

led upwards. The tower had to be turned on the right over a slab. Herz stepped on to a rock so as to make a long stride when suddenly the rock, which he had carefully tested, gave way. The 13 millimetres thick woven rope had been belayed behind a firm rock and in addition had been passed behind a second rock about 4 metres higher up. It however broke under the strain and the unfortunate climber fell some 500 metres into the gully almost to the foot of the face, being of course instantly killed.

On September 18 the Herren **Emil Hammer**, **Walter Hess**, **Emil Roth** and **Lorenz Vogt**, members of the S.A.C., left the Göschener Alp to ascend the E. face of the **Dammastock** by the route described in 'A. J.' xxv. 181 *seq.* The party apparently had crossed the great couloir in the E. face, unroped, and were roping up on the rocks on its N. bank when an avalanche overwhelmed them.* **Vogt** was carried down the middle of the couloir for about 400 to 500 metres and was killed. The others received minor injuries.

On October 30 the Herren **Dr. A. Derganc** and **Max Himmelbauer** of Vienna, each aged 28, were killed in attempting the ascent of the **Planspitze** by the N. face. Although Professor Derganc had made the same ascent several times, the party took nearly 8 hours to reach the well-known great terrace and the slabs which succeed it. They were observed about 2 P.M., and again at about 4 P.M. by a party which made the ascent by the Keidel route. The bodies were found on November 4 by a search party of friends in the W. gully which descends from the N. face to the great terrace.

It is probable that want of condition and consequent slowness, causing the party to be overtaken by darkness on the short autumn day, may account for this unfortunate accident.

On October 30 **Herr Otto Lamm**, aged 22, with four friends, ascended the VI Kreuzberg (Säntis group). They then proposed to ascend the N. face of the **VII Kreuzberg**. While the others were roping, Lamm climbed on ahead and when halfway up the face suddenly fell backwards over the heads of his comrades and was picked up dead 200 metres below.

NEW EXPEDITIONS.

Dauphiné.

LES BANS (3651 m.=11,979 ft.) N. SUMMIT BY THE N.E FACE. *September 5, 1910.*—Signor E. Santi and Mr. R. Schellens left the Carrelet Hut at 2.45 A.M. and reached at 10.15 A.M. the foot of the rock arête forming roughly the W. boundary of the great snow couloir† on the N.E. face well seen in Cav. Sella's photograph

* Mr. Gask pointed out, in the note alluded to, the possible danger of this couloir.

† See *Central Alps of the Dauphiny*, p. 129 (variation).

(taken from the *Gl. de la Pilatte*) reproduced in 'S.A.C. Jahrbuch,' xxvi. opposite p. 160. This arête was followed to the N. ridge, reached a short distance below the summit, which was finally attained at 1.35 P.M. The S. summit was gained at 3.45 P.M.

For the descent two parallel couloirs, divided by a sharp ridge, were made use of. These couloirs are to the E. of the arête extending to the Col des Bans, and lead to an ice-slope a short distance to the E. of the col. The party was forced out of the first couloir into the second one, a doubled rope being used before the rocks leading to the ice-slope were reached. At 6 P.M. the party was forced by fog and darkness to bivouac just above the col. The Carrelet Hut was reached at 11.15 A.M. next day. Much time was lost in the ascent owing to thick mist. From 9 to 10 hours should suffice from the Carrelet Hut to the S. summit.

Mont Blanc Group.

CALOTTE DE ROCHFORT (3972 m. = 13,029 ft.).—First passage of the E. arête and first traverse in one expedition from the Col du Géant to the Col des Grandes Jorasses.*

On August 13, 1909, Signori Mario C. Santi and Sigismondi left the Rifugio Torino on the Col du Géant and turning the Aiguille du Géant on the S. side reached the summit of the Aiguille de Rochfort at 10.20 A.M. At one point of the arête before reaching the summit there is a great step, vertical on the side towards the Aiguille and which has to be turned by cutting for an hour down a steep ice-slope on the French side. They then descended for a short way the arête leading towards Mont Mallet and gained a small glacier on the N. side of the Aig. de Rochfort. They hoped thence to reach the arête leading to the Dôme de Rochfort, but were compelled by much recent snow and much ice on the rocks to keep continually on the French slope and only reached the summit of the Dôme de Rochfort at 1.10 P.M. From this point severe step-cutting along the arête and some rock work in traversing a gendarme led them at 4.20 P.M. to the Calotte de Rochfort.

[The different portions of the route up to this point have all been covered at various times by previous expeditions, as set out in 'Kurz's Guide.' The following expeditions, during which the whole or portions of the great frontier arête on which stand the Dôme de Rochfort, the Aig. de Rochfort and the Aig. du Géant, were followed are known.

1. On July 17, 1900, M. Emile Fontaine with Jos. Simond and Jos. Ravanel ascended the AIG. DE ROCHFORT from Montanvert and followed the arête to the Aig. du Géant.

* This ridge is well seen in a sketch by Mr. E. T. Compton, *O.A.Z.* 1905, p. 6; and also in the photos referred to at the end of this note.

This was, so far as is known, the first passage along this section of the arête. Cf. 'Rivista del C.A.I.' xxix. 1910, p. 157 and private communication.

2. On July 18, 1900, Signor Ettore Allegra with Laurent Croux and Pierre Dayné ascended the AIG. DE ROCHEFORT from the Italian side, descended to the snow basin bounded by Mont Mallet and then followed more or less the main frontier arête to the Aig. du Géant. Cf. 'Rivista del C.A.I.' 1900, p. 323.
3. On August 9, 1903, Dr. Karl Blodig and Dr. Max Horten left the Col du Géant at 4.30 A.M. and reached the summit of the Aiguille de Rochefort at 9.45 A.M., having apparently halted only 5 minutes to put on their crampons which proved invaluable in saving time. The descent of the ice-wall on the French side, alluded to above, gave them fifty-five minutes' step-cutting in hard ice. They continued along the ridge, finding snow and rocks in perfect condition, and reached the summit of the Dôme de Rochefort at 11.45 A.M. The arête from a point about twenty minutes E. of the Aiguille as far as the summit of the Dôme was on this occasion followed for the first time. The party returned the same way, and, going at a rapid pace, passed the Aiguille du Géant at 2 P.M. whence they strolled down to the hut by 4 P.M.*
4. On August 13, 1904, Captain J. P. Farrar, with Daniel Maquignaz and Ernest Simond, left the Jorasses hut and reached the summit of the Dôme de Rochefort by a variation of the Rey-Muir route in 5 hrs. 46 min. actual going. The Col des Grandes Jorasses route is followed for 1 hr. 38 mins., when the rocks of the S.E. arête of the Dôme de Rochefort are taken to about half-way between the Col des Grandes Jorasses and the snout of the S.E. arête. The crest of this arête is gained up an exposed slope (a sharp needle being left on the left) and is followed to a big notch (1 hr. 39 min.). A couloir, on the right of a great red rock tower which carries a perched stone on its top, is then followed traversing to and fro in the couloir until the arête can be regained above the tower (22 mins.). You then turn over to the left of the arête for a few minutes, then over to its right and up a difficult chimney facing the Jorasses (there is a piton at the top of this chimney), regain the arête and follow it to the summit (2 hrs. 7 mins.) or 5 hrs. 46 mins. from the Jorasses hut.

