We were heartily glad to set off again at 4 A.M. As quickly as our stiff joints would allow us we clambered back to the right track, and hurried down to the Festi glacier, where we met a party on the way up the Dom, though they were later driven back by weather. We found our lantern on the moraine all right. Then it began to snow, and the clouds came down lower and lower. We went straight down to the Randaierbach. Then the snow turned to rain. We descended along the side of the stream, which was bridged over by the remains of an old avalanche; traces of a recent fall lay on the old dirty snow, and could be seen in the gorge, through which roars the stream from the glacier. The fact was that while we had been up on the heights a huge avalanche had come down, which shows that even here one must be on the lookout. We halted from 9 to 11 in Randa, and then drove up to Zermatt, where two famished mountaineers committed such frightful ravages on the good things set before them at the Monte Rosa table d'hôte, that we have a well-founded suspicion that Herr Seiler did not make large profits, if any, out of the lunch that day.

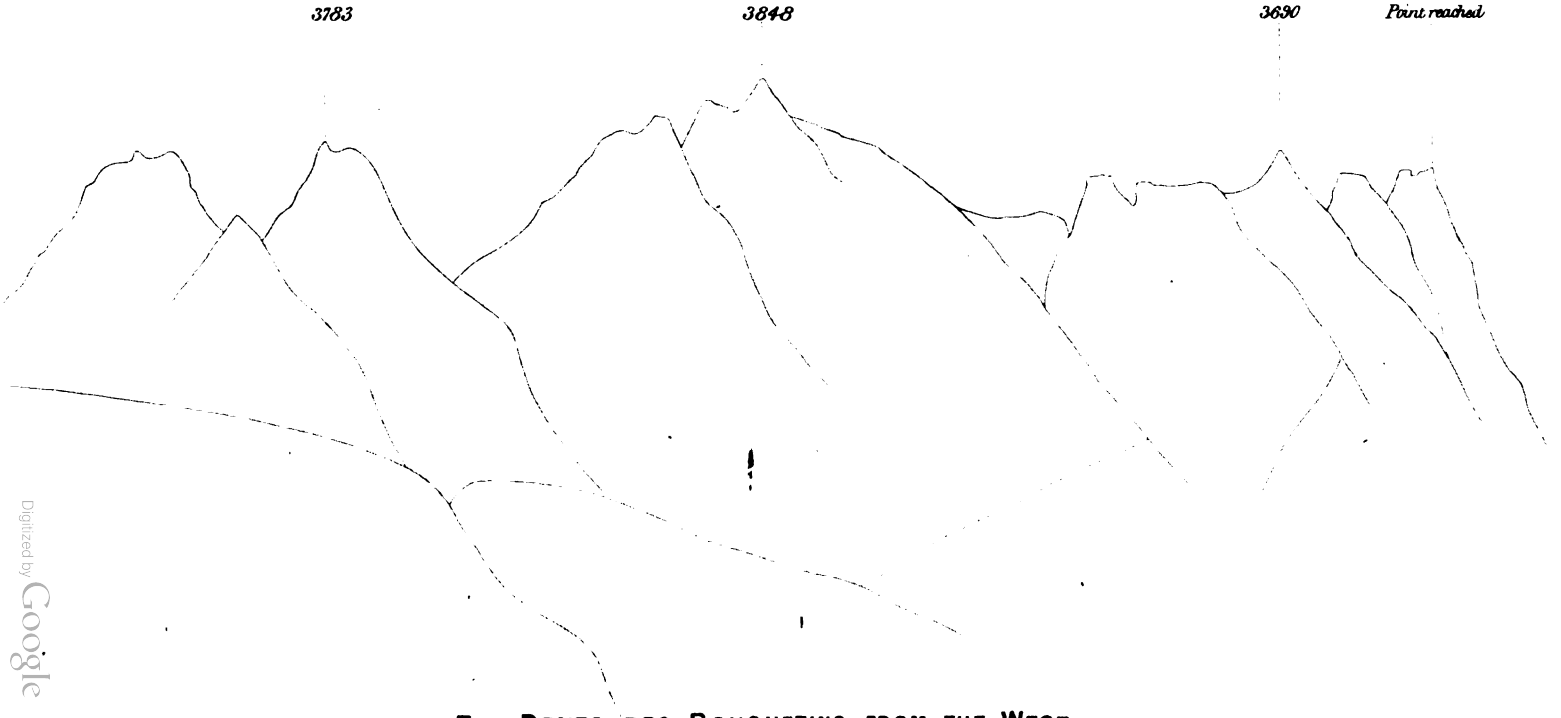
The Dents des Bouquetins.

