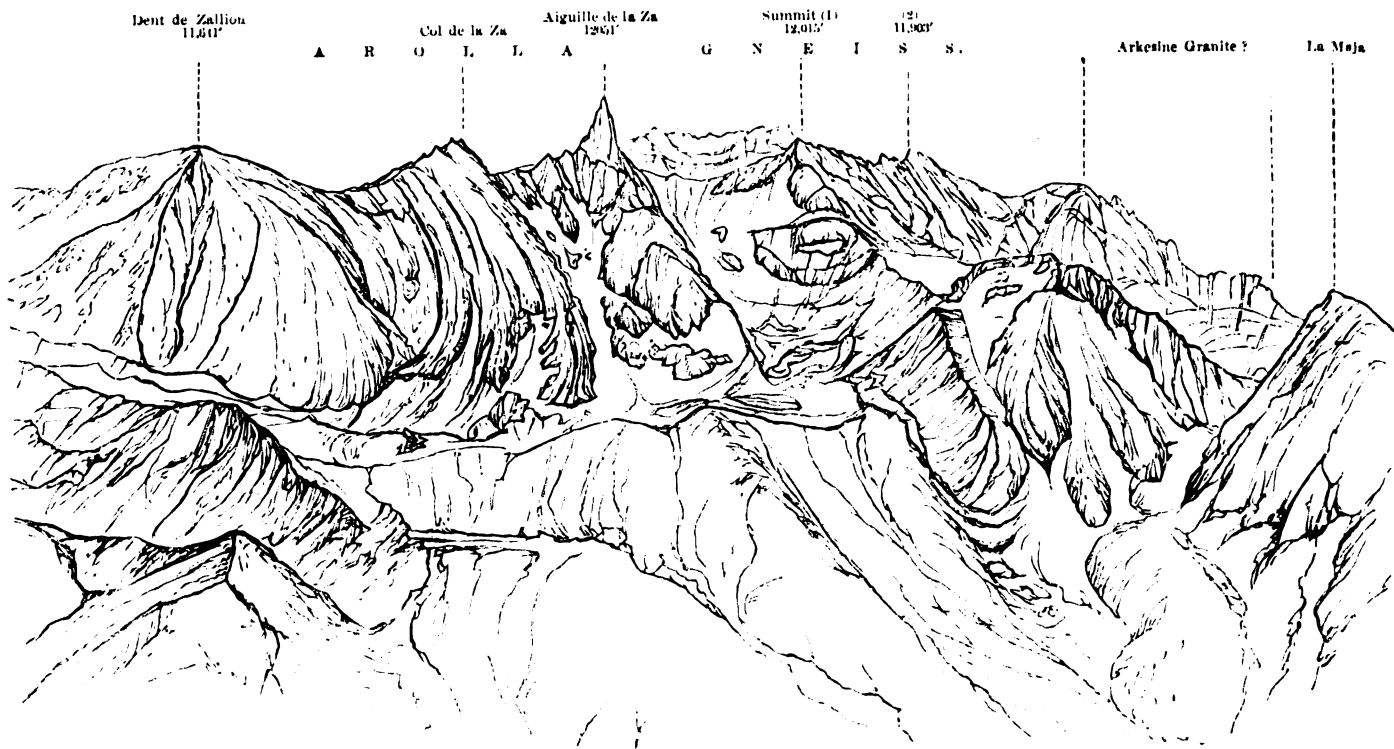
gular mass of rock dividing the snows at the head of the Bertol glacier; the Col de Bertol lies beyond a smaller piece of rock to the right of it. The ascent to the latter from the Arolla glacier avoids the stream, taking a course parallel to the latter from a point a little higher up the glacier. To the right of the col commence the Dents de Bertol, forming a broken but well-defined group, of which the highest peak recedes back eastward. It is unfortunate that they and their distinctly marked southern neighbours are merged under one title of Bertol on the Federal map, and also the newer maps of Mr. Reilly and the Alpine Club. The Dents des Bouquetins fully deserve their separate appellation. The highest of the varied range of Dents, they alone of them form part of the main chain of the Alps, while their bold and elegant outlines show well from the slopes of the Tête Blanche, and impart a character to the Arolla scenery. They are able to look down on their more boastful neighbour across the way, Mont Colon, having no rival in height between the Dent d'Hérens and Mont Blanc de Cheillon.