From the top descend to the first gap before the big gendarme (opposite this in 56 mins.). From here you can leave the main arête when much corniced and descend to the foot of the rock gendarme (29 mins.) and follow the ridge of

* See *Ö.A.Z.* 1906, page 1 seq. for a very graphic article by Dr. Blodig.

- rocks on the Italian side below the arête to the snow col below M. Mallet (34 mins.) reaching the summit of Mont Mallet in a further hour or less. You return to the snow col in twenty-three minutes, whence you easily reach the top of the Aiguille de Rochefort in seventeen minutes. From the top till opposite the Aiguille du Géant takes about three hours, the steep ice-slope on the French side above alluded to having of course to be cut up. (Unpublished MS.)
5. On August 14, 1907, Mr. G. B. Tunstall-Moore with Joseph Raveland and Joseph Bossoney ascended the Aig. de Rochefort from the Montanvert *viâ* the Mont Mallet and followed the main frontier arête to the Aig. du Géant which they then *traversed*, ascending its N. face, a most remarkable *tour de force*. Cf. 'A. J.' xxiv. p. 104.
 6. On July 25, 1909, Dr. Ernst Pühn's expedition recorded in 'A. J.' xxiv. p. 690.

These particulars are here given as this ridge-walk is one of the most magnificent in the whole Alps.]

From the summit of the Calotte de Rochefort the Italian mountaineers now entered upon entirely new ground. Very difficult passages of ice and rock followed each other, whilst the gendarmes on the arête which they had often inspected from below loomed up in close proximity. One gendarme is ascended at 6 P.M., the descent being made on the Italian side when a short traverse leads to a little col at the foot of the next gendarme. A few metres of descent on the contrary side brings them to an overhanging wall, which offered no chance of turning either on the French or Italian side. The climbers finally managed to fix a *piton* and to let themselves down with a spare rope, 15 metres being in mid air clear of the rock. They then climbed the next gendarme which was the last. This point Signor Brofferio had reached in his previous explorations, but the further descent made the most severe demands upon the energies of the two climbers owing to the bad snow, glazed rocks, increasing darkness and cold.

The Italian side of the gendarme was vertical and the French side was almost as bad. Finally with infinite labour the side facing the Col des Grandes Jorasses, some 20 to 30 metres high, was descended to a ledge where, at first somewhat protected from the wind, the explorers at 8.10 P.M. decided to bivouac.

The descent to the Col des Grandes Jorasses some 100 metres below their bivouac was effected soon after daybreak next morning, whence the two climbers followed the ordinary route to the Jorasses hut.

The article in the 'Rivista' for March 1910 (vol. xxix. No. 3), of which the above account is an abstract, contains three very instructive photographs which make the route quite clear. Mr. Eric Greenwood was good enough to make a complete translation of this article for the present purpose.

J. P. F.

Pennines.

DENT BLANCHE (4364 m.=14,318 ft.), THE E. ARÊTE, REACHED FROM THE S.—On July 27, 1910, with Josef Pollinger as guide, and Franz Imboden as porter, I reached the E. arête of the Dent Blanche from the Schönbühl side, and then followed it, the upper portion of which is part of the so-called Vier Esels Grat, to the top.

There was a heavy snowstorm on the night of the 26th, and at 2 A.M. on the 27th the weather was still bad. At 3 it had cleared to a considerable extent, so we got off from the Schönbühl Hut at 3.45, reaching the top of the moraine (4.35), where we roped. After about 35 minutes we arrived close to the foot of the Col de Zinal, (3500 m.), and crossing the bergschrund struck up the steep snow and rocks to the left, bearing N.W. We had some considerable difficulty at what might be called 'The Cave,' there being some two to three inches of snow on the rocks. Joseph eventually stood on the porter's shoulders and climbed right over the huge stone top, a route I did not find at all easy when I tried it, the snow having rendered one's fingers numb and the holds bad. From here we looked down on the hanging glacier which is attached to the E. corner of the mountain's S. face. Turning to the right (N.E.) we went for some distance up the steep knife-edge of rock, the crest of the S.W. buttress of the E. arête, which promised and gave very considerable difficulty. This brought us near the foot of an immense perpendicular wall (really the face of the E. arête), which looked unclimbable, but by making a difficult and, in the then condition of the rocks, dangerous traverse to the extreme left over snow-covered slabs, we reached a steep iced gully leading up to a precipitous chimney. This, the leader with great care reached, and found easy of ascent, as it was wide enough to get into and scramble up. We then had a succession of steep and, when dry, quite easy slabs. As it was, they required care. These led us to the foot of a small tooth on the ridge (below a great red tower) which was easily ascended, and we stood on the great E. ridge, after over 3 hours continuous hard work (8.40 A.M.). I climbed down the tooth on to the narrow snow ridge below, but had to trust to the rope and drop off the last few feet, which overhung. Joseph followed, after hitching the rope. We then proceeded along the snowy arête, turning the Great Red Tower on the S. side, and keeping as high up on the crest, but on the N. side, as we dared, generally with the left hand over the lip of the cornice for support and balance. After passing a succession of cornices, we reached (11.50) the foot of a great gendarme at the point of intersection of the lower E. and main E. arêtes, which latter ridge, being deep in bad snow, we had to cut up with great care (12.3 noon).

After 35 minutes halt to eat we turned the big gendarme on the right (N.), a somewhat difficult and dangerous matter. The way is