By G. S. BARNES.

(Read before the Alpine Club, March 6, 1888.)

TOWARDS the end of August, 1887, I arrived at Arolla. I had no aim or ambition except of doing nothing in particular for a few days. In making plans for laziness, however, I had counted, I will not say without my host, but without my fellow guests. The energetic importunities of Mr. Cecil Slingsby soon prevailed, and it was settled on the day of my arrival that I was to undertake a joint venture with him and Miss Blair Oliphant. Each of us was allowed to impose one condition on the party. Miss Oliphant, for whom the unknown has no terrors, desired that the expedition should be an entirely new one; and Slingsby, who had recently whetted but had not satisfied his appetite for guideless expeditions, insisted that we should take no guide; I was allowed to bargain for the luxury of a porter, but only on the understanding that he was to be strictly confined to his 'portorial' functions.

These details were arranged, but we had not yet found our



THE DENTS DES BOUQUETINS FROM THE WEST.

peak, and the next day Slingsby and I went out to prospect. We came to the conclusion that one of the minor peaks of the Dents des Bouquetins (marked 3,690 on the Federal map) would give us a good climb, and would probably not be beyond our powers.

The range of the Dents des Bouquetins forms the east boundary of the upper Arolla Glacier, and is remarkable for the steepness of its sides and the jaggedness of its outline. Its main arête is studded all along with sharp needles of rock, and looks like an importation from the Chamonix district. Geographically it is a continuation southwards of the great curtain of rock to the east of the Combe d'Arolla, of which the Aiguille de la Za and the Dent Perroc are the best-known points. From near the point 3,783 southwards it is the boundary between Switzerland and Italy, and forms a link in the main Pennine chain of the Alps.

Although the Dents des Bouquetins considerably surpass in height both the Aiguille de la Za and the Dent Perroc, they have been but little visited by mountaineers. So far as I have been able to ascertain, the whole number of expeditions made on any part of the range, including our own, is only seven; I therefore propose briefly to sketch out the history of the range from a mountaineering point of view.

The first ascent of the highest of the Dents des Bouquetins, marked 3848 on the Federal map, was made by Mr. A. B. Hamilton on September 6, 1871.* Mr. A. Cust made the second ascent on August 10, 1876,† and from that year, with the exception of an ascent on September 1, 1885, made by Mr. H. S. King, which I shall have to refer to later, the peak apparently remained unclimbed until August 16, 1887, when Mr. Walter Larden made the ascent, and found Mr. Hamilton's and Mr. Cust's cards on the top, and theirs only. All these parties followed the same route, crossing the Col de Bertol and attacking the peak from behind—that is from the east—and, after reaching the little col between the point 3,783 and the highest point 3,848, followed the arête in a southerly direction to the top. A few days later, on August 27, 1887, a large party, consisting of Mr. Slingsby, Mr. Fox, Mr. Legh Powell, and Captain Herbert Powell, with Martin Vuignier and Maurice Gaspoz as guides, made a variation on the orthodox route by avoiding altogether the little col above mentioned, and striking the arête very little to the north of the point 3,848. Their ascent, in fact, was made by the east

* *Alpine Journal*, vol. vi. p. 28. † *Ibid.* vol. viii. p. 140.

face almost direct to the top of the mountain. These five are the only ascents which have been made of the highest peak.

Of the second peak in height (3,783 on the Federal Map) the first ascent was made by M. Monnier, of the Neufchatel Section of the Swiss Alpine Club. This expedition is recorded by M. Monnier in the visitors' book at Arolla, and from there has been translated into Mr. Larden's MS. guide-book. From this latter source I have taken my information.