From the Pigne also Mont Colon is sunk, and in some lights I can imagine strangers taking its table-top for a prolongation of the Dent d'Hérens' snowfield. 'Look on this picture and on that' in vol. vi. of the 'Alpine Journal,' and compare the days when Mont Colon was a sort of Aiguille du Dru, with the present, when it is the bait offered to stayers at his hotel by the local guide. The ascent is made by the arête facing us, the right side of the latter being taken in the upper part. Under the escort of the Juge, Mr. Colgrove and I made the tour of the mountain. From the Pièce glacier and Col de Chermon-tane we reached the Col de l'Evêque, as it ought to be called, instead of Col d'Arolla as in the Alpine Club map. It is seen as a gap to the right of some rocks SW. of the Evêque. From this we were able without difficulty to get round to the head of the Arolla glacier. The other sides, however, of Mont Colon are not striking, and, like a Roman church, while it presents a noble façade to the piazza, rearward it retires in humbler architecture till it loses itself in other structures. Or rather, it is not till you get out from under it that you recognise the fact that the façade is crowned by a dome in the background. In short, Mont Colon is nothing but the braggart buttress of a ridge whose supreme point is l'Evêque.

It is singular that the three principal objects which now fall under our view in surveying the head of the Otemma glacier are unnamed on the Federal and Alpine Club maps. Nearest us is the island of rock and snow, well called the Petit Mont

Colon. Beyond to the left and right rise in rival dignity l'Évêque and the Bec de Blancien. The first, retiring as it is, is a well-known feature in many of the Arolla views, and claims individual recognition by its graceful form, as well as from its being in fact the highest summit of the range between the Glacier d'Otemma and the Val Peline. It is easy of ascent, I believe, and must command a fine view. Mr. Reilly has passed it over, but for the name Blancien he is responsible, as the Swiss Alpine Club map, worked out with considerable care and research in the Arolla district, with a confusion of names characteristic of the Otemma peaks, styles the mountain so-called by him—the second in height in the whole range—la Sengla. Immediately to its NE. is a depression bearing on Mr. Reilly's and the Swiss Alpine Club (if I am not mistaken) maps the name Col d'Olen, but called in the 'Alpine Guide' and on the Alpine Club map by the long-familiar name Col de la Reuse de l'Arolla. It seems to me unfortunate that the name Arolla should have been established S. of the Col de Chermontane. But not having personal knowledge of the Otemma glacier, I will not further supplement my panorama, the nomenclature of which will follow Mr. Reilly's map.

On the more distant view I need not dwell in detail. The Weisshorn does not show to advantage to those who remember its unrivalled Eggischhorn aspect. The Dent Blanche and the Matterhorn stand out nobly; the latter, however, was profanely likened by my friends to a Welsh church. Monte Rosa is clearly defined, cut in twain as it is by the sharp point of the Dent d'Hérens. I had great difficulty, however, subsequently in making out the Pigne d'Arolla from Monte Rosa, for the king does not always see the cat so easily as the reverse. The Breithorn is lumped with the Lyskamm, but a little to the left of it. The Dent d'Hérens, with the snows at the head of the Val Peline, are clearly seen. In Italy, I have vainly tried to discover the heights of the mountains, even of such as the Bec de Fontanella and the Redessan. I fancied I caught sight of the plains to the right of l'Évêque, and again to the right of the Petit Mont Colon. The Graians of course distinguish themselves, even the Becca di Nona being visible. The giants of the West are not so fortunate, the huge rolling snows of the Serpentine range rising up nearly to the level of the eye, and cutting off the base of the Combin, while the latter in turn takes vengeance on Mont Blanc just to its right. Next on the right of these, prominence is claimed by the Ruitor and Mont Blanc de Cheillon. Mont Pleureur was the last point included in my sketch.



THE GRANDES DENTS, FROM THE PRAZOGAS ALP (SHOWING TWISTED GNEISS STRATA).

A. Cust del.

The East and South present an unbroken expanse that for grace of form and colouring, and variety of detail, can rarely be surpassed.

