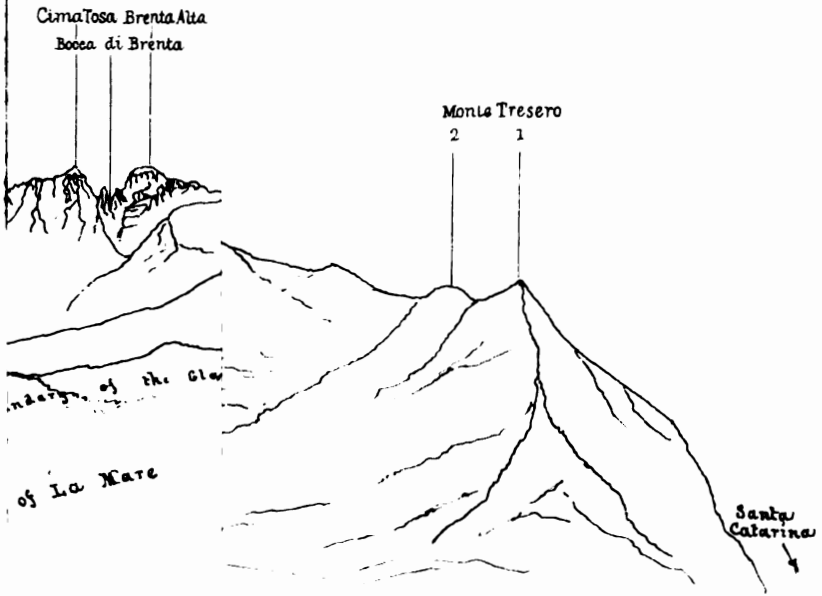


we are most in want of further information. But, throughout the entire district embraced by the map, we are most anxious to obtain the assistance of those who are well acquainted with the localities. And any gentlemen willing to assist in this work are requested to communicate with the Editor of the Map as early as possible.

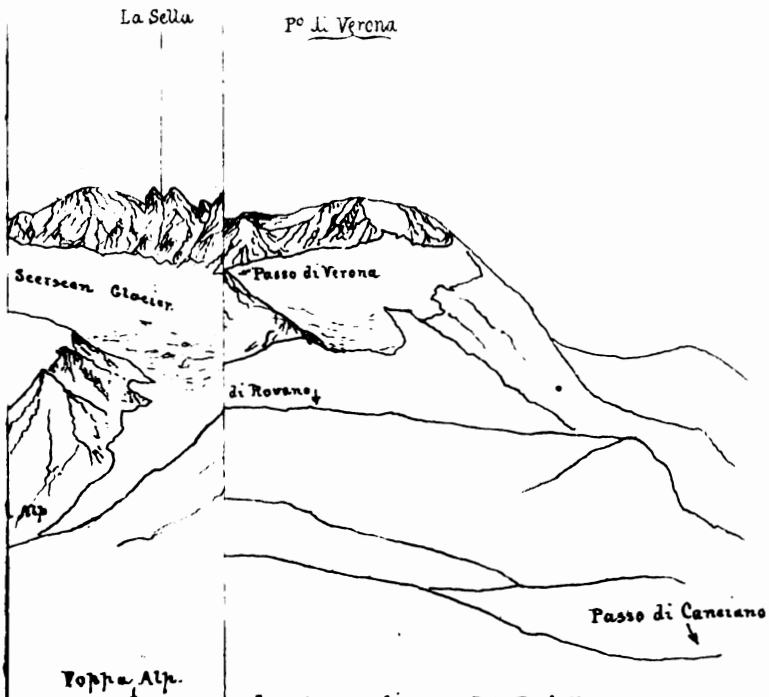
NEW EXPEDITIONS IN 1866.

The Austrian Alps.

May 30.—THE HOHER GJAJDSTEIN-JOCH (8,500 to 9,000 feet, 2,591 to 2,743 mètres).—Mr. F. F. Tuckett, accompanied by Christian Almer and a Hallstadt guide named Karl Schupfen, slept at the Wiesen Alp on the 29th of May, and on the following morning ascended the Dachstein with the intention of subsequently effecting a pass to Ramsau and Schladming in the Ennsthal, over the head of the Karls-Eisfeld, and down the Todten Knecht Glacier. The enormous quantity of fresh snow, however, and its extremely dangerous condition, rendered it impossible to descend directly to the S., and they accordingly skirted the ridge which extends eastwards from the Dachstein to the Diendl, Fensterl, and Koppenkahrspitz, till, 1 hr. after quitting the summit, they reached the S.E. angle of the Karls-Eisfeld, and gained a depression in the ridge forming its E. boundary (of which the Hoher Gjaidstein is the culminating point) at a spot to the S. of the latter peak, and between it and the Fensterl. A considerable glacier was here seen descending in an E.N.E. direction towards the strange, wild, stony plateau situated between Obertraun and Ramsau, and enclosed to the N. and S. respectively by the Hoher Gjaidstein and Koppenkahrstein. Schupfen gave this the somewhat vague name of Schladminger Eisfeld; but in Pauliny's map of the Salzkammergut, on which its position is very fairly laid down, no such name, nor indeed any other, is to be met with, though it is apparently only inferior in dimensions to its W. neighbour, the Karls-Eisfeld. It is believed that neither in the latest edition of Schaubach's great work nor in the notices of the Dachstein group in the volumes of the Austrian Alpine Club does any reference to it occur, nor is any hint given of the possibility of effecting a pass from Hallstadt *viâ* the Karls-Eisfeld to the Ennsthal in this direction, so that Mr. Tuckett feels justified in assuming, at least provisionally, the prerogatives of a discoverer, and calling his pass the Hoher Gjaidstein Joch. Striking down the S. side of the glacier, beneath the cliffs of the Fensterl, and quitting the ice some distance above its termination, the party subsequently kept well round to the right, and after crossing a wearisome succession of ridges and ravines, the precise relation of which to the higher summit of the *massif* was concealed by clouds, finally dropped down by the path from Obertraun to Ramsau. Time: Col to point where the glacier was quitted, $\frac{1}{2}$ hr.; thence to brow of steep descent overlooking Ramsau, $1\frac{1}{2}$ hr., mostly through deep soft snow; to Ramsau church, $1\frac{1}{2}$ hr., and 1 more (or $4\frac{1}{2}$ hrs.



sk. of M^{ts} Cevedale, (Fürkele) looking South. T. E. Tuckett.



the Pizzo Scalino. F F Tuckett.

from the pass) to Schladming. Karl Schupfen is now said to be the best guide for the Dachstein at Hallstadt, and though silent and not particularly attractive, he is young, strong, and active, does not mind carrying a load, and appears to be well acquainted with the mountain.