S. Arête

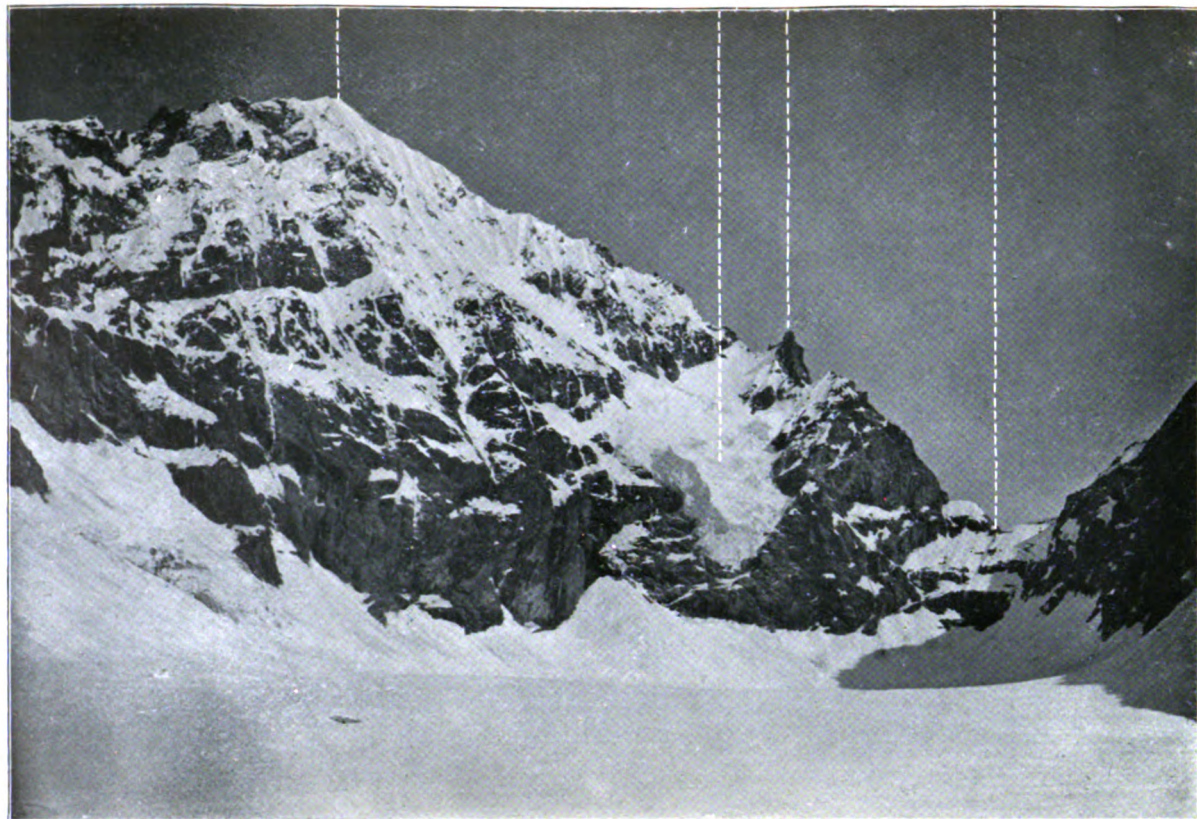
Summit

E. Arête

*Hanging
Glacier*

*Big Rock
Gendarm*

*Col of
Final*



Swan Electric Engraving Co. Ltd.

THE S.E. FACE of the DENT BLANCHE, seen from the Schönbühl Glacier.

obviously to the left (S.), but this slope and the rocks were covered with bad snow. There followed a succession of very large cornices along which we had to make our way, at times almost on the crest, but where possible a few feet below on the N. side, keeping the left hand and arm over the lip for balance. At last we reached a tall, thin, red pinnacle, which we had been scanning with anxiety for some hours while making our way towards it. It was much too dangerous to attempt to traverse, the cornice connecting it with the arête being so thin that one could see light through it, while the actual scramble up to the crest was by very bad snow, so that, late as it was in the day, we were compelled to risk traversing the snow in the couloir on the S. side. We eventually regained the ridge, and were delighted to find that we had passed the last great difficulty, and after encountering a few more cornices, we followed the fine snowy ridge right up to the summit. We reached the final ridge about 5.20, and after a short halt gained the summit about 5.42 P.M., after one of the finest climbs either Josef or I had ever made.

Somewhat delayed by darkness, we arrived at the Schönbühl Hut at 11.15 P.M., having been going with one rest since 3.45 A.M.

Since the snowstorm in the night and early morning, the weather had been perfect. The climb is, under the then conditions, exceedingly difficult and dangerous, but must rank, when in good order, as one of the finest in the Alps. It will no doubt often be accomplished now that there is a club hut.

The idea of the climb was Josef's, and is a useful variation of an ascent which his father discovered and first accomplished in 1882.

R. W. LLOYD.

[It will be remembered that Mr. Eckenstein with Mattias Zurbrücken reached the E. arête from the Schönbühl side as recorded in 'A. J.' xiv. 499.* On that occasion Mr. Eckenstein's party went pretty nearly straight up difficult rocks to the small hanging glacier on the S. face mentioned by Mr. Lloyd, and well seen in the photograph. From the glacier they kept a straight line for the summit, but finding the upper part very difficult and bad they traversed to the r. to the main E. arête, which they reached considerably *above* its junction with the N.E. arete running down to pt. 3200.

This E. arête was bad, so that several times they were forced on to the S.E. face.

On another occasion Mr. Eckenstein reached the same glacier by starting up much more to the W.—also difficult.

It will be remembered that on August 15, 1900, MM. Albert Martin and Léon Dufour followed the E.S.E. and E. arêtes in their entirety from the Col de Zinal to the summit of the Dent Blanche ('Echo des Alpes,' 1901, p. 181 *seq.*, and 'A. J.' xxiv. 627-8).]

* The N.E. arête mentioned in the note referred to is really the E. arête (communication from Mr. Eckenstein).

Rhaetian Alps—Ofen Pass Group (Engadine).

PIZ NAIR (2939 m. = 9640 ft.). First ascent from the N. and first traverse.*—On July 28, 1909, Dr. Günter Dyhrenfurth with the porter Serafin Gabl from the Alp Sampuoir ascended the valley for a few steps to a bridge which they crossed and ascended the other side of the valley in a N.E. direction to the foot of a very marked gully shown in the map. They followed this gully to the great scree field on the N. face. Leaving the jagged N.E. arête of the mountain away to the left they followed a snow couloir which gradually steepens and runs up S.S.W. into the N. flank. They finally reached a rocky rib N.W. of the summit and followed this to the N. minor summit and over this to the highest point.

Descent by the S. arête and through the Plattaskar back to Sampuoir.

PIZ DELS LAIS (about 3050 m. = 10,007 ft. No height or name on the S. map, but *name* on sketch map in 'D.u.Ö.A.V. Zeitschrift,' 1910, p. 272).—First ascent by the S. arête and descent by the E. arête. Fräulein Marianne Möller and Herr Dr. G. Dyhrenfurth, July 30, 1909.†

The party starting from the upper Margum Sampuoir Alp (2075 m.) crossed the Stragliavita pass (2700 m.) and descending slightly under the S. face of Piz Nuna, ascended into the stony corry enclosed from W. to E. by the Baseglia, Lais, and Nuna peaks. Thence they mounted the easy but interesting rocks of the S. arête to the summit of Piz dels Lais. In the descent they followed the E. arête, barely emerging above the S. margin of the Nuna glacier—difficulties being easily avoided—to the depression between our peak and Piz Nuna (3126 m. = 10,256 ft., S. map). From this point the latter summit was easily attained by the S. slope of its debris W. arête, and the descent made S.E. to the Stragliavita pass. (No times given.)

PIZ LA MONATA (2938 m. = 9639 ft. *S. map*). First ascent and traverse.—Fräulein Marianne Möller and Herren Dr. G. Dyhrenfurth and R. Grossmann, August 5, 1909. ‡

From a bivouac in Val Murtaröl, just N.E. of the rocky spur marked 2564 m. (S. map), the party skirted under that spur, and attained by a stony gully a depression N.W. of the desired summit. Thence they followed the easy but not uninteresting N.W. arête over the three summits of the peak. The bivouac was regained by descending N.E. from the shale depression separating the S.E. arête of our peak from the W.N.W. ridge of Piz Murtaröl. (No times.)

PIZ MURTARÖL (or Cima la Casina) (3183 m. = 10,448 ft. *S. map*). By the W.N.W. arête.—Fräulein Marianne Möller, Herren G. Dyhrenfurth, R. Grossmann and A. Spitz, August 6, 1909.§

From the same bivouac in Val Murtaröl the party attained the

* Ö. A. Z. 1910, p. 203.

† *Ibid.* 1910, p. 204.

‡ *Ibid.* 1910, p. 203.

§ *Ibid.* 1910, p. 204.

depression between Piz la Monata and our peak. The W.N.W. arête supports *two* groups of lofty splintered teeth situated quite independently of one another. The arête was followed as far as the base of the *first* group, which was at first turned by following S.E. a débris-strewn ledge on S. side, till under the loftiest point of the said 'group,' when a buttress leading N. gave access to the actual crest. The ridge was then followed till a cleft compelled a further turning movement on the S. side, which facilitated the reaching of a conspicuous gap *between* the first and second 'groups.' Beyond this point they followed the ridge, the highest points of the *second* 'group' being touched, again by a traverse and climb from the S. After a level bit they came to a great cleft in the ridge, which was turned on its S. slope by a spare rope and the descent of a chimney about 130 ft. long. From the névé-covered cleft thus attained (where the usual route from San Giacomo di Fraele falls in, and the W. branch of the Murtaröl glacier flows to the N.) the summit was easily reached. (No times.)

PIZ MURTERA (2998 m. = 9836 ft. *S. map*). By the N.E. arête.—Herren G. Dyhrenfurth and A. Spitz, September 4, 1909.*

From the Alp Tamangur dadaint (2120 m.) the party skirted under the W. base of the peak in an E.N.E. direction to the uppermost slopes of the Valbella glen, whence they attained (S.E.) the depression between our peak and Piz Starlex † (3077 m. *S. map*, or Sterlex 3069 m., Austrian map), which depression is only some 200 ft. lower than the summit of Piz Murtera. Two great towers crown the crest of the N.E. arête, the first is easily climbed over, but the second had to be partly turned by a traverse to the right (N.W.). Thence, the crest of the arête having been regained near the said *second* tower, a traverse was made to the left (S.W.) to a tiny gap followed by a descent of 50 ft. to a ledge (S.), with the assistance of a 'piton' and spare rope. After a few feet along this ledge awkward steps were encountered, which were similarly descended, and a minute boss attained. Hence, a descent by a diagonal chimney brought the party to a débris-strewn platform. Another exposed descent led them to a similar ledge, and the gap *beyond* the tower was reached. The remaining teeth on the arête are easily climbed or turned, the summit being finally reached by the S. slope of the ridge. In the descent the S.W. arête is easily followed to a minor top, when débris and grass lead back (W.) to the Alp Tamangur dadaint. (No times.)

CASSA DEL MONTE DEL FERRO (3137 m. = 10,292 ft. *It. map*). Traverse of the entire Ferro massif from S.E. to N.—Herren G. Dyhrenfurth and A. Spitz, September 7, 9, 1909. ‡

From San Giacomo di Fraele the party mounted the Bisella

* *Ö.A.Z.* 1910, pp. 204-5.

† *Cf. Zeitschrift D. u. Ö.A.V.* 1910, p. 281 footnote, where Dr. Dyhrenfurth points out that the correct name is Starler.

‡ *Ö.A.Z.* 1910, pp. 205-6.

glen to the second tarn (2233 m., source of the Adda), when they bore N. and attained over grass and débris a gap to the W. of Pizzo Aguzzo (2703 m., It. map), the easterly outlier of the Ferro massif. The W. and highest summit of that peak was hence quickly reached (? first recorded ascent) and a return made to the gap. The endless arête or watershed of the massif is now followed W.N.W. with ease to a gap near some splintered teeth, these were turned to the right (N.) and the crest regained beyond. An unmeasured peak (about 2900 m.) was soon passed, and the crest descended to a conspicuous gap (perhaps, point 2703 m.) separating the said unmeasured peak from the S.E. peak (3033 m.) of Monte del Ferro. Passing over 3033 m. and turning on to its W. slope, the party next attained the summit of Monte del Ferro (3050 m. = 10,007 ft., It. map). A third but much lower peak was skirted, and the party (it was growing dark) descended to the N.E. into the uppermost ravine of the Va Bruna glen where a porter met them with a tent.

Bad weather compelling a halt of 24 hours, the party resumed their march on the 9th, near the point where they had broken off, avoided the ascent of the S. peak (3128 m., easy of access) of the Cassa del Monte del Ferro, and mounted through a stony corry, between the two peaks of that summit, to the rocky crest coupling it with the Cima di Prà Grata (It. map) lower down to the E. Hence an easy climb to the left (W.) led them to the great cairn on the summit of Cassa del Monte del Ferro (3137 m.). The watershed is now cut off to the N. by cliffs, and the descent had first to be made by the line of ascent (i.e. the minor ridge leading E. to the Cima di Prà Grata) for a short distance, then followed a direct descent N. and a long traverse W. across steep snow slopes and ice gullies, till the watershed could be regained below and beyond the cliffs. This was followed—some interesting bits—passing over a point (apparently ?2987 m.) and many other unmeasured humps to point 3053 m., the most conspicuous peak to the N. of the Cassa (3137 m.). The watershed now sinks rapidly, and its crest becoming much more serrated, its W. slope was accordingly followed over rotten rocks, till the deepest gap between points 3053 m. and 2911 m. could be attained. Once more the crest was followed (not difficult) to the top of point 2911 m., the furthest and most northerly outlier of the massif. The descent was then made over steep débris and through woods to Ponte del Gallo (1693 m., S. map), whence the Spöl path and the Ofen road brought the party to the Il Fuorn Inn. (No times.)

This ridge traverse is upwards of 13 kilometres long. The party appear dissatisfied with the Italian map, which nevertheless throughout the district is immeasurably superior to the miserable (1/75,000) Austrian survey. The Siegfried is, as always, admirable.

The reader is referred, in addition to the quoted 'Ö.A.Z.', to Dr. Günter Dyhrenfurth's monumental and splendidly illustrated monograph on the Ofen Pass Group or 'Engadine Dolomites' in 'D.u.Ö.A.V. Zeitschrift,' 1910, pp. 241-83. E. L. STRUTT.

Bernina Group; Bregaglia District.

MONTE DISGRAZIA (3678 m. = 12,067 ft.) BY THE NORTH FACE.*
Messrs. W. N. Ling and Harold Raeburn left a bivouac (about 7000 ft.) at the last trees—larches—on the r. bank of the Disgrazia Glacier at 1.10 A.M. on August 8, 1910.

A steep scramble through bushes and grass led to the moraine, and the glacier was reached shortly after 2.35. Up this; formidable schrunds forcing the party some way up on the flank of the Pizzo Ventina. Then by an easily sloping snow valley direct towards the N. face of the Disgrazia—4.40–6.45. Snow here very soft and deep. As the direct route up the highest peak was guarded by a huge lunette-shaped ice battery a slight divergence was made to the r. (N.W.). The bergschrund was crossed at about 7.15. Above, steep slopes—50°–55°—by clinometer, at first snow, then ice; badly iced and steep rocks above, difficult climbing and a great deal of cutting led to N.W. ridge at the first slight top to N.W. of Cima Siber-Gysi at 3 P.M. Along corniced edge to final peak at 3.35.

Leaving at 3.40 the S.W. face was descended to the Preda-Rossa Glacier and Capanna Cecilia at 5.50. Weather fine to near top, then usual 1910 snowstorm and mist. Condition of mountain as expressed by an Italian party who had been up the S.W. route two days earlier, 'Invernale.'

HAROLD RAE BURN.

BADILETTO (about 3050 m. = 10,007 ft.).—This is the small but prominent pinnacle between the Cima Sant' Anna and Piz Badile. Its position is not shown on any map.

Signori R. and A. Balabio, July 19, 1909. † Starting from the Badile Club hut the first party mounted due N. over the small W. arm of the Badile Glacier, steering straight for the snow couloir leading to the deepest notch in the frontier ridge, which notch is just E. of the Cima Sant' Anna. The couloir was mounted with much difficulty owing to the dangerous condition of the snow; finally a steep scramble up rocks brought the party to the notch (3 hrs.). An exposed climb along the W. arête of our peak, entailing a traverse over its N. slope, led the party to the foot of the summit pinnacle, the top being attained by an almost vertical crack. It is of the most minute proportions (2 hrs.).

GEMELLI. N.W. SUMMIT (3259 m. = 10,693 ft. *S. map*). BY THE N. ARÊTE. Signori R. and A. Balabio and G. Scotti. August 12, 1909.—† This party started from the Badile Club hut and followed the usual route to the Colle dei Gemelli. From the pass they scrambled up some rocks in a N.E. direction to a gap N.W. of our peak and between it and some teeth. A ledge enabled them to turn

* Cf. an admirable monograph: 'Il gruppo del Monte Disgrazia,' by Dr. Romano Balabio (with a sketch map), in *Bollettino del Club Alpino Italiano*, Vol. xl. 1909.

† *R. M.* 1909, p. 422; 1910, pp. 192–3.

‡ *Ibid.* 1910, p. 214.

on to the peak's W. face, whence a chimney conducted them to the crest of the N. arête. This very sharp and smooth ridge was then followed, with one deviation, on to its N.E. slope to the top (4 hrs.). This is a longer but possibly more interesting route than the only previously known one up the S. face.

PIZ QUALIVO (3221 m. = 10,568 ft. *S. map*; or 3198 m. = 10,493 ft. *Lurani map*).—BY THE E. ARÊTE REACHED FROM THE S. Signori R. and A. Balabio and A. and R. Calegari, August 4, 1909.—* This party started from the Allievi Club hut in Val Zocca, and crossed into the Qualivo Glen by means of the E. Passo di Qualivo. They then bore N.W. to the Small Qualivo Glacier, mounted that glacier, and from it attained a marked depression in the main watershed, whence the E. arête was followed over a lower top (about 3100 m.), then turning some teeth to the summit (4 hrs.).

MONTE DI ZOCCA (3179 m. = 10,430 ft. *S. map*; or 3174 m. = 10,414 ft. *Lurani map*).—BY THE W. ARÊTE REACHED FROM THE S. Signori R. and A. Balabio, G. Scotti, and A. and R. Calegari. August 6, 1910.—† Starting from the Allievi Club hut, the first party skirted round the whole S. face of the peak in a W.N.W. direction, till they arrived at the base of a steep snowy gully leading to a marked gap in the main watershed or frontier ridge, and just E. of the little Pizzi di Zocca, 3081 m. It. map (1 hr. 20 min.). They then cut up this gully to the gap (1¼ hrs.) and followed the W. arête of our peak, scaling an awkward smooth bit and also a sharp tooth to the minor W. summit (2 hrs. 10 min.).

Turning on to the steep and snowy N. face, an upward traverse brought them to the E. and higher summit (1 hr.). Conditions 'as in winter.'

The route is interesting since it affords the only *safe* access to the summit from the Italian side.

PUNTA RASICA (3320 m. = 10,893 ft. *S. map*).—BY THE S.E. ARÊTE REACHED FROM THE S. † Signori R. and A. Balabio, G. Scotti and M. de Benedetto, August 20, 1909.—The first party starting from the Allievi Club hut followed the route of the Colle della Rasica to a point about two-thirds of the way up the ice gully leading to that pass. They then diverged to the N.W., and climbed up an obvious but difficult chimney furrowing the S. slope of the peak's S.E. arête; this chimney was mounted to its head, and thence a ledge could be cautiously followed till another chimney gave access to the crest of the arête. For the final very difficult scramble the usual route was employed (8 hrs.).

PIZZO TORRONE CENTRALE (3299 m. = 10,824 ft. *S. map*) by the E. angle of its N. face.

On July 11, 1910, Mr. R. W. Lloyd, with Josef Pollinger, left the

* *R. M.* 1910, p. 249.

† Kindly communicated by Doctor Romano Balabio.

‡ *R. M.* 1909, p. 422; 1910, p. 214.

Forno hut at 3.50 A.M., and at 5.25 reached the foot of the N. face of the Torrone Centrale after a very fatiguing walk in soft caked snow. After breakfast and a short rest they crossed the avalanche débris into and up the couloir rather to the E. of the centre of the N. face, and cut up it until the bergschrund was reached, and after some difficulty crossed. They then cut up the very steep snow couloir until they reached the oblique ridge of scattered rocks enclosing the small very steep glacier, down which the couloir runs. They then proceeded, partly by the rocks and partly by the couloir itself, until the rocks thinned out, and then cut straight up the very steep snow face to the foot of the rock ridge of the lower or W. top, and up the back of this by the snow, and so on by the ridge on to the lower top. From there it was only a matter of a short time to descend on to the snow arête connecting the top with the summit, which they reached after a rather awkward scramble up the rocks on the S. side of the arête, at 8.13 A.M. They left the summit at 8.15, and had to exercise the greatest care, descending backwards the whole of the steep snow face, and reached the foot at 10.4 A.M.

The snow on the face was very wet and bad, and but for the absence of sun would have been impossible. They went direct up the face, as a traverse would have been very dangerous owing to the state of the snow. This route is a 'variation' (more E.) of Route I. of the 'Climbers' Guide.'

PIZZO VENTINA (3253 m. = 10,673 ft. *It. map*). First recorded ascent. Signori R. and A. Balabio and A. Calegari, August 2, 1910.—* From the Ventina Chalets, near the snout of the Ventina Glacier, the party mounted that glacier as far as the N. base of the rocks, marked 2880 m. *It. map* (2 hrs.). A steep broken glacier rises to the W. of this point to the main N.E. arête of Monte Disgrazia, and fills a gully of very considerable width. The local name of the gully appears to be 'Canalone della Virgine.' They mounted the centre of the gully till a precipitous ice-fall was encountered ($\frac{3}{4}$ hr.), which had to be turned by a diagonal traverse from right to left (N.E. to S.W.) over ice slopes verging on 60° (1½ hrs.). The right bank of the gully was then followed till above a conspicuous patch of rocks, when a traverse to the left bank was effected, by which side of the great gully a broad snowy plateau just below the watershed was attained (2 hrs.). Bearing N. a snowy couloir brought the party to our peak's E. arête, which was followed over rocks and snow to the top (1½ hrs.). In the descent the S.W. arête was followed to a depression above the aforementioned plateau.

PUNTA KENNEDY (3286 m. = 10,853 ft. *It. map*).—This peak rises to the E. of the main N.E. arête of Monte Disgrazia. It appears to have locally been known as 'La Virgine,' but was re-christened by Doctor Romano Balabio in honour of Mr. E. S. Kennedy, the conqueror of Monte Disgrazia.

* *Bollettino*, No. 73, pp. 309-24.

First ascent same party and date as for Pizzo Ventina.

* The first party bore S. from the plateau at the head of the 'Canalone della Virgine,' by the minor N. arête or buttress of our peak (the It. map is painfully inaccurate), which is very gentle at first, lastly a steep scramble over rocks soon landed them on the summit (1 hr.). In the descent the party followed the rock and snow W. arête to a little gap between the peak and the main watershed or N.E. arête of Monte Disgrazia (the probable spot where the Messrs. Pilkington and Hulton first struck the said N.E. arête †) (1 hr.). Thence the descent was effected over the S.W. branch of the Ventina Glacier to the surface of that glacier (1½ hrs.).

I am much indebted to the courtesy of Doctor Romano Balabio for private information concerning his ascents; see also his admirable and exhaustive monograph on the 'Disgrazia Group' and sketch map in 'Bollettino,' Vol. xl. pp. 285-327.

E. L. STRUTT.

PASSO DELLA SPERANZA (about 3105 m. = 10,187 ft.).—I wish to correct an historical mistake that occurs in the 'Climber's Guide.' The Alps of the Bernina, Part I., under the heading of *Passo della Speranza* (p. 201).

It is there stated on the authority of 'Bollettino' No. 42 pp. 285-6, repeated in 'Echo des Alpes,' 1880, pp. 230-1, and Studer, iii. (1899) p. 214, that this depression (which has no height or name on the Italian map) has once been crossed 'en col.' I am informed, however, by my courteous Italian friend, Dr. Romano Balabio, that he has ascertained that the Italian guideless party of August 15, 1877, Signori F. Gamba, G. Duina, and P. Damiani, only crossed the *Passo di Mello* far to the N.W.

The mistake of course arose from the exceedingly confused account given by the 1877 party, and their description of the descent of their pass tallies admirably with the topography of the E. slope of the Passo di Mello. The N. slope of the Passo della Speranza has therefore never been touched, and Messrs. W. N. Ling and Harold Raeburn in their splendid ascent of Monte Disgrazia from the N., August 8, 1910, are the only party who have ever even approached the N. base of our 'pass.'

In any case the depression is not a true pass or worthy of a name. Dr. Balabio, however, names it Forcella Pioda on his map, and assigns a height of about 3200 m. to it ('Bollettino,' No. 73, p. 312).

E. L. STRUTT.

Bernina Group.

PIZ GLÜSCHAI (3600 m. = 11,812 ft. *S. map*).—BY THE E. ARÊTE REACHED FROM THE S. Signori A. Corti and B. Sala. Sep-

* *Bollettino*, No. 73, pp. 308-9.

† *A. J.* xi. pp. 248-52.

tember 7, 1909.—* This party, starting from the Marinelli Club hut, followed the route of the Fuorcla Fex-Scerscen to a point just E. of but close to the pass. Bearing rather to the left (W.), they then climbed up the rotten rocks of the peak's S. face; a traverse from right to left (E. to W.) of a steep and deep ice gully had next to be accomplished, followed by an upward (still in a W. direction) traverse by ledges to a projecting boss of brownish rock. They then bore upwards to the right (N.E.) by an ice gully, which was soon abandoned for the hard rocks of its left (E.) bank, whence a notch in the E. arête E. of the third great tower E. of the summit was attained. The arête was then followed to the top (6 hrs.).

The party when attempting to descend by the ordinary route were completely cut off by the crevasses of the Sella Glacier, and being obliged to bivouac for the night, returned on the following day to the E. arête, and descended to the Club hut by their line of ascent.

PIZ ROSEG (3942 m. = 12,934 ft. *S. map*).—BY THE S.W. FACE. Herr Julius Frohmann, with Christian Zippert of Pontresina and Niklaus Kohler of Meiringen, July 22, 1909.—† From the Mortel Club hut, the party followed the Sella Pass route nearly as far as the pass [2 hrs. 50 min.]. From this point a very steep and narrow ice gully rising from the Sella Glacier seams the whole S.W. face of the Central and highest summit of Piz Roseg, and appears to separate the N.W. summit (Schneekuppe, 3927 m., *S. map*) from the said Central summit. The party cut up this gully, the angle of which is *said* to be sometimes 70° (? 50° – 60°), till they reached a point about 300 ft. below the top, when they climbed hard rocks straight up to the Central summit (7 hrs. 20 mins.). The descent was effected by the usual route. The route is exceedingly interesting, constituting as it does an *entirely* new variation of the ordinary route and of the one by the S.W. arête.

E. L. STRUTT.

Eastern Alps.

NEW ASCENTS IN THE HOHE TATRA IN 1909.—The 'Ö.A.Z.' No. 821, November 5, 1910, contains a very careful summary—compiled by Dr. Jenő Serényi of Budapest—of all the new routes made in this group in 1909. The same number contains very full accounts of the first ascent of the N.W. face of the Gerlsdorferspitze, of the first passage of the N.W. arête of the Eistalerspitze, and of the first ascent of the Lomnitzerspitze by the E. face, which were all done by the brothers v. Komarnicki of Budapest.

NEW ASCENTS IN 1909.—The 'Ö.A.Z.' Nos. 823 and 824, December 5 and 20, 1910, contain a very careful summary—compiled by

* *R. M.* 1010, pp. 154–5, and communicated courteously by Professor Alfredo Corti.

† Communication from Christian Zippert.

Herr Fritz Hinterberger of Vienna—of all the new routes in the Eastern Alps which were opened in 1909. The summary is divided into groups, and gives the necessary references to published accounts of the various expeditions.

Caucasus.

*Bogkhobashi Group.**

NACHASCHBITA, S. PEAK (4300 m. = 14,105 ft.).—On July 29, 1910, Madame Helene Kuntze made the first ascent of the S. summit of Nachaschbita by the S. flank and S.E. arête.

ZICHGARTICHON (4136 m. = 13,567 ft.).—On August 2 the same lady made the ascent of this peak by way of the Zichgartichon Glacier (from P. 3307), the W. flank and the S.W. arête. Descent by same route, the lower part much exposed to stones.

SUGANTAU (4490 m. = 14,727 ft.).—On August 5 the same lady made the first ascent of the highest point, starting from the S. side by way of the Doppach Glacier and the E. flank.

NACHASCHBITA, N. PEAK (4393 m. = 14,410 ft.).—On August 7 the same lady ascended this peak. The line followed was from the S. by way of the E. lower Nachaschbita Glacier, a rocky rib, and the Upper Nachaschbita Glacier, finally up the icy W. flank (160 steps required) to the rocky N.E. arête, by which the summit was reached in three-quarters of an hour.

No further particulars are given in the very condensed report published in 'Ö.A.Z.' No. 823, December 5, 1910. Madame Kuntze points out that on Merzbacher's map the N. summit of Nachaschbita is not shown sufficiently to the N., and that it is a rock summit and lies between the points 4393 and 3924.

[A reference to the Bollettino of the C.A.I., Vol. xxx. No. 63, 1897, article *Nel Caucaso Centrale colla camera oscura. Terzo Viaggio* (1896), by SS. V. Sella and E. Gallo, and to Merzbacher's 'Aus den Hochregionen des Caucasus,' Vol. i. Tafel B. facing p. 72, makes it clear that Signor Sella's party made the first ascent of Suga's highest point (4490 m.) from the Suga Glacier. The illustration 'Monte Suga, 4490 m.' indicates the 'Ascensione Sella.' There is a sketch map on p. 327. For further information on this group see 'Merzbacher,' vol. i., and Freshfield and Sella's 'Exploration of the Caucasus,' vol. ii. p. 269, 'The Bogkhobashi Group.' Cf. also Freshfield's 'Central Caucasus and Bashan,' pp. 411-12.]