## APPENDIX.

Since writing the above article, I have been fortunate in obtaining access to the S. A. C. Jahrbuch for 1858-1869, containing accounts of excursions in the district from 'Mont Combin to Mont Colon.' Dr. Baltzer, one of the most daring of his club, gives a spirited narrative of his ascents of the Blancien and l'Evêque, neither of which, as appears from the account, had been successfully attacked before. The former mountain has two summits, separated by a ridge  $\frac{3}{4}$  m. in length, and of a difficult nature. Both of these were reached by Dr. Baltzer. The latter uniformly speaks of the Mont de la Sengla, though the south summit (12,015 ft.), which may partly be seen in our view to the right of the main summit (12,146 ft.), and which from below Dr. Baltzer thought the higher, bears on the S. A. C. map the name Blancien. Owing to the lateness of the hour he had to sleep out at some rocks near the base of the mountain towards the Otemma Glacier. The same fate befell him on the way to Arolla after an ascent of the Bec d'Epicoum, which also he was the first to make. It is graphically told how the party, hopelessly hemmed in by crevasses amidst the growing darkness, hailed with delight as a refuge the rocks which sever the Vuizez Glacier. In the morning they descended the icefall.

Dr. Baltzer made the ascent of the Pte. de l'Evêque (Bischofsspitze) without guides, reaching the summit from the ridge to the east, without being deceived by a lower summit which he seems to have passed. The view from the top he was inclined to consider the most beautiful in the district. He was surprised to find an echo six times repeated, a thing noticed by others also near the Col de Colon. The Pte. de l'Evêque is a later name for what seems to have been formerly regarded as the '*höchste Spitze*' of the Colon-group: so Dr. Baltzer, who however uses the later name, also speaks of the three main points of the group as *Vorderer*, *Mittlerer*, and *Hinterer Colon*. It is possibly this idea which led to the misleading figures (12,264') attached to Mont Colon in the 'Alpine Guide.' The A. C. map, following the Federal map, affixes the correct height, 11,956', to the mountain which frowns over the Arolla Glacier—the *Vorderer Colon*—but effectually extinguishes its more modest neighbour l'Evêque. The hotel is visible from the summit of the latter, and another writer, Professor Zähringer, enthusiastically exclaims: 'Happy Valley, where the Bishop day and night looks in at every window!' The portrait of his reverence is given in vol. vi., 'Alpine Journal,' with a truly episcopal indefiniteness of character. I am half inclined, however, to believe that our mountain does not owe his title to his own configuration, but to that of a lower point Colon-wards, *Mittlerer Colon*, which from certain points of view in the Arolla Thal, e.g. the Vouasson, is not unlike a mitre, and may have been mistaken for the highest point.

Speaking of the great retreat of the glaciers near Arolla, except the Cijorénove, Professor Zähringer mentions that a drawing by Forbes, made in 1845, shows plainly that the Arolla glacier was higher then than now, while the people dwelling near affirm that it was earlier so high as to conceal Mont Colon from the Arolla huts. The Professor shows that the idea is not an unreasonable one.

With respect to geology, I simply followed the lead of the survey map. Herr Ritz mentions that according to a communication received from Herr Gerlach, the main mass of the Colon consisted of fine-grained and coarse-grained gabbro, and only on the northern side do gneiss and crystalline schists appear. He obtained specimens of these rocks from the moraines below, together with a 'schönen Arkesin-Granit,' perhaps derived from l'Évêque. He speaks of the summit of the Vuibez rocks as consisting of talc-gneiss, and there was among other rocks a 'Schiefriger Talkgneiss' on the Col de Mt. Brûlé. Mr. Bonney informs me that he suspects the 'Arolla gneiss' of the map is mainly what this writer calls talc-gneiss. Dr. Baltzer found a great variety of stones on the moraines of the Cijorénove and Pièce glaciers, viz., kinds of gneiss and chlorite-schists. He notices a peculiar great concretions of chlorite in a chlorite-gneiss. The summit of l'Évêque consists of a greenish, strongly foliated, coarse-grained gneiss. A specimen showed 'sehr schön grauen Quartz und weissen Feldspath neben einer grünlichen Substanz.' The Col de Colon has exactly the same rock.

