

Ce qui donne 2615^m, 1 pour la hauteur de l'Alta au-dessus de Turin et, par suite, 3134^m, 6 pour l'altitude de la Tête de Moÿse.

Tous ces résultats surpassent la cote qu'on trouve dans la feuille 201 de la carte de l'Etat-Major français, cote qui est de 3110^m; mais la différence n'est pas très-forte. Pour les deux dernières altitudes la différence n'est que de 1/89.

Ce résultat me paraît assez satisfaisant, particulièrement si l'on a égard à ce qu'il a été obtenu en un seul jour, par un individu seul, accompagné d'un homme pour lui porter les instruments.

Si avec les valeurs trouvées directement pour α , β , γ , ϕ , on calcule la valeur de ψ , au moyen de l'équation (c), on obtient

$$\psi = 19\text{g}, 39,$$

valeur qui est inférieure de 0^g, 26 à celle trouvée directement.

ALPINE NOTES.

In the 'Mittheilungen des Deutschen und Österreichischen Alpenvereins' will be found notices of the following expeditions.

The Zwölferkofel.—Two chamois-hunters of the Sexten Thal, Michael and Johann Innerkofler, made the first ascent of this peak on September 28 last from the Oberbachern Alp. A snow-filled gully where steps had to be cut was the principal difficulty. Santo Siorpaes and a friend climbed the same peak a day or two later.

The Jalouz was ascended from the west side by the Coritenzaschlucht for the first time by Mr. Carl Wurmb, with Michael Gernutt of Oberprett and Andreas Straholz of Predil. The peak had been previously reached from the Trenta valley.

In the Zillertal group the Hornspitzen were reached by some native climbers with Stephan Kirchner of Lutlach as guide, and several passes accomplished.

In the Graian Alps M. Martelli, with J. J. Maquignaz and S. Meynet as guides, has made the first ascents of the Pointe de Céréssole, both peaks of the Roccia Viva, the Grande Rousse, and the Col de Grande Rousse from Val Grisanche to Notre Dame de Rhêmes, as well as of the Pointe de Güin in Val Tournanche.

ASCENT OF THE GROSS GLