

than the snout, and which is shown vertically below Mont Blanc de Courmayeur on the plate facing p. 203. Later parties have left the glacier further N. and climbed by a subsidiary ridge (3 to 8 on plate facing p. 203) to the arête.

Imfeld, 3921—Mieulet, 3954—are difficult to locate. We believe them to refer to some point on the E., or Brenva, face of Mont Blanc off the route, and to its S.

One of us (J. P. F.) took readings with a Hottinger aneroid in 1893. The instrument is that used by the Swiss Federal Surveyors, and is probably quite reliable for indicating *differences of altitude over a short period of time*. The party struck the main frontier ridge of Mont Blanc about 50 or 60 mètres below the Rochers Rouges Hut, the height of which is 4508 m. (Imfeld). They struck the ridge, that is, at about 4450 m. The readings show a difference of 419m. between the snow saddle where the ascent of the buttress commenced and the ice-arête, and of 552 m. between the ice-arête and the point where the frontier ridge was struck. This would give a height of 3479 m. to the snow saddle, and 3898 m. to the ice-arête.

The altitude of the highest rocks on the route (13 on plate facing p. 203) must be guessed. Most writers have placed them at nearly the same level as the Col de la Brenva (4333 m. Imfeld). They are probably some 30 mètres lower, but certainly over 14,000 feet. It will be noted that this figure does not agree with Mr. Caesar's estimate (*ante*, p. 279).

To sum up the altitudes arrived at are as follows :

Snout of Buttress	3330 m.=10,922 ft. (Imfeld).
Snow Saddle on Buttress	3479 m.=11,411 ft. (Aneroid)
Top of Lateral Rib (No. 8, p. 203)	12,650 ft. (estimated)
Ice-arête . . . (No. 9, p. 203)	3898 m.=12,785 ft. (Aneroid)
Highest Rocks . (No. 13, p. 203)	14,100 ft. (estimated)
Col de la Brenva	4333 m.=14,212 ft. (Imfeld)
Rochers Rouges Hut	4508 m.=14,787 ft. (Imfeld)
Summit of Mont Blanc	4810 m.=15,776 ft. (Imfeld)

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THE DESCENT OF THE BRENVA FACE OF MONT BLANC.

By R. W. LLOYD.

OUR successful ascent of this face in the summer of 1911 spurred us to attempt its descent this year. This descent was one of the quickly vanishing Alpine problems, untouched save for the partial descent of Messrs. Mummery, Collie, and Hastings referred to in 'A.J.' xxvi.

174. Our party consisted of the guides Josef Pollinger and Franz Imboden and myself.

On arriving at Chamonix, as soon as the weather allowed we went to the Col d'Entrèves thoroughly to reconnoitre our ground. From careful inspection we could see that there would be difficulty in getting through the upper séracs (No. 1 of the illustration), and that the snow as it steepened would soon turn to ice. The descent must hence be attempted at the earliest possible moment to have a chance of success.

For some days the weather was bad and we could do nothing. Finally, in beautiful weather, we went up to the hut on the Aiguille du Goûter. Next morning, on reaching the Dôme du Goûter we were compelled by a violent snowstorm hurriedly to retrace our steps and return to Chamonix. For some days the weather continued hopeless, but on July 10 we were able to start for the Grands Mulets, reached in five hours from Chamonix.

The morning of July 11 was beautifully fine, so we left the Grands Mulets at 1 A.M. and reached the summit of Mt. Blanc at 7.10. It was quite warm and pleasant at the top. After a quarter of an hour's rest we descended to the upper snow fields of the Brenva Face, and thence in very soft snow to the séracs, and after some trouble in finding our way through them we at last stood on the top of the great ice wall and saw our route descending steeply below us. By hitching our 200 ft. light rope round a sérac we managed to scramble down the smooth and almost vertical ice-face, and so reached the top of the so-called Brenva Face. A reference to the illustration shows that this face, above the famous ice-arête, widens out into a broad and very steep ice-slope, one of the difficulties of the expedition, usually requiring long step cutting.

The right-hand or N. edge of this steep ice-slope falls away in a very steep rock cliff, the crest of which barely emerges from the ice. This has sometimes led to the ascent being called an *arête* climb.

On reaching the foot of the wall of séracs, we found we were unable to turn the great ice-wall to the left owing to its excessive steepness. We were forced, therefore, to go straight down, bearing to the right so as to get round the ends of several great bands of ice which ran across the slope. To do this we had to cross the ice couloir (No. 2) parallel to the foot of the rocky spur which bisects the face and is really the foot-wall of the N. side of the séracs. We intended to descend by a steep band of snow on the far side. Accordingly, after advancing a short distance, we again hitched our rope round a small projecting piece of rock and in a short time reached the edge of the ice-couloir.

Imboden cut across the couloir and made himself safe on the other side on the band of snow. I was starting to join him when, to our horror, some bits of ice came humming down from the rock-spur high up on the right of the couloir. Fortunately, the largest piece,



R. W. Lloyd, photo.

Swan Electric Engraving Co., Ltd.

THE BRENVA FACE OF MT. BLANC
(Mr. R. W. Lloyd's descent).

about the size of a croquet-ball, only struck Imboden's sack. Smaller pieces, however, struck him on the side, and he seemed literally to crumple up in a fainting condition. Joseph and I held on to his rope and steadied him, and his being in good snow enabled him to hang on to his axe and recover his balance.

As soon as the fall ceased I hurried over to him, just escaping a fresh fall, and was immediately joined by Josef, both of us fortunately untouched. We got Imboden a few yards away from the most dangerous place and gave him brandy. He was obviously a good deal hurt and shaken. We dared not delay on account of the sun's effect on the very steep snow, so I shouldered his sack, and Josef led down the snow to the lower part of the couloir, where it widened out and was much less steep. Here we crossed again (No. 3), recovering our spare rope, which had slipped from us at the time of the accident, and passing to the left under a great band of ice made for the N. or left-hand (descending) edge of the face (No. 4). We then found that the ice had forced us a bit too low, so had to go up a little round the bergschrund, whence, after descending some easy steep snow, we reached the edge of the face (No. 5). It was still too steep to stop, so we went on to our breakfast-place of last year (No. 6) at the upper end of the celebrated narrow arête, where we were able at last to attend to Imboden, who was complaining of his injuries. After taking some meat-jelly and some stimulant he was able to go on. After some discussion we decided to descend the steep N. snow-flank (No. 7) of the famous narrow arête by the route we had ascended last year, and which now looked much steeper and more difficult. This seemed a much shorter route than going all along the arête and down the rocks as is usual in ascending, in spite of its steepness and the ice-fall at the bottom, and it was, of course, most important to get Imboden down as soon as possible. To have followed the arête—no longer narrow as last year, but a rounded mass of snow, corniced in places on the left and exceedingly steep on the right—would have been dangerous, as the sun had been on it for hours. Moreover, we thought it was more than Imboden could do, with a descent down snow-covered rocks to follow, since he could only use one hand properly.

We accordingly started down the steep snow-flank, which had not suffered much from the sun. It was necessary to traverse for some distance to the left, owing to a long narrow crevasse, and to get down some exceedingly steep snow on the left-hand corner across the crevasse. It looked very bad, as we had to descend sideways, bearing, after crossing the crevasse, slightly to the left and then to the right, making steps for the feet and one hand, and with the other driving in the axe-point as deeply as possible. It was just like going down an almost perpendicular ladder without the advantage of having rungs to hold on by. What with the exertion, the heat, and the sack, I found it rather hard work, and Imboden showed obvious signs of exhaustion.

About two-thirds of the way down there was a band of almost perpendicular ice (No. 8) with an exceedingly thin covering of snow. To cut down this would have taken a long time, and, as Imboden was very exhausted, Joseph drove in a long barbed piton. To this he fixed our 200 ft. spare rope, which was just long enough to take us over the difficulty. We traversed to the extreme right, but had to work back again and down some more very steep snow, when we managed to find an easy place over the bergschrund (No. 9); and, hurrying as far as we were able under the ice-fall and over the débris, at 1 o'clock stood safely on the glacier (No. 10), having taken two hours to get off the arête. We congratulated each other on having made the first descent of the Brenva in comparative safety.

After a short rest, and Josef having kindly lightened my sack, we started up the steep snow, continually sinking to our waists, and in an hour reached the small col on the Brenva Glacier, whence we descended the steep snow to the glacier below the séracs, and at 7.15 P.M. arrived at Courmayeur quite tired out.

There was much less snow on the face this year than last; in many places the covering was quite thin. The final descent of the flank of the arête *was much steeper than last year*; and where last year we had beautiful snow in which to cut good steps we now had barely enough to hold us safely, and sometimes, as in the place where we used our spare rope, ice. Curiously enough, I found on looking at my diary that we made the ascent on July 11, 1911, and descended on the same day this year.

A NOTE ON THE GARHWAL HIMALAYA, 1912.

By C. F. MEADE.

THE party consisted of Pierre Blanc, Franz Lochmatter, Justin Blanc, Jean Perren and myself.

May 26.—We left camp at Mana village and camped at Khati under the foot of the Ghastole glacier.

May 27.—The Bhotia coolies were sent ahead with the guides to fix a site for a main base camp on the moraine at the snout of the glacier. They made two journeys with loads.

May 28.—We all moved up to Main Base Camp.

May 29.—Leaving Main Base Camp at 6 A.M. we marched up the glacier under a blazing sun and camped half-way up it.

May 30.—Most of the party felt unwell. I attributed this to the power of the sun. Pierre descended to fetch drugs from Main Base Camp.

May 31 was another sunny day. We moved our camp to the foot of Slingsby's Pass at the head of the glacier and underneath