The map makes the Aiguilles Rouges consist of 'gabbro' above 'Schiste Verte;' I traced the latter to its close, and sent a specimen of what I obtained from some part of the mountain above to Mr. Bonney. The latter believes that the white mineral which it contains is one of those felspathic minerals lumped together under the name saussurite, often seeming to be impure or rather altered felspar. 'The greenish mineral is partly talc, more mica, and probably a little serpentine. I thought it might be a smaragdite gabbro (Eupholide), but I think there is little or no smaragdite. It is either an altered gabbro, or a highly metamorphosed rock, like a gneiss without quartz.'

Referring to my mention of granite, Mr. Bonney says, 'I do not think there is any granite on the Montanvert—nor can the granite be on the Grandes Dents—what some authors have called granite on the Montanvert is protogine or granitoid gneiss. I think, however, I understood from him that he did not examine the Vuibez rocks *in situ*.'

Herr Wolf speaks of Arolla-gneiss as a name for 'Glimmerkalk-gneiss.'

The Aiguille de la Za was first ascended by the 'tüchtige Gensjäger,' Pierre Vuigner with five other Evolena guides (Ritz). In chronicling which ascent M. Ulrich adds 'a veritable *Kletterpartie*, still harder than the Matterhorn, only less high!' I have often wondered what the name *Za* imported. It ought to be considered in connection with the châteaux of Zallion, directly under the Aiguille, and the Dent de Zallion, between the latter and the Perroc. Then there is the *Za* de l'ano (=Zatalana, Federal map), on the east side of the Eringerthal (cf. Col de Zaté north of same). A similar name occurs in the glacier

de *Za-de-Zan* (Ritz), or *Za des Zas* (Zähringer, who explains it as = 'la plaine de plaines = la grande plaine'), which forms the level upper basin of the Arolla glacier; and in the glacier de *Zardesan*, written on the S. A. C. map, *Cià des Cians*, at the head of the neighbouring *Valpelline*. By the latter glacier are the châteaux, called *Belle Cià*, giving their name also to a 'Tête' above. Lower down the valley is a ridge called *la Cià*. *Za, Cia, &c.*, I am informed by Mr. A. Reilly mean 'meadow.' A similar interchange of consonants takes place in col de *Chermontane*, written by Ritz *Zermontana*, and in one of the curious names with which the Combe d'Arolla perplexes the traveller, glacier de *Cijorénove*, written *Zigiore-nuove* in the *Jahrbuch*. To the meaning of the latter I have no clue. Again, part of the ridge between the *Aiguille de la Za* and the *Col de Bertol* is called *Dauva blantz = Arête blanche*; the glacier below, on the west, being styled 'des *Doves Blanches*' on the S. A. C. map.

Another explanation of *Za* has been kindly given me by the Rev. W. Capes. '*Sa* is frequently used for *sac* in Swiss patois, and *sa d'aigue = sac d'eau* is often used for a hollow where water or snow collects. In the plural *sa des aigues* would, by dropping the *g*, which tends to become evanescent, be *sa des aies*, which in common talk readily passes into *Za des Zas*.

Of *Zinareffian* I have seen no explanation. Mr. Capes, however, mentions the word *Refta* in Valais patois = *take breath*.

According to Professor Zähringer the patois of the *Valpelline* has a great resemblance to that of the *Eringenthal*. *Combe* is used for side valley throughout *Valpelline*, and occurs in *Valtournanche*. It 'comes,' Mr. Capes informs me, 'from a Celtic source: we have the word in English uses.' *Arolla = arve*, 'common in the Valais dialect.' *Pigne*, I presume, is patois for *Pigno*; I have not noticed the word elsewhere.

The names in the ridge separating the glacier d'Otemma (also written *Hautemma*) are very puzzling. *Col d'Olen* should be considered settled, for Mr. Reilly informs me that he so rechristened with Mr. Tuckett's permission the pass which the latter christened *Col de la Reuse d'Arolla*, 'as the glacier, or *Reuse d'Arolla* should certainly belong to the village of that name on the other side of the range, whereas the small lateral valley near *Prerayen* into which the pass leads, is called the *Combe d'Olen*.'

Taking the peaks in order from the *Bec de Blancien*, in a south-west direction, we have (1.) *la Sciasso*, the only undisputed point, (2.) *Bec d'Epicoum* (11,647'), A. C. and Reilly's maps, = 3,550 Federal map = *Oulie secca*, S. A. C. map (*cecca*, *Baltzer*), (3.) *Bec de Rajette*, A. C. and Reilly's maps, = *Bec Epicoum* (11,572') Federal map, and S. A. C. map. It was first ascended by *Weilenmann*. (4.) *Bec de Ciardonnet*, A. C. and Reilly's maps = *Trouma de Boucs* (11,149') *Ball*, p. 281, S. A. C. map? Federal map (apparently) with height 3,398 = 11,148'. Mr. Reilly says he has some recollection of having, as he supposed, identified the '*Trouma de Boucs*' as a narrow cleft in the ridge above the *Crête Sèche*, through which he was told the *chamois* when disturbed on one side of the range passed to the other, and of having altered the position of the name accordingly.

In the panorama the following names are suggestions of my own. *Mitre de l'Evêque* for the Mittlerer Colon (see above), *Tête d'Olen* for the snow summit between the cols d'Olen and l'Evêque, marked 3,535 (11,598'), *Tête de Valpelline*, for the nameless shoulder of the Dent d'Hérens, marked 3,813 (12,510'), between which and the *Tête Blanche* lies the *Côl de Valpelline*.

The panorama had to be made out from scattered sketches, and the piecing these together and reducing to a common scale was a matter of no small difficulty. The relative angles of a few leading mountains, I obtained, with as much accuracy as I was able, from the map. The others were filled in as satisfactorily as circumstances permitted. The relative heights were studied as closely as possible in connection with the distances, but I found it impossible to satisfy myself altogether about these, especially as some of my sketches were rough and hasty. Some of the details or filling in, and a few points of more importance are necessarily imperfect and, I fear, inaccurate, for I was obliged to supplement my actual drawings in parts by memory, or sketches from similar points of view, and in some parts bow to what apparently ought to be. Among points where I was most deficient in knowledge may be mentioned, the ridges on each side of the *Glacier de Dauva Blantz*, parts of the *Bertols*, and l'Evêque. I hardly satisfied myself about the relative heights to the rest of the panorama of *Mont Colon* and the ranges to the right of it, which I felt obliged to make lower than my sketches apparently placed them.

The drawing will give the view of the horizontal magnitude actually apparent to the eye, if the paper be held at a distance of about 8·6 in. from the latter.

The drawing was not originally intended for reproduction by a photographic process, and there will probably be some inevitable defects on this account.

In the illustration from the Prazgras, the wood-engraver has exaggerated and, I think, to a slight extent attenuated the *Aiguille*. To the immediate right of the latter the ridge is of a conspicuously light-coloured rock, the attempt to represent which in the engraving may create a false impression of distance. Similar rock occurs where I pictured to myself, wrongly as it seems, the junction of the granite with the gneiss to be. From this lightness of colouring must have come the name *Dauva Blantz*.

The following note is kindly communicated by the Rev. T. G. Bonney:—

DENT PERROC AND AIGUILLE DE LA ZA.—The structure of the rocks in these peaks is very remarkable. Great curving schistose strata sweep down from the latter, and as far as I could see they were as drawn, but the middle part was not distinct. Under the *Dent Perroc* down the valley were some rather shaly strata, looking like a case of fan structure. . . . Went up the *Arolla* glacier to look for the gabbro *in situ* on the right bank. Either the glacier has covered the place or the map is wrong, for I could not find it: all is *Arolla* gneiss. This rock is very variable, and the only common character is an inclination to a