Kasbek Group.

A full report of the 1910 expedition to this group of Dr. Walter Fischer, Herr Viktor v. Friedrichs, Dr. Gustav Kuhfahl, and Herr Oscar Schuster is contained in 'Ö.A.Z.' No. 819, Oct. 5, 1910. The

* Cf. Freshfield's *Exploration of the Caucasus*, Vol. ii. p. 269 (map at end).

party left Dresden on July 9, and reached Wladikawkas* on July 14. After some trouble in procuring transport donkeys they finally pitched their tents in the Midagrawin Valley, near the point 1931 (Shtri-don in Freshfield's map, 'Exploration of the Caucasus'). This was their headquarters and they were able to engage a hunter, Inaltico Kalagoff, of the neighbouring village of Dschimara, who is described as a most useful man. On July 24 Messrs Fischer, Kuhfahl and Schuster, with Kalagoff, left their quarters at 4.30 A.M. and ascended to the Midagrawin Glacier, which they followed for a short time. They then struck up the Zariut Gorge—a wild gorge on the W. side of the glacier—for $1\frac{1}{2}$ hours. They traversed over snow and slaty débris to a rocky arête, and from this point descended a short way and then bore at first W. afterwards N.W., so as to reach the upper basin of a secondary glacier. From here they ascended the partly rock S. face of a **nameless sharp rock peak** (height about 4000 m.) whence they looked down into the Zariut-Don. The summit, of which this was the first ascent, was only reached at 3.30 P.M., owing to uncertain weather and soft snow. Descent through the séracs to a big block at the entrance to the Zariut Gorge. This big block has the initial P. painted on it (cf. Merzbacher, i. p. 878). Bivouac.

Next morning, July 25, Messrs. Fischer and Schuster again followed the Zariut Gorge to the rocky arête mentioned above, whence by a descent of 200 to 300 mètres they reached the W. basin of the Midagrawin Glacier, which route was thenceforth always followed, owing to the danger in the séracs. They reached the foot of the N. face of **Ziti-Choch**, and from there, in $1\frac{1}{2}$ hours, over good snow, the E. ridge of the mountains, which was followed without difficulty to the summit in $\frac{1}{2}$ hour. Height, 3907 m. Time from bivouac, $6\frac{1}{2}$ hours actual going. Very instructive view. This was a first ascent.

On July 27 the whole party reached, by the route of the 25th, the W. basin of the Midagrawin Glacier. While Dr. Kuhfahl, for photographic purposes, steered for the great rock island which divides the W. and E. basins and Kalagoff had been sent back, the others reached, up snow slopes, and followed the N. arête of **Resi-Choch** to the summit (over 3820 m.). First ascent. The highest point is the S. of three rock peaks, and it is to the W., not to the E., of the southerly of the two passes shown in Merzbacher's map. Actual going from camp, $7\frac{1}{2}$ hours. Descent mainly by same route to the rocky island. Bivouac.

On July 28 Messrs. Fischer, Kuhfahl and Schuster left the bivouac at 2 A.M. and followed the E. arm of the Midagrawin Glacier to the foot of the W. face of the Gimarai-Choch, and entered the snow basin between this peak and the **Suatini-Choch**. Up a snow wall and a short rib to the N. arête of the **Suatini**, which was followed to the summit (4473 m.). Hard work in ice and snow. First

* Names and heights are taken from Merzbacher's map.

ascent. Actual time from bivouac about $7\frac{1}{2}$ hours. View from Daghestan to the Elbruz, particularly fine of the S. slopes of the Kasbek group. Descent to the glacier by the same way. Then N. to the right lateral moraine of the glacier and W. under the S. face of Seigalan-Choch, over the dry glacier to the rock island Chizan-Choch (see Rossikow's map, *Imp. Russian Geog. Journal*, vol. 29).

On July 30 the party left their main camp at dawn, crossed an improvised bridge over the Midagrawin torrent and followed a faintly marked path to a herdsman's shelter on the W. slopes of the Midagrawin Valley. Ascending grass slopes in a S. direction they reached a great basin with an imposing glacier which adorns the E. flank of Zariut-Choch. Splendid view of the W. precipices of the Schau-Choch and of the Seigalan-Choch, which forms the W. shoulder of the former. The N. arête of **Zariut-Choch** was reached by following the glacier, snow slopes and easy rocks, and the summit (4062 m.) was thus gained in a few minutes by Messrs. Fischer and Schuster. First ascent. Actual time from bivouac about $6\frac{1}{2}$ hours. Merzbacher's map shows the peak too far S.W.

Two new routes are possible for the descent: either to follow the ridge to the rock point ascended on July 24, or to descend to the Zariut Gorge by steep snow slopes. The two climbers, however, descended the same way as they came up, since the route between the tongue of the Midagrawin Glacier and the camp is extremely trying. The camp was reached late in the afternoon.

On July 31 the party returned to Dargawsk in order to transfer their camp *via* the Fiag-don (*cf.* Sella's article in 'Bollettino,' vol. xxx.) to the Ardon Valley. This valley was reached at Unal and the main road ascended to St. Nikolai. The Zeya Valley was then visited (*cf.* 'Rivista C.A.I.' 1910, p. 183).

On August 6 the party crossed the Zeya torrent below Rekom and ascended the Kaltber Valley, keeping on the E. side of the torrent. The tents were pitched at about 2300 m.

On August 7 Messrs. Fischer, Kuhfahl and Schuster crossed the stream and ascended the W. lateral moraine of the glacier, subsequently the glacier itself and, finally over moraine and great blocks of rock, after great exertions reached a bivouac (about 3300 to 3400 m.) near the edge of the upper névé basin of the Kaltber Glacier at the foot of the E. precipices of the N. arête of the Kaltber. Time, $4\frac{1}{2}$ hours.

On August 8 Messrs. Fischer and Schuster left the bivouac at 3.40 A.M., crossed the névé by lantern light, and reached the E. arête of the **Kaltber**, which they followed to the summit (4409 m.). Actual time from bivouac 4 hours 20 minutes. Some of the gendarmes on the arête were turned on the S. side by easy rocks. The view stretches from Daghestan to the Dschanga. Descent by same route.

The party returned *via* Alagir to Wladikawkas, which place they left on August 13, reaching Warsaw on August 16.

Their report of this Caucasian journey is a model of conciseness and clearness. J. P. F.

Himalayas.

The following route was followed in 1909 by Lieutenant P. T. Etherton, Indian Army, some passes being crossed for the first time, so far as is known, by any explorer :—

From India across Asia to Siberia, through Kashmir, Gilgit, Hunza, the Pamirs, Yarkand River, thence through Chinese Turkistan, over the Thian Shan Mts., Dzungaria, Mongolia, the Altai Mts., and Siberia to the Trans-Siberian Railway. Time occupied, one year. Distance covered, 3500 miles.