The translation runs as follows:—

'First ascent of this N. peak (3,783 m.), August 8, 1884. Started from hotel at 4 A.M. with J. Quinadoz as guide. We arrived at 6.10 A.M. at the foot of the Dent on the East moraine of the Arolla Glacier. We ascended directly towards the North group of the Dents; following first the large snow couloir to the South, afterwards crossing the rocks to the left, and gaining the arête which separates the two parallel couloirs lying more to the North. This route led us to a little col situated between the first and second of the North group of the Dents (reckoning from the South, *i.e.* from the principal col which divides the chain of the Bouquetins, and which separates the North group from the middle one). This col we reached at 10 A.M. The rock is good, but we found it glazed with ice. The highest peak of the North group (consisting of four summits) is the third, reckoning from the South. This is reached by the West arête, partly on rock and partly on an ice-slope, on which about twenty steps had to be cut, and finally by two chimneys. We arrived at the top at 12.10 and erected a cairn; the descent requires much care, especially toward the lower part of the rocks. We left the top at 12.45, reached the Arolla Glacier at 4.5, and the hotel at 6.10.'

M. Monnier does not appear to have published any record of this ascent, except a meagre note in the 'Echo des Alpes for 1884,' p. 332, to the following effect:—'Cime Nord des Dents des Bouquetins (? 3,700). 1ère ascension.' The only other ascent of this peak was made by Mr. H. S. King on the 1st of September, 1885, who mistook it for the highest peak in a snowstorm. He found M. Monnier's cairn and then proceeded, by way of the little col referred to above, along the arête to the highest peak.

It is not easy to gather from M. Monnier's account, which I have already quoted out of the Arolla guide-book, the route which he followed. It would seem, however, that the 'large snow couloir' which he mentions is the one which lies to the south of the most northerly group of the Bouquetins, the highest peak of which is marked 3,536 on the Federal Map. From a point not far distant from the head of this couloir, M. Monnier appears to have followed the north-west arête to the point 3,783.

Now I propose to turn to the last of the seven expeditions with somewhat more detail than the five which preceded it.

Starting from the hôtel at 4.40 on the morning of the 30th of August we reached the Arolla Glacier at about a quarter past five. Proceeding straight up the Arolla Glacier towards the Glacier de Za de Zan we skirted closely the point 3,097 in the Federal map. Our intention had been to cross the Glacier de Za de Zan and the Col du Mont Brulé and to attack our peak by the East face. In making this plan we had been influenced by the belief that no one had climbed the West face of the main range at any point, and we thought that the East face was less precipitous.

The Dents des Bouquetins follow the rule observed by all the principal peaks in the Arolla district in that their most accessible side is that which is furthest removed from the Arolla Hôtel. Sometimes it happens that it is the east face which is the easier, sometimes the west, and sometimes the south. But, whether it is east, west, or south, it is invariably the face which is the longest distance from the hotel. In accordance with this most inconvenient rule, the ascent of the Pigne d'Arolla commonly entails crossing the Pas de Chèvres or the Col Vuignette: Mont Collon is usually ascended from the Glacier du Mont Collon—that is from the south: the Aiguille de la Za is believed to be impracticable on the side which faces Arolla, and in order to reach its east face a long circuit has to be made by the Col de Bertol, or a shorter one by the Col de la Za.

But to return to our expedition. As we were rounding the point 3,097, which I have already mentioned, an inviting snow couloir running up from the Glacier de Za de Zan towards the main ridge of the Dents des Bouquetins disclosed itself. We stopped to look at it and decided to inspect it at closer quarters. On nearer inspection, the rocks at the side of the couloir, though steep enough, did not seem to be impracticable as we had imagined them to be. It was at once carried *nem. con.* that we should attempt to avoid the long circuit by the Col du Mont Brulé and make trial of the couloir. It seemed to ascend almost to the arête, and ended immediately below a very conspicuous *gendarme*, which stood up boldly against the sky with a long piece of rock lying horizontally on the top. Our plans thus settled, we breakfasted on the moraine of the Za de Zan Glacier, and after putting on the rope proceeded up a steepish slope of frozen snow towards our couloir. Our order was as follows:—Slingsby was leading guide, and later in the

day proved himself thoroughly efficient in that capacity, Martin Vuignier, whom we had brought with us as porter, was roped second, Miss Oliphant was third in order, while I brought up the rear. The route looked quite simple for some time to come: the couloir, though steep, was apparently free from falling stones. At least the snow in the couloir was not scarred, and there was no trace of stones at the base.

The couloir was reached at 8.40, but, alas, the bergschrund, invisible from below, was of great width. We made several attempts to cross, but there was no bridge, and our attempts were futile. Accordingly we said farewell to the couloir, with but little sadness, for we felt sure that we should meet again a little later, at a somewhat higher level. About forty yards to our left, that is, to the north of the couloir, the bergschrund narrowed, and enabled us to get on to the rocks above it. These rocks proved very steep, and were somewhat glazed with ice. Progress was of the slowest, and after climbing steadily for fifty minutes, we estimated that we were only about seventy feet above the bergschrund. We had now arrived at an exceedingly awkward place, where the choice lay between a steep chimney on our left and some ice-coated rocks on our right. Slingsby preferred the chimney, but eventually, partly on account of the protestations of Martin, and partly because the chimney did not lead in the direction of the couloir, the preference was given to the rocks on our right, which, as I have said, were coated with ice. They were steep and difficult, and I do not think that any member of our party except Slingsby was capable of leading up them.

The couloir proved impossible to reach. The formation of the rocks drove us more and more to the left, and further and further from the couloir. So we climbed upwards, always sloping across the face in a northerly direction, until we reached the lower end of a band of snow which traversed the face in a southerly direction, ending with the arête, above, and not very far distant from, the big *gendarme* which we had noticed from below at the head of the couloir. This band of snow proved most useful, and with its help we reached the arête at the point which we had marked down earlier in the morning, though our route had been more circuitous than we had intended. It was now 11.30, and Martin who like myself had been much impressed by the steepness of the rocks, inquired whether it would not be well to commence our return journey at once. Slingsby explained to him that

the day was yet young, and that we had every desire to continue our climb. To this Martin retorted that, however much we might enjoy a night's rest on mountain or glacier, he must personally confess to an effeminate preference for his bed in his chalet. Having thus delivered himself, he threw up his arms and gave further vent to his feelings by a prolonged howl. I sympathise with him most sincerely. He was on an unclimbed and difficult peak, unable to follow his own wishes, and securely roped to people whom he doubtless considered more or less insane. What position could be more unpleasant?

The arête on which we were standing was very sharp. On each side of us the rocks ran sheer down to the glaciers below, and showed us plainly how narrow the base of the whole range must be. We speculated as to whether it would be easier on our return journey to descend on the Italian side and make the circuit of the range by the Col du Mont Brulé, but no obvious way of descent disclosed itself; and as the east face below us seemed somewhat stone-swept, we decided that it would be risky to exchange the known for the unknown.

In coming along the band of snow before mentioned, our direction had been southerly, but now we turned and climbed along the arête in a direction which was almost due North. After awhile the arête broadened out into a little plateau of loose stones. From this point we saw three peaks rising in front of us, and the same question occurred to each member of the party—which was the highest, and which was the object of our climb? We had imagined that our peak would be easily distinguishable by reason of its sharpness; but, viewed from where we were standing, all three peaks looked equally sharp and steep. We lost no time in consultation, but immediately decided to make for the nearest. For this purpose we turned to the left, that is on to the West face of the range. The rocks soon became very steep, and our way lay up a series of chimneys, all narrow and nearly vertical. At the top of one of these chimneys, Slingsby shouted to me that he thought our way was barred, and that we should have to descend and make another cast.

Immediately above him was a smooth wall of rock, which was manifestly impracticable. The only route which afforded the least hope lay to his right, round and up a boss of rather smooth rock, with no very defined handhold. Across the boss ran a very narrow ledge. Climbing slowly with his knees and elbows, and making good use of his most prehen-

sile stomach, Slingsby worked his way across and up the boss to a point out of sight. He then proceeded to help the rest of the party. Martin was hauled up, perhaps somewhat ignominiously, but it saved time. Then it was Miss Oliphant's turn. Naturally enough she objected to make use of the drastic method which Slingsby had accorded to Martin. Appealed to for assistance, I got into a position where I had good handhold, but no foothold at all, so that my shoulders might serve as a step for her. With this help and a timely tightening of the rope above, Miss Oliphant was soon standing by the side of Slingsby and Martin. It only remains to add that I was then hauled up in as ignominious a manner as Martin had been. How Slingsby got up first, I am really unable to understand, for in the survey which I was able to make of the rock in the course of my rapid passage up it, there seemed to me to be practically no handhold or foothold.

A few more narrow chimneys and we stood at the foot of a slab of rock about 20 or 25 feet high which formed the top. This slab was split right through from top to bottom, and the crack afforded us a means of ascent. Here again, as on other occasions too numerous to mention, I was glad of the friendly assistance of the rope.

To our great disappointment the peak on which we stood was not the highest. Not far to the northward stood another peak which we estimated at 150 feet higher than ours. The temptation to continue our climb was great, but the day was not so young as it had been. The time was ten minutes to two, and Martin had ceased to prophesy a night on the mountain or glacier, only because his gloomy forebodings had become in his mind a certainty. The exact locality of our sleeping-place was with him the only open question. We built a cairn, but it was of very small dimensions, for though the top was cracked in every direction and looked in the worst possible state of repair there were no loose stones. At 2.20 we started downwards in the order in which we had ascended, only reversed, that is to say, Slingsby occupied the responsible position of last man, while I led.

We were fortunate in finding a means of avoiding the boss of rock which had troubled us so much in our ascent; the steep chimneys proved rather less difficult than we had anticipated, and at 3.50 we reached the point where we had struck the arête in the morning. From the arête we again made use of the friendly strip of snow which took us downwards and in a northerly direction, that is, homewards.

The northern end of the snow strip was not far removed from a lateral ridge running down towards the little island of rock of which the point 3,097 is the southern extremity. This ridge we determined to inspect, in hopes that it might prove a shorter and easier route than that of the morning. The hour was getting late, and Martin's forebodings were gradually coming within the range of possibility. The ridge, when reached, looked fairly easy for some distance, but then seemed to come to a sudden end. This, of course, did not necessarily imply any insuperable difficulty, for every climber learns by experience that rocks seen from above always appear to be more precipitous than they really are. If, then, the unseen part of this ridge was practicable, it was obvious that our shortest line of descent lay along it. The shortness of the route tempted us, and we started downwards. At first our only difficulty was the rottenness of the rock. The arête of the main chain above us we had found to be composed of gneiss, and was hard and solid, but the rock on which we now were was very different in character. Friable and rotten, it afforded no hold for our hands. Large pieces continually broke away, and went thundering down below. A little lower the rock became even more rotten. I no longer dared to clear a way for the party as I had done above by pushing down the loose rock in front of me, for I feared that I might thereby undermine the ground on which we were all standing. The whole surface of the rock seemed loose for quite a mètre inwards. From time to time, however, a great mass gave way, and in falling started what must literally have been hundreds of tons of rock in a grand avalanche. After the fall of each one of these avalanches the air was full of a strong smell of burning, almost sulphurous in its nature, and like the smell of a cartridge which has just been fired. All this rotten rock was intersected at intervals by broad unbroken bands of white quartz or felspar. Without the hold which they afforded us, our descent would certainly have been at some points dangerous. They, however, were always firm, and we found that it was safe to rely implicitly upon them. At the point where, from above, the ridge had seemed to us to end we found ourselves on a crag with three very steep sides. This was more than we had expected. However, though every way looked unpleasant there was a wide choice. The south side looked safest, and we tried it first, but it would not 'go' easily, so we gave it up and reascended some fifty feet. Then we tried the north side, and after descending a short distance we saw some

ledges below. These we reached, and, descending carefully from ledge to ledge, arrived at the bottom of the crag above-mentioned. Our descent was continued by means of a prolongation of the same ridge which was broken so abruptly above us. Here, as above, we ran no great risk from falling stones, for the *débris*, as it broke away from under our feet, fell down into couloirs on either side of us. But at length the ridge ended, and it became necessary to cross the couloir which lay on our right hand side as we descended. This we did with great caution, for stones were falling almost continuously. I waited at the side until the whole of our party were close together, and then, at a given signal, we ran across. Our descent was continued on the North side of the couloir; after a while we were unfortunately obliged to recross, and this we did observing the same precautions as before. A few more minutes, and we were standing on the narrow col of snow lying between the point 3,097 and the main chain. Here we unroped, and made our final meal off what was left of our bread and a tin of preserved pine-apple. As it was late, and we feared that our friends in the hôtel might think it necessary to come out to look for us, it was arranged that I should hurry on alone with what speed I could. Fortunately, as the sunlight faded away the moon rose, and there was no difficulty in seeing the way on the glacier. At 8 o'clock I was off the tongue of the glacier, and could see the lights of the hôtel not far off. For a few minutes I missed the path, and stumbled among the boulders which strew the flat ground at the foot of the glacier. Moonlight now seemed to me a very poor substitute for the sun: all the interstices between the boulders were concealed by treacherous shadows, and again and again my shins—already rather sore with climbing—suffered severely. Fortunately, however, I was soon on the path again. When distant about a quarter of an hour from the hôtel, two lanterns appeared moving towards me. As I anticipated, they belonged to a search party composed of two Arolla guides. They told me that they had been sent out by the landlord of the hôtel, and that they were laden with cognac and all the delicacies of the season. They invited me to partake, but I refused, and invited them to return with me. They replied that stern duty impelled them to continue their search for the rest of our party. My assurances that the rest of our party were following me closely were of no use. Stern duty won the day, and they proceeded along the path towards the glacier. At the foot of the glacier they met Slingsby, Miss

Oliphant, and Martin. As the rescued were in no need of refreshment, the search party—again in obedience to the dictates of duty—sat down by the path and consumed the cognac and delicacies which they had brought with them. This sumptuous meal duly appeared in our bills at the very moderate figure of 2f. 50c. each.

So ended our expedition and its dangers. The climb had been a difficult one; too difficult, perhaps, in the opinion of many, for a party in which the professional guiding power formed so small an element. I feel, however, that I have not given sufficient credit to Martin for the part he played, subordinate though it was. He was most willing and helpful, and carried a heavy knapsack all day with unflagging energy. If he failed to distinguish himself in a more conspicuous manner, it was only because our leading guide gave him no opportunity of special distinction.

The Ancient Glacier Passes of Dauphiné.

By HENRY DUHAMEL.

Some notes on the history of the ancient glacier passes of Dauphiné have been published by Monsieur Charles Rabot,* and attention has recently been again drawn to them by Monsieur Paul Guillemin in his interesting article entitled, 'Les Voies Anciennes des Glaciers du Pelvoux,' which may be found in the 'Annuaire du Club Alpin Français' for 1886, pp. 3–24. I have got together some evidence on the subject which clears up several doubtful points, and am encouraged by the Editor of the 'Alpine Journal' to believe that the following notes may interest some readers of that periodical.

The village of S. Christophe is the *chef-lieu* of the largest commune in point of area but one (near Arles) in France, for it includes the whole of the upper valley of the Vénéon, with all its side glens and glaciers. It stands to La Bérarde as S. Niklaus does to Zermatt. Now on September 3, 1673, the 'Assemblée des manants et habittants de la Communauté de St. Xphle' (this very village) drew up the following *procès-verbal* relating to the boundaries of the commune:—'Déclarant tous unanimem^t^ que lad. comm^té^ de St. Xphle est située dans led. mandem^t^ d'oisans dans lelection de Grenoble lequel mandem^t^ et paroisse de St. Xphle est cadastrée depuis si longtemps dont nest mémoire d'homme. Icelle comm^té^ se confronte commençant au fond du lac tandant au col de vallon gassand et de la au col de la melliande et au col garansaud jusques au col de la temple et jusques au col des estancons jusques au vallon du moulin ainsy que,' etc.

When I tried to identify these names I found, to my delight, that

* *Alpine Journal*, vol. x. pp. 275, 276; *Annuaire de la Société des Touristes du Dauphiné*, 1882, pp. 238–242.