green colour—that which comes down from the direction of the Glaciers de la Pièce and Cijorénove varies from a compact green schist, with but little quartz or felspar visible, to a very handsome coarse gneiss, with pinkish felspar and green mica, with rather a talcose aspect. From the neighbourhood of the Vuibez glacier, and apparently from the same glacier as above, comes a curious variety which is of a generally pale green tint, and seems to contain epidote as a constituent. Certainly this is sometimes present as an accidental. The gneiss, where the gabbro should be, has a marked dip down the glacier, which continues all along down the Arolla Glacier. It is very variable in character, coarse to fine—sometimes a dark micaceous schist, sometimes a greenish coarse gneiss, and in one place is a boss of rock rather like a hornblende granite. The stream descending from the Bertol glacier, according to the map, marks the division of the Arolla gneiss and the Arkesine granite. This it does not—the rock below it is indeed rather contorted, porphyritic, and showing slicken sides, but yet gneiss. One variety was dark and granitoid in aspect, but on examination proved to be foliated: it seems to consist mainly of a white felspar and hornblende. In one place the crystals of felspar in the gneiss were 1 to 2 inches long. At last I came on what they call, I believe, Arkesine granite, but only a small patch. I could not quite satisfy myself as to the junction between it and the gneiss, the latter appearing to become more granitoid near it, but the junction was not clear. However, it certainly includes two masses, one several feet long, of dark schistose rock, and has the appearance of a pale-coloured vein granite, so that I incline to think it a true granite. There seems to be but little of it.

*Arolla Gneiss.*—The green variety, under a lens, appears to consist of quartz, felspar (not clearly crystallised), chlorite, and perhaps some epidote. It is, however, possible that much of the green colour may be only due to the staining of the felspar by a chloritoid mineral in very minute grains.

The coarser and pinker variety.—Quartz (distinct), pale pink felspar (orthoclase fairly well crystallised), a green magnesia silicate—some of it, I think, a variety of chlorite, some more like talc, very likely both occur, but too minute to be quite certain: and almost certainly some minute epidote.

*Green Schist* (of the Swiss map) appears to be a very fine-grained schist, rich in chlorite, i.e. what would generally be called a chlorite schist.

*Arkesine Granite.*—The usual aspect of a vein granite, quartz, and felspar, not very distinctly crystallised—little else; a little green magnesia silicate, very probably the result of decomposition of small quantities of biotite, and a few minute columns (of hornblende?). I really see nothing very exceptional in this granite to entitle it to a distinctive name.

*Gabbro.*—This consists of two varieties—the finer grained consisting of a plagioclase felspar of greyish colour, not very distinctly crystallised, and brown diallage, changing often to green (by decomposition probably). In the coarser variety, the rock consists of a white mineral of rather saccharoidal aspect, and a dark green mineral, with occasionally a

metallic lustre on the cleavage planes, in irregular columns or thick prisms, some of it rather resembling diallage, most hornblende. A microscopic section of the greener variety shows it all to be hornblende. The white mineral cannot now be well called felspar, probably it is nearer to saussurite; but it may, however, be a decomposed and metamorphosed felspar. One of the gabbros, which I have collected from near the Lizard (Cornwall), shows exactly the same change in both minerals.

AN ASCENT OF THE MONTE DELLA DISGRAZIA FROM  
CHIAREGGIO IN THE VAL MALENCO. Read by F. T.  
PRATT BARLOW, before the Alpine Club. March, 1876.

THE northern face of the Monte della Disgrazia as seen from the Bernina group, or from the southern slopes of the Muretto Pass, is perhaps the most striking object in the Alps with which I am acquainted—always excepting the Matterhorn. At the same time, the ordinary tourist hardly knows of the existence of such a mountain, so shut in is it by a network of unfrequented valleys and second-rate ridges.

Still and I had never lost the recollection of its glories as seen from the top of the Sella Pass in 1868, and it was with the intention of claiming a closer acquaintance with them that we made for Pontresina last August.

Our party consisted of Mr. S. F. Still and myself, with Jakob Anderegg and young Peter Taugwald. Two other Club men, who accompanied us from England, would have doubtless joined in all our expeditions had they not been most shamefully thrown over by Christian Bohren, of Tricholegg, Grindelwald, who had engaged to meet them at Pontresina, and whose delinquency I am glad of having this opportunity of recording. As guides of sufficient class were not procurable in the Engadine to supply his place, our friends' tour was utterly spoilt.

It is probable that our mountaineering programme would have suffered somewhat, had not the state of our guides demanded immediate action, for Pontresina never before seemed so charming as it did this year, partly from the glorious weather, which greeted us everywhere in Switzerland last autumn, partly also from the numbers of pleasant English people who were there congregated.

Both Jakob and Taugwald, who had only come to the Engadine under pressure, were rapidly wasting away before our eyes. Jakob assured us with tears running down his cheeks that all the food he could get consisted of flies and hot