March 30, 1909.—Bandipur to Gilgit. Crossed TRAGBAL PASS (11,900 ft.) leading from Bandipur Kashmir to Gurai.

April 4.—BURZIL PASS (13,500 ft.).

April 28.—MINTAKA PASS (15,430 ft.). Leading from Hunza on to the Pamirs.

May 20.—PAYIK PASS (15,300 ft.). Leading from the Taghdumbash Pamir on to the Little Pamir.

May 26.—ILI SU PASS (16,750 ft.). Leading from the Taghdumbash Pamir to the Yarkand River.

May 29.—QOGOI QOTCHKOR PASS (17,400 ft.). Leading from the Yarkand Valley to the Kulan Urgu Valley. No record appears to exist of this pass having been crossed by any explorer.

June 4.—KARA DAWÁN (14,400 ft.). SUNDUL PASS (15,350 ft.). Both leading from the Kulan Urgu Valley, C.T., to the Asgar Sai Valley.

July 27.—KARA DAWÁN (11,400 ft.). Leading from the Kasharian side of the Thian Shan Mts. into the Great Yulduz Valley. (Very difficult and no record of a previous crossing by any explorer.)

August 2.—KHANPUR PASS (about 9000 ft.). Leading from the great Yulduz Valley to the Tzanma Valley, Thian Shan Mts.

August 4.—A pass, name unknown, leading from the Tzanma Valley to the Jirgalan Valley, Thian Shan Mts. Height about 9000 ft.

August 30.—KOK TEREK PASS (11,250 ft.). From Kok Terek Valley to Agiass Valley, Thian Shan.

October 30.—KHANAKAI PASS (height about 9500 ft.). Leading from the Pekkes to the Ili Valley, Chinese Central Asia.

November 19.—TALKI PASS (height, 8000 ft.). Leading from Atai on the Chinese Kulja-Urumchi-Pekin road, to Lake Sairam.

Several other passes during November and December in the unknown country lying to the north of Kulja, Chinese Central Asia. Also in Mongolia and the Tarbagatai Mts. and Saur Mts., and an unsuccessful attempt to cross the *Great Altai Mts.* on December 20–28, 1909.

P. T. ETHERTON, *Lieut. Indian Army.*

New Zealand.

RUTHERFORD PASS (c.7200 ft.), over the Liebig range from Lake Tekopo to the Murchison Valley, and thence to the Ball Hut, Tasman Glacier—December 27, 1908. Mr. G. E. Mannering, with T. C. Fyfe, from Lake Tekopo rode to the head of Cass stream. Leaving Rutherford's Hut at 4 A.M. they followed the true head of the Cass stream, passing the terminal of the Faraday Glacier, descending from Mt. Hulton, until, by an ancient moraine of the 'Ridge' Glacier, they reached, at 10 A.M., a col on the divide between Cass and Murchison, which they named Rutherford Pass, after Mr. John S. Rutherford. Ascent easy. Estimated altitude, 7200 ft.

Descent to Murchison Glacier, at first over steepish rocks, then by good grass slopes, the final thousand feet very steep. Reached the Tasman Glacier near its lower end, 1 P.M. Thence to Ball Hut 4 hours. Time from Hut to Hut, 13 hours. Estimated distance 14 miles. Distance from Tekopo to Ball Hut 44 miles, against 84 miles *via* Lake Pukuki and Hermitage.

NEW PASS (c. 6300ft.) from Tasman Glacier to Hermitage. December 30, 1909. Mr. and Mrs. G. E. Mannering, with D. Thomson as guide, left the Ball Hut at 5.30 A.M. and walked for 1½ hours down the Tasman Valley. They then struck up a shingle slope and reached at 11 A.M. the saddle between Mts. Kinsey and Mabel, climbing in dense fog. Good rocks for the last hour. Magnificent view from the saddle. On the descent they bore to the S. over good rocks and finally down easy grass slopes. On the Hooker side the slopes are terraced with old moraines, and several small lakes are passed. Reached Hermitage 5.30 P.M.

Canadian Rocky Mountains.

On July 17 Messrs. A. L. Mumm (with Moritz Inderbinen) and J. N. Collie left Wolf Creek (where the railroad ended) for the Yellow Head Pass. Fred Stephens, John Yates, A. McConnochie and G. Swain also were with the party. The Pass was reached on July 29. The following day A. L. Mumm and M. Inderbinen ascended a peak that lies a few miles west of the pass, and on the north side of the trail; this peak is probably the Mt. Bingley on Milton and Cheadle's map. On August 3 a peak on the east side of the Moose Valley was climbed by A. L. Mumm, J. N. Collie, F. Stephens and J. Yates, in pursuit of wild goat. The pass between the Moose river and the Smoky river was crossed on 7th and a camp was made at the foot of the Robson glacier on August 9. Here the party remained till the 26th, waiting for fine weather and for the snow to clear off even the lower slopes of Mt. Robson, but the

weather got worse and worse and no attempt was made to climb the mountain. To show how bad the weather was, from August 1 to September 10, that is to say forty-one days, on twenty-eight of these days it was either snowing or raining all day or wet during some part of the twenty-four hours. On three separate occasions snow was lying thick at the bottom of the valley. On August 16 a peak just opposite the end of the Robson glacier (about 10,700 ft.) was climbed by A. L. Mumm, J. N. Collie, and M. Inderbinen. On August 19, after sleeping out near the foot of a glacier lying west of the camp and north-west of Mt. Robson, the same party, together with F. Stephens, J. Yates, and G. Swain, climbed a snow mountain lying north of the White Horn Mt. (about 11,100 ft.). The White Horn mountain seemed to be about 600 or 700 ft. higher; and Mt. Robson over 2000 ft. higher. These three mountains are apparently the three highest of the Robson group. After three days heavy snow on August 25 an attempt was made to climb Mt. Resplendent, south-east of Mt. Robson, but as the snow at the head of the glacier was lying two feet deep it was found to be impossible. It is worth mentioning that this year the whole of the water draining from the Robson glacier went west to the Fraser River; in 1908 Prof. Coleman mentions that it partly went to the Smoky and partly to the Fraser; also in 1909 much the same state of affairs prevailed; as a result in 1910 the whole of the Robson glacier presumably was in British Columbia, perhaps in 1911 it may be entirely in Alberta.

On August 26 the return journey was begun by a new route via the Smoky river, the Stoney river, the Hay river and Solomon Creek to Brulé Lake on the Athabasca. On September 1 an expedition was made over into British Columbia and back again by means of a pass below tree limit. From a point some distance above and west of the pass, Mt. Robson, the White Horn and the snow peak ascended on August 19 were all visible. The watershed between the Smoky and the Stoney rivers was crossed on September 6, Rock Lake on the Hay river was reached on the 13th, Brulé lake and the Athabasca on the 16th, and Edson and the railway on September 21.

VARIOUS EXPEDITIONS.

Pennines.

DOM (4554 m. = 14,942 ft.), by the W. Arête.—The W. arête may be said to commence at the Grabenhorn, 3375 m. —11,073 ft., from which, except for a slight descent at first, it rises with varying but easy gradients to the point where it strikes the steep W. face of the Dom at a distance of some 4 hours. It then forms the S. edge of this steep W. face until some 1500 ft. higher it changes its direction from E. to N., and becoming the top edge of the face, resumes the form of an arête.