June 12.—THE SCHWARZERBERGER JOCH (10,094 feet, 3,077 mètres) from the Ober-Iss Alp in the Alpeiner branch of the Stubaythal to Lengenfeld and Sölden in the Oetzthal, via the Alpeiner and Schwarzerberger Glaciers. Ascent of the SCHRANKOGL (11,476 feet, 3,498 mètres), the highest point of the Alpeiner Ferner group.—Messrs. F. F. Tuckett and F. A. Y. Brown, accompanied by Christian Almer and Franz Andermatten, left the Ober-Iss châteaux at 3 A.M. on the 12th June, reached the Alpeiner Alp in $\frac{3}{4}$ hr., the foot of the magnificent Alpeiner Ferner in $\frac{3}{4}$ hr. more, and the Schwarzerberger Joch in $2\frac{3}{4}$ hrs. (or $4\frac{1}{4}$ from the Ober-Iss Alp.) In passing the two icefalls, they kept to their left, or on the (true) right side of the glacier, in order to take advantage of the shade, but the opposite course would probably always be quicker, and at a later period of the year when the snow has melted and the crevasses are more developed, it would be decidedly easier. In $\frac{3}{4}$ hr. after leaving the pass—which is a very fine one—they traversed the névé of the Schwarzerberger Glacier, reached the foot of the final peak of the Schrankogl, and, mounting straight up by its E. arête, gained the summit without difficulty in $\frac{3}{4}$ hr. more.

It proved to be a superb point of view, as, from its insulated position, it commands charming glimpses of valley bottoms. Mr. Tuckett was informed that Herr Schöpf, now Pfarrer of Sölden and formerly of Gurgl, had ascended this peak twenty or thirty years before, and a rumour has also reached him that that indefatigable and successful mountaineer, Herr Specht of Vienna, has vanquished it more recently; but he has seen no printed notice of either expedition, to which, moreover, MM. Pfaundler and von Barth make no allusion in their recent and admirable work on the Stubay group, merely stating that the summit is 'attainable.' Apart from any question of priority, it has been thought that these few particulars may prove interesting and useful to English mountaineers. $\frac{1}{2}$ hr. sufficed for the return to the glacier, and, following the summit of the right lateral moraine, the party quitted the ice in 40 minutes for the slopes of turf, and in $\frac{1}{2}$ hr. more (or $1\frac{3}{4}$ hr. from the summit) reached the level surface of the head of the Sulzthal. From this point to Gries was an easy walk of $1\frac{1}{4}$ hr., and in $\frac{3}{4}$ hr. more they arrived at Lengenfeld in the Oetzthal, whence they strolled up to Sölden in $2\frac{1}{2}$ hrs.

June 16.—PASSO DI VIOS OR VIOZZI (10,900 feet, 3,322 mètres?), from Cogolo in Val di Pei (one of the heads of the Val di Solo) to Sta. Catarina in Val Furva, via Pejo, the Val di Vios, and the Vios and Forno Glaciers, and between the Saline and Pizzo di Vios (the Vios-Spitz and Rocca Marcia respectively of the government map of Tyrol). ASCENT OF THE SALINE (11,883 feet, 3,622 mètres), the VIOS-SPITZ of the map.—The same party proceeded up the Val di Sole and, finding that the baths of Pejo were occupied by troops, halted for the night at

Cogolo where they engaged a porter, Domenico Venere by name, who proved to be a very fair mountaineer. Passing the baths of Pejo, they struck across the meadows on their right, and up the slopes beyond, for the entrance of the Val di Vios (which might, however, probably be reached more directly from Cogolo viâ the *village* of Pejo), and, proceeding up the glacier which occupies the greater portion of it and was entirely covered with soft snow, they reached in 5¼ hrs. the ridge between the Saline and Pizzo di Vios (the Vios- or Viozzi-Sp. and Rocca Marcia respectively of the map of Tyrol). They were informed by the porter that some years ago he had accompanied certain 'geografici' (probably the engineers charged with the Kataster-Messung, or cadastral survey) to the summit of the last-named peak, the ascent of which was effected by the ridge descending from it in a S.E. direction, and bounding the Vedretta di Vios on the N.E. The pass, which Mr. Tuckett proposes to call the Passo di Vios, or Vios-Joch, and the height of which he estimates at about 10,900 feet, furnishes decidedly the most direct route between the Val di Sole and Sta. Catarina, and though later in the year the Vios Glacier may present greater difficulties on account of crevasses, the W. side will probably always prove easy. From the col the party struck off to their left, up the steep E. slopes of the Saline, and, after a stiffish climb for a few hundred feet, followed by a more gentle ascent along a lengthy and most beautiful snow arête and over some intermediate but inferior summits, gained the highest point in 1 hr. from the pass. Having secured a set of bearings of the surrounding peaks with a prismatic compass, they returned to the Passo di Vios in ½ hr., and, striking across the arm of the Vedretta di Forno which descends from the pass of the same name, joined the route of the latter on the slopes beneath La Fornaccia, and in 2¼ hrs. from the col reached the end of the glacier, whence 1¼ hr. more (or 3½ in all) took them to Sta. Catarina. Venere accompanied them only as far as the pass, and was well content with 4 gulden (8 francs).

June 18.—PASSO DELLA FORNACCIA (11,500 feet, 3,505 mètres?) AND PASSO DELLA MARE, OR TSCHENGELS-JOCH (11,400 feet, 3,474·5 mètres?), both from Sta. Catarina to the Val della Mare, by the Tschengels Glacier, and between La Fornaccia and the S.W. peak of the Monte Cevedale, Fürkele, or Ceval-Spitz (the Zufallspitz of the Tyrolese and Lombard maps). THE FÜRKELE-JOCH (12,200 feet, 3718·5 mètres) from the Val della Mare, by the Glacier of the same name, between the two highest summits of the Cevedale, or Fürkele, to the valleys of Forno, Martell, or Sullen, by the Cedeh, Langenferner (the Zufallferner of the map of Tyrol), and Sullen Glaciers respectively, and, in the last-named case, also viâ the JANIGER SCHARTE (10,532 feet, 3,210 mètres?). ASCENT OF LA FORNACCIA (11,950 to 11,960 feet, 3,642·5 to 3,645·5 mètres?), and also that of the S.W. and loftiest summit of the Cevedale, or Fürkele (12,348 feet, 3,763·5 mètres), both as well as the passes, new.—The same party, accompanied by a porter as far as the Tschengels Glacier, quitted Sta. Catarina at 1.10 A.M., passed round the foot of the Forno Glacier in 2 hrs.' easy walking, and, ascending the spur (Mte. Pasquale of the Lombardy map) from the Cevedale which bounds the Tschengels valley on the W., and divides

it from that of Cedeu, gained the plateau of the glacier above the ice-fall in $1\frac{1}{4}$ hr. more. Crossing the nearly level surface of the névé, and then gently ascending on the opposite or eastern side, they reached in $\frac{3}{4}$ hr. the foot of the steep slopes leading to one of the lowest points (but a little to the right or S. of the lowest of all) in the ridge between La Fornaccia and Mte. Cevedale. Here their porter gave out and had to be dismissed, being overcome by the cold which was unusually great for the season and altitude, the thermometer at 5.30 indicating -14° centigrade, or $6^{\circ}5$ Fahrenheit ($25^{\circ}5$ of frost). In 1 hr. more the ridge was won after occasional step-cutting, and they found themselves on a sort of narrow undulating plateau, sloping away at first quite gently towards the Val della Mare, and gradually rising on the right and left into the respective summits of La Fornaccia and Monte Cevedale. From near the point where they stood a spur runs in an easterly direction, and divides the glacier of La Mare on the N. from the nameless one down which the route from the Passo di Forno lies; and by descending to the S. or right of the spur (just in the angle formed by it and La Fornaccia) this last glacier is easily reached, and the S. side of the Passo di Forno thus connected with the Tschengels Glacier. The pass would be appropriately called Passo della Fornaccia, and must be at least 11,500 feet in height. By following the watershed in a northerly direction for a short distance to its lowest point (which is not so accessible direct from the W. side as the Passo della Fornaccia) and descending thence in an easterly direction to the N. of the spur just alluded to, the head of the glacier of La Mare may be reached with ease, and a second pass, about 11,400 feet in height, effected to the Val della Mare. This might be called the Passo della Mare, unless this be thought to suggest the idea of its being in the neighbourhood of the Pizzo, or Pallo, della Mare, in which case the name of Tschengels-Joch might perhaps be substituted for it.

Having satisfied themselves of the practicability of a descent on the east side, Mr. Tuckett and his companions at once struck off to their right (S.), up the gently inclined northern slopes of La Fornaccia (provisionally christened Pizzo di Tschengels in our number for September 1865, page 146), the summit of which was easily reached in $\frac{3}{4}$ hr. at 7.30 A.M. As on the Saline two days previously, the view was superb, the immense quantity of fresh snow imparting to it additional wildness and grandeur. After a halt of $\frac{1}{2}$ hr. the col was regained in 15 minutes, and the party proceeded in a northerly direction parallel with, but rather below and on the E. side of, the long snowy ridge connecting the Fornaccia and Cevedale. Leaving on their left the depression of the Passo della Mare, or Tschengels-Joch, they continued from this point gently to rise, and in $1\frac{1}{4}$ hr. after leaving the Passo della Fornaccia stood upon the previously unascended S.W. peak of the Cevedale. Herr Mojsisovics seems to have supposed (see 'Jahrbuch des Oesterrn. Alpen-Vereins,' neue Folge, 1. Band, page 272) that the more easterly summit gained by him was the higher of the two, but the stormy weather he encountered and his state of bodily discomfort, not to say suffering, probably led him into error, as

Mr. Tuckett satisfied himself at once of what he had previously only suspected when on the Confinale, Orteler, and Königspitz, viz., that the S.W. peak overtops its neighbour by at least 30 to 40 feet, a conclusion which a subsequent observation with the level fully confirmed. This is not the place to dilate on the beauties of the view (a portion of which is shown in Pl. I.), but it may be stated that it was such as might have been anticipated from the peculiarly favourable and central position of the Cevedale, constituting as it does the 'Knotenpunkt' or nucleus, of the Orteler group. The wind was very powerful and the cold intense, but shelter was obtained a few feet below the summit on the S.E. side, and 1 hr. was devoted to a careful examination of the topography. After satisfying themselves of the perfect practicability of a descent *viâ* the Glacier della Mare to the valley of the same name from the ridge connecting the two highest peaks, they dropped down upon the Sattel in question, and then, cutting their way down the steep slopes on their left and crossing a concealed bergschrund, they proceeded at a brisk pace down the moderately inclined névé which descends towards the Langenferner, or Cevedale, Pass (10,766 feet, 3,281.5 mètres), the Suldenspitz, and the névé of the Langenferner Glacier. Passing a little to the right of the first two, and skirting the head of the last as nearly at a level as practicable, they reached in 1 hr. from the peak a depression in the ridge forming the watershed between the valleys of Martell and Sulden. Here a magnificent view of the head of the Sulden Glacier and its bounding summits—the Orteler, Klein-Zebbru, and Königspitz—burst upon them, and they halted for a while to enjoy the scene and erect a cairn. From Herr Mojsisovics' description ('Jahrbuch, &c.,' neue Folge, 1. Band, page 284), it would appear that the depression in question must be the Janiger Scharte (10,532 feet, 3,210 mètres), which was first discovered by that gentleman and his guide Janiger, and constitutes a most charming and convenient link between the Valleys of Martell and Forno and that of Sulden, as well as between the last-named and the Val della Mare, for, as already hinted, nothing is simpler than to ascend from it to the Sattel between the two highest peaks of the Cevedale or Fürkele, and to drop down from thence in a S.E. direction upon the N.W. angle of the Glacier della Mare, which affords an easy means of descent to the valley below. This pass, which Mr. Tuckett proposes to name the FÜRKELE-JOCH, to distinguish it from the Passo di Cevedale, is at once the highest in Tyrol (12,200 feet?), and, combined with the Janiger Scharte, affords by far the grandest and shortest route from the Stelvio road to the Val di Sole.

Leaving the Janiger Scharte, the level of the upper portion of the Sulden Glacier was reached in 15 minutes by a series of glissades, and crevasses and moraines being pretty much covered throughout its entire length with snow in very fair condition, the ice was quitted in 1 hr. more at its very foot, whence it is only $\frac{1}{4}$ hr.'s walk to Gampenhöfe, the highest cluster of houses and châteaux in the valley, which was thus reached in $2\frac{1}{2}$ hrs. from the summit of the Cevedale. It was only 2.45 P.M., and though the party had only been for 10 hrs. in active motion, they had succeeded in polishing off two new and very fine peaks, besides discovering and partially traversing three very fine passes averag-

ing 11,700 feet in height, and, after skirting the Cevedale Col, had finally wound up with the passage of the Janiger Scharte. How, feeling elated at this series of successes, they planned other triumphs for the morrow, and how pride had a fall, will be seen by Mr. Tuckett's narrative of 'A Night Adventure in the Suldenthal,' in the present number.

Lest it should be supposed that the list of new expeditions that may be made around Sta. Catarina is by this time exhausted, it may be worth while to state that the following peaks have not, so far as is known, been ascended, whilst none of the passes named have, it is believed, ever been actually traversed throughout their entire extent by any one person. Peaks:—Video-Spitz (11,361 feet); S. or highest point of the Madatsch ridge (11,245 feet); Ziegerpalfen-Spitz (11,300 feet?); Trafoier Spitz (11,750 feet?); Thurweiser-Spitz (11,962 feet); Klein-Zebru (12,255 feet); Orteler Spitz from the S. or S.E. (12,814 feet); La Giumella (11,842 feet); and Palle della Mare (11,855 feet). Passes:—1. Pass from Val Zeburu direct to head of Vitelli Glacier (N.W. side already effected). 2. Pass from Val Zeburu to Trafoi direct, or vice versa, between S. peak of Madatsch ridge and the Ziegerpalfen-Spitz (S. side and part of N. already effected; 10,500 feet?). 3. Pass from Val Zeburu direct to Suldenthal between Orteler and Klein-Zebru (E. and W. sides *separately* effected by Herr Mojsisovics and Messrs. Tuckett, Freshfield, &c.; 11,500 feet?). 4. Pass from Val Zeburu to the Suldenthal between Klein-Zebru and Königspitz (11,700 feet? new, and probably rather difficult). 5. Fürkele-Joch (N. half already effected, and southern side ascertained to be practicable; 12,200 feet?) from Val della Mare to the valleys of Forno, Martell, or Sulden, between the two highest peaks of the Monte Cevedale, or Fürkele. 6. Passo della Mare from Sta. Catarina to Val della Mare between Mte. Cevedale and La Fornaccia (W. half already effected, and E. side ascertained to be practicable; 11,400 feet?). 7. Passo della Fornaccia from Sta. Catarina to Val della Mare between the last-named col and La Fornaccia (11,500 feet? same remark as last). 8. Pass from Sta. Catarina to Val di Sole between Saline and Palle della Mare, descending by Val Favietta (entirely new on E. side, and partially so on W.; 11,000 feet?). 9. Pass from Sta. Catarina to Val di Sole between the Pizzo della Mare and La Giumella, descending by Val Cadini, Piana, or Umbrina (same remark as last; 10,900 feet?). 10. Pass from Sta. Catarina to Val di Sole between La Giumella and Pizzo della Mare, descending by Val Piana or Umbrina into Val del Monte (same remark as last; 11,700 feet?). 11. From Sta. Catarina to Val di Sole over the S.W. shoulder of the Pizzo della Mare by the Gavia valley and glacier, and down by Val Umbrina (or Piana?) and Val del Monte (W. half already effected, and apparent practicability of S.E. side ascertained; 11,500 feet?).

Add to these six first-class passes explored throughout their whole length (Madatsch-Joch, Orteler Joch, Königjoch, Passo di Cevedale, Passo di Forno, and Passo di Vios), and ten peaks already vanquished (Mte. Confinale, Mte. Cristallo, Orteler Spitz, Königspitz, Mte. Cevedale, La Fornaccia, Pizzo di Vios, Saline, Pizzo della Mare, and Tresero),

and it will be seen that Sta. Catarina is perhaps unrivalled, except by Zermatt, as the centre of numerous (about thirty-six) fine expeditions, half of which are rendered more attractive by partial or entire novelty, whilst the Stabilimento delle Acque furnishes excellent head-quarters either for the mountaineer or the tourist.

Bernina District.

June 22.—Ascent of the Pizzo SCALINO (10,925 feet, 3,330 mètres) from the Foppa Alp, near the junction of Vals Campo Moro and Lanterna, viâ the Passo di Canciano, and back by the Campagneda Alp.—It is believed that this peak has already been ascended by some of our own countrymen (Messrs. Gosling?), and probably by engineers also, but not having met with any notice of the expedition, Mr. Tuckett ventures to think that he may be doing good service to mountaineers by drawing their attention to the peculiar merits of the mountain as a point of view. Leaving the Foppa Alp at 1 A.M., the same party proceeded for about $3\frac{1}{2}$ hrs. by the route of the Canciano Pass to a point not far from the col, and then, striking off to the right up the slopes leading to the glacier which descends from the Pizzo Canciano and the Pizzo Scalino, they gained the top of the latter in $2\frac{1}{4}$ hrs. by its S.E. arête. The peak stands so entirely free and apart, and all the summits between it and the Bernina are so much lower, that the details of the topography are admirably seized. It is in fact a much loftier Cramont, with the advantage of being thrown rather further back from the main range, and with a fine outlook in the opposite direction, where the Lombard and Orteler Alps are seen to perfection above the blue chasm of the Valtelline; in short, it is *the* point to be ascended on the S. side of the Bernina *massif*. Three hours were spent on the summit in obtaining an outline sketch (Plate II.) of the Bernina range from the Pizzo di Verona on the E. to Piz Tremoggia on the W., and in a minute examination of the Monte della Disgrazia, which resulted in the conclusion that the chances of effecting an ascent from any of the ravines which enter the Val Malenco in the neighbourhood of Chiesa would probably be small, unless it should prove possible to gain the S. end of the jagged Kamm which constitutes the upper portion of the mountain, and then work along this in a northerly direction to the highest summit. The first might, it is believed, be accomplished, but the passage of the long toothed arête would probably be tedious and difficult, so that it will be safer to follow in the footsteps of Messrs. Kennedy and Stephen, merely starting from the head of the Val di Sasso Bisolo, or, if more convenient, from the Pioda Alp in the Val di Mello. Quitting the Pizzo Scalino at ten, Mr. Tuckett and his companions retraced their route as far as the lowest point of the S.E. arête, and then, skirting round to their left along the N.E. flank of the peak, dropped down upon the snowy ridge, extending from the latter in a northerly direction, which forms the W. boundary of the glacier, and the eastern one of the basin occupied by the Alps of Prabello and Campagneda. Descending in the latter direction, Campagneda was reached in $1\frac{1}{2}$ hr. from the top, the châteaux of Campo Moro in $\frac{1}{2}$ hr., and the Foppa Alp in 20 minutes (or

2½ hrs. from the Pizzo itself). If the ascent be made from Chiesa, the proper course would unquestionably be to sleep at, or at any rate proceed by, the Prabello-Alp, and striking up thence to the right, gain the summit by its W. arête. Then dropping down upon the Passo di Canciano, Poschiavo or Le Prese might easily be reached the same day. Travellers proceeding from Poschiavo to Chiesa and wishing to include the Pizzo Scalino, would only have to reverse the route just described, and, if the snow be in a favourable condition, they would probably reach their destination almost, if not quite, as early as if they were merely to cross the Canciano Pass, and descend by the ordinary route through Vals Poschiavina, Campo Moro, and Lanterna. If Foppa be the starting point for the ascent, the Campo Moro and Campagneda route is the preferable one, the only objection to it being that the ground between those places is exceedingly rough and broken, and the track not over clear even by daylight, so that in the early morning, unless a porter with thorough local knowledge were taken, there would be risk of losing the way or at any rate of wasting valuable time.

June 23.—CRESTA-AGIUZA-SATTEL (11,930 feet, 3,636 mètres) from the Foppa Chalets, viâ the Campo Moro and Fellaria Alps, and the Fellaria, Scerscen, and Mortiratsch Glaciers, to Pontresina. Ascent of Piz Bernina (13,294 feet, 4,052 mètres) from the Sattel by a new route.—The same party quitted the Foppa Alp at 12.10 a.m., and their progress being a good deal delayed by rough paths and darkness, were 3 hrs. in reaching the Fellaria chalets, only a few inches of whose roofs were visible above the snow. This, however, being in fair order, 1½ hr. sufficed to gain the W. plateau of the Fellaria Glacier, and ¾ hr. more a col nearer Piz Zupo than that by which the passage to the Scerscen Glacier is usually effected. Descending upon the head of the latter, they reached in ½ hr. the foot of the slopes of snow and rock up which lies the route to the Cresta-Agiuza-Sattel. For the next hour or more their progress was very satisfactory, but the nearly horizontal *traversée* to the Sattel itself from the arête which descends from the Cresta Agiuza peak towards the Scerscen Glacier occasioned considerable delay, as the steep slopes consisted of bare and unusually hard ice over a large portion of their surface; and numerous and deep steps had to be cut, so that another 1¼ hr. slipped away before the col was gained. It was then 9.15 a.m., and they had been 7¾ hrs. from Foppa, exclusive of halts. But the day was still young, so the word was passed, and without halting they struck up the S.E. arête of the Piz Bernina. Following this without any particular difficulty as far as the point where it is generally quitted in order to descend on the right into the great bergschrund, they were at first taken somewhat aback by the discovery that in the actual state of the snow further progress by the usual route was absolutely impracticable, whilst, even if they succeeded in attaining the E. face of the peak, it was almost certain that they would run great risk of dislodging avalanches. Almer was so decided in his refusal to tackle the enemy in this direction, whilst entirely sharing the desire to reach Pontresina viâ the Piz Bernina, that it was at once resolved, as a last resource, to

keep on up the arête as long as it was practicable, and, having reached the S.W. peak either by it or in some other way, to endeavour thence to gain the highest summit by the final Kamm connecting the two. The quantity and condition of the snow rendered caution necessary, but by keeping as much as possible to the actual ridge the danger of avalanches was diminished, and working quietly but steadily upwards, the S.W. peak was won $1\frac{1}{2}$ hr. after quitting the Sattel. The arête from hence to the highest point was of considerable length and extreme narrowness, whilst the right-hand slope was formidably steep, and on the left the cliffs fell away in the grandest and most precipitous manner, to the head of the Tschierva Glaciers. At this elevation the snow was fortunately in pretty good order, and sometimes upon the actual crust, and at others, when this was too frail to bear their weight, a foot or two below it on the N.W. side, the party crept cautiously onwards till the foot of the final rocks was almost attained, when it thinned off to something so nearly coming under the definition of possessing position without magnitude that they had to betake themselves for a short distance to a more convenient but rather ticklish ledge of rock a few inches in breadth, which formed a sort of cornice to the wall of cliff descending to the Tschierva Glacier. The last climb was now soon disposed of, and in $\frac{1}{2}$ hr. after quitting the S.W. peak, or in 2 hrs. from the Sattel, they stood upon the highest summit. After spending $\frac{1}{2}$ hr. here, and erecting a cairn, the Sattel was regained by the same route in $\frac{3}{4}$ hr. Thanks to the quantity of snow, Almer's splendid leading and icecraft, and previous familiarity with the anatomy of the Mortiratsch icefall, its foot was reached in $1\frac{1}{4}$ hr. from the Sattel, Boval in $\frac{1}{2}$ hr. more, and Pontresina in $2\frac{1}{2}$ hrs., or 5 hrs. from the summit of Piz Bernina.

July 21.—Messrs. D. W. Freshfield and C. C. Tucker, with François Devouassoud, starting from Molins on the Julier road, and passing through the little village of Sur, climbed the steep alp which lies below Piz d'Err, and in $2\frac{1}{2}$ hrs. reached a small glen directly overlooked by the two highest peaks of that mountain. Into this glen several couloirs descend from the névé above. 'Choosing the one furthest to the left, in $1\frac{1}{2}$ hr. we reached the col lying between the two peaks. Bearing well to the right, we descended without difficulty into Val Bevers, reaching Samaden in 8 hrs.' easy walking from Molins. The views during the day were very fine, comprising the peaks of the Bregaglia and the whole range of the Bernina, besides the mountains N. of the Engadine. Height of pass, about 10,800 feet.'

N.B.—The couloir furthest to the right on the Molins side, which presents perhaps the most marked col of all, does not lead over the main chain.

July 23.—FEDOZ-JOCH (9,800 to 9,900 feet).—The same party left Sta. Maria and ascended the Fedoz-Thal to the foot of the glacier, the icefall of which was surmounted by its (true) left side. A col close to the nameless peak marked 3,153 mètres on the Federal map, was reached in $4\frac{1}{2}$ hrs. The view of the Disgrazia from this point is perhaps the finest obtainable. Monte Rosa and the Saasgrat are also

visible. The descent to Chiareggio lay over easy rocks and pastures, and took $2\frac{1}{2}$ hrs.' walking. Height, about 3,000 mètres.

July 25.—PUNTA TRUBINESCA (11,106 feet).—The same party left the baths of Masino at 7 A.M., and reached the small glacier at the N.W. base of the Pta. Trubinesca in $2\frac{1}{2}$ hrs. A short couloir of snow gives access from the head of the glacier to the N.W. arête, which is both broad and easy. The view from the peak is very fine, and includes the lakes of Como, Sils, and St. Moritz.—Ascent, 4 hrs. 40 min.; down, 3 hrs. 15 min.

July 26.—Mr. D. W. Freshfield, with F. Devouassoud, crossed from the baths of Masino to Sondrio by a route the parts of which, although all previously known, had never before been combined in one day's walk. 'From La Rasica we climbed the steep ascent to the shoulder of the Disgrazia, dividing Val di Mello from Val di Sasso Bisolo. Thence we made an attempt on the Disgrazia, which was abandoned, owing to the time occupied by step-cutting in the very hard ice which clothed the highest ridge of the mountain, when only some 30 feet below the top. Returning to the shoulder, we descended on to and traversed the flat glacier which fills the head of Val di Sasso Bisolo. A sharp rock climb of 700 feet brought us to a ridge overlooking a snow-filled gully communicating with Val di Torre. Before long we reached the highest chalet, and found a pleasant path, which led us down through very pretty scenery to Torre in Val Malenco, 1 hr.'s drive from Sondrio. Actual walking, baths to Torre, $13\frac{1}{2}$ hrs.'

July 28.—PUNTA DI TEO (10,007 feet).—Mr. D. W. Freshfield and F. Devouassoud ascended from Poschiavo by the Val di Teo to the little lakes at its head. 'A steep pull over rock and grass ensued, and brought us to the ridge overlooking Val Grosina, near the S. foot of the final peak, the rocks of which resemble those of the Riffelhorn but are somewhat more difficult. In descending we rounded the low ridge which forms the N. buttress of the peak, and crossed Val di Campo to La Rosa. Time, up $4\frac{1}{2}$; down to La Rosa, $3\frac{1}{4}$ hrs.'

July 31.—CIMA DEL LARGO (11,162 feet). Messrs. D. W. Freshfield and C. C. Tucker, with F. Devouassoud and Alexander Fluri, starting from the Maloya Inn (which is much improved, and now offers very fair quarters), reached the head of the Forno Glacier in 3 hrs. Broken slopes of névé and a short couloir led up to the ridge dividing the Forno and Albigna Glaciers just to the N. of the tower-shaped peak of the Largo.

The ascent of this was effected by cutting steps up a steep slope, which may at times be of hard ice and offer some difficulty. A tolerably broad and easy crest leads to the snow-dome, which forms the summit. Owing to the weather, there was no view.

Ascent 6 hrs., descent $4\frac{1}{2}$ hrs. The time occupied in descending was increased by fresh snow having effaced all the steps.

August 1.—PIZ VADRED (10,610 feet). VALLORIA PASS (about 10,100 feet).—Mr. D.W. Freshfield, with F. Devouassoud, left the Scaletta path near the Fontana Alp, and mounted by the torrent which descends on the right from the glaciers of Piz Vadred. The S. peak was reached in $4\frac{1}{2}$

hrs. from Capella, by a steep but easy climb over snow and rock. There is scarcely any difference in height between the two summits of the mountain, but, if anything, the northern (which appears excessively difficult of access) has the advantage. 'The view of the Bernina chain is more complete than from any other point I know of, and the Orteler and Adamello groups are also seen to great advantage. From the foot of the peak we struck across snow slopes to a pass lying to the W. of the snow-dome marked 3,151 mètres on the Federal map, and descended by the Scaletta Glacier to Dürrenboden in $2\frac{1}{4}$ hrs. from the peak. The new col thus made may perhaps be called the Valloria Pass, from the name of the glen which leads up to it on the southern side. For mountaineers going to the Engadine it offers a very pleasant substitute for the Scaletta, than which it commands far finer views.

August 4.—The same party, with the addition of J. Gort, of Klosters, as porter (after a day's detention by weather), started from the Swiss Alpine Club hut at the foot of the Silvretta Glacier, $4\frac{1}{2}$ hrs. above Klosters. A narrow snow-saddle at the head of the glacier marked Winterthäli on the Federal map, was reached partly by the rocks separating this ice-stream from the larger one of the Silvretta in $1\frac{3}{4}$ hr. from the hut.

The name of Verstankla Glacier has been substituted for that of Winterthäli on the Excursions-Karte of the Swiss Alpine Club, whose members also christened, but did not cross, the Verstankla-Thor. In descending, the upper portion of the icefall of the Tiatscha Glacier was traversed to the rocks on its left side, by which the lower and uncrevassed glacier is easily reached.

A good path leads down through Val Lavinuoz to the Engadine.

Time, $1\frac{3}{4}$ hrs. to col; down to Lavin, 3 hrs.

August 7.—The same party (without Gort) started from Bergun at 3.30 a.m., and ascended by a cart track through pine forests and hay meadows to the grassy ridge overlooking Val Sparlotsch. By crossing the head of this glen,—a waste of dolomite boulders—the base of the Tinzenhorn was reached. 'A succession of broad ledges led up to the N. Arête, which, however, soon became impracticable, and we traversed narrow but not difficult ledges until well on the precipitous face of the peak. Thence to the top was a constant scramble up short, but very steep, cheminées of rock. The summit is a long ridge easily traversed from end to end. After a stay of $2\frac{1}{4}$ hrs., we descended by the W. face of the mountain on to the ridge connecting it with Piz St. Michel. On this side, notwithstanding its steepness, there is no difficulty or risk except from loose stones.

'Nearly midway between the Tinzenhorn and Piz St. Michel we discovered a most remarkable pass, connecting the head of the glen which leads down directly to the baths of Alveneu with the Val d'Err. A deeply cut gap in the cliffs which unite the two mountains is approached on either side by two perfectly straight couloirs of moderate inclination. That on the S. side is a mere gully between perpendicular walls of rock, and is masked from below by a magnificent dolomite tower.

'After a short halt beside a little blue tarn beneath the cliffs, we

descended the grass slopes of Alp Tijjal, and, crossing the stream of Val d'Err, traversed the hill side by a rather indistinct footpath to Roffna, 45 min. below Molins on the Julier road. Times,—to foot of peak $2\frac{1}{2}$ hrs. slow; ascent, 3 hrs.; descent to lake, $2\frac{3}{4}$ hrs.; to Molins, $2\frac{1}{4}$ hrs. D. W. F.

The Tinzenhorn was also ascended later on the same day by Herr E. Hauser, of Chur, with Jenni and Fleuri, of Pontresina. There must be some error in the relative heights assigned to the Tinzenhorn and Piz St. Michel on Dufour's map, as the former, instead of being 29 mètres lower, appeared to be slightly higher than its rival.

Tödi District.

July 19.—RUSEIN LÜCKE (11,100 feet?).—Messrs. D. W. Freshfield and C. C. Tucker, accompanied by F. Devouassoud, left the Grünhorn hut to ascend the Tödi. 'Descending immediately on the Biferten Glacier, we attacked the centre of the icefall, and made our way up it without real difficulty, till two enormous crevasses near its head gave Devouassoud an opportunity of displaying his skill as an iceman. These surmounted, we found the upper slopes of névé enveloped in a thick fog. In consequence of this and a violent storm of wind we abandoned the Tödi, and began our search for the Porta da Gliems. We soon found ourselves on a marked col, which a break in the mist showed to overlook the small glacier lying under the cliffs of the Tödi on the S. side of the Sandgrat Pass. Our col lay between the Piz Rusein, or Tödi (11,887 feet), itself about 800? feet lower than its highest peak) and the Bleisasverdas (11,234 feet). A descent was effected by means of a very long and excessively steep couloir, which took over 2 hrs. to traverse, and where the greatest caution was necessary. In a less favourable state of the snow this couloir would be extremely hazardous, and cannot therefore be recommended to mountaineers descending from the Tödi, while the rocks on either side appeared to us almost impracticable. Height of couloir about 2,500 feet, and that of the pass itself about 11,100. Below the glacier the ordinary route of the Sandgrat Pass was followed to Trons in the Vorderrhein-Thal. Times: $4\frac{1}{2}$ hrs. to col; 6 hrs. for descent to Trons.'

Bernese Oberland.

THE BALTSCHIEDER JOCH (11,500 feet?).—Messrs. D. W. Freshfield and C. C. Tucker, with François Devouassoud, having crossed the Wetterlücke (which seems this year to have relapsed into its traditional state of easiness) on July 9, left the Curé's at Platten on the morning of the 10th, to attempt the Bietschhorn by its N.E. arête. 'Ten minutes above Platten we began to climb the very steep slopes to our right, until a track was crossed which led us round the brow, and to a point below the little Birch Glacier. Turning to our left, mingled slopes of rock and snow brought us to the ridge bounding the névé of the Standbach Glacier. A short walk across this led to a broad snow col at the base of the Bietschhorn, overlooking on the S.E. the Baltschieder Glacier. We began the ascent of the pyramid by some steep but easy

rocks, succeeded by ice-slopes requiring much step-cutting, until a point was reached where a ridge comes in on the right; hence to the summit the way lay along an exceedingly narrow and often corniced arête of snow, further progress along which was rendered impracticable by a cold wind when we were about 250 feet below the summit. Later in the season the ridge would probably be partially rock, and much easier to traverse. Returning to the col, we descended without difficulty by the Baltschieder Glacier and Thal to Visp. Future travellers are recommended to keep to the right in descending, and to leave the ice below the bend of the glacier for the grass slopes on the right bank, as we wasted both time and trouble amongst the gigantic moraines in which the glacier terminates. An ascent from Platten to the col via the Standbach Glacier, would probably be very difficult, as the ice-fall, seen from above, looks most formidable. Times: to Col, 3½ hrs.; descent to Visp, 4½ hrs.' walking.'

We have also heard of an ascent of the MÖNCH, from the Wengun Alp, by M. Von Fellenberg, but no particulars have reached us. The great quantity of snow on the mountains this year doubtless gave a favourable opportunity for this expedition, which has before failed through the whole upper part of the mountain being covered with ice.

St. Bernard District.

MONT BLANC DE CHEILLON.—This peak was ascended on July 18, by the Rev. F. C. Fitton, with Nichel and Frederic Pagot. They started at 3.30 from the Chermontane chalets, reached the Col de Mont Rouge at 8, and thence bearing to the N.E., reached the summit at 10. A *steinmann* was found on the summit, and a bottle containing the card of a Swiss gentleman, but so far as we are aware, there has been no previous ascent by an Englishman. The descent was made by a different route, down the N.W. face of the mountain, and they reached the Col de Cheillon at 21.30 and the Arolla chalets at 3.30.

COL DE VALSOREY. *July 14.*—Messrs. C. E. Mathews and Reilly, with Daniel and Emanuel Ballay (the former of whom proved himself a very efficient guide), left St. Pierre at 4.40 a.m., reached the chalets of Valsorey at 6.5, went straight up the Glacier de Valsorey to its head, and reached the pass, the lowest point between the Combin and Velan at 10, after a steep ascent, including an hour's step-cutting. Easy snow slopes lead down to the pastures at the head of the valley above Ollemont, which is not much more than 3 hrs. from the Col. This pass is supposed to have been crossed once before, but no note of it has yet appeared. It is an easy day's walk from St. Pierre to Aosta, and commands superb views of the near mountain, and of the Grivola.

Chain of Mont Blanc.

July 7.—Messrs. Reilly and C. E. Mathews, with Michel Ducroz and Michel Balmut, attempted to cross the chain by the Glacier de Pierre Joseph, which is the easternmost branch of the Glacier de Léchaud, and not a secondary glacier tributary to it. They left the

Montanvert at 3.40 a.m., and went straight up the glacier without difficulty ; when about half-an-hour from the ridge, snow came on, they went too much to the right, and following a steep but easy couloir, found themselves at 12.30 at the top of the Aiguille de l'Eboulement. The weather slightly clearing they descended to the true Col de Pierre Joseph, and looked down on the groin of the Tuolet glacier. In such weather it was impossible to attempt the descent on the Italian side, the pass therefore yet remains to be effected, but the Chamouni side presenting no particular difficulty, future attempts ought to be made from the side of Courmayeur.

Mont Blanc District.

On 14th July, Rev. Geo. C. Hodgkinson, with Ambroise Couette, of Chamouni, and Joseph Obrozenn, of Champéry, leaving the Grands Mulets at 2.26 a.m., reached the summit of Mont Blanc at 8.6 a.m., remained there, making actinometrical observations under a cloudless sky, until 11.1 a.m., getting back to the Grands Mulets at 1.46 p.m. Simultaneous observations of the instruments were made at Chamouni.

The temperature on the summit during the observations ranged from 22° to 24° F., and in the valley at the same time from 63° to 77° F. In the valley at 2.10 p.m. the temperature reached 82°.

A detailed report of the work will be made to the Royal Society.

NOTES AND QUERIES.

ALPINE BYWAYS. XV.—*From Engelberg to Altdorf by the Rothgrätli.*—I have in a former year crossed the Surenen between these two places ; but the route above mentioned is so superior in interest and scenery, and so little known, that some description can hardly fail to be of use. It is but just alluded to in 'Central Alps,' p. 174, and the way I took (14 Sept. 1865) was not, as there mentioned, 'through the Horbisthal,' but it mounted directly from the Engel to the Blankenalp, and circled round the head of that valley without touching it ; then after the Alp was passed, the wide expanse of the Griessen Glacier (the Rothstock Glacier of Mr. Ball) lay on the right all the way to the summit, the Engelberger and Uri Rothstöcke standing almost in front. The joch is between the former of these peaks on the right and the Wallenstöcke on the left ; it is a narrow ridge, with the glacier just named S. and the Rothgrätli Glacier N. Its height is about 8,500 feet, and the ascent occupied nearly four hours. Towards the N. there is a sea of hills, with Pilatus, the Rigi, and the Mythen prominent among them, and on that morning (it was not much past eight) the whole shape of the Vierwaldstätter See could be traced by the dense and motionless white mist that filled the hollows where it lay. The splendour is, however, on the other side ; here the fine range across the Engelberg valley forms the first line, rising above which are the Spitzliberg, most to the left, and the mountains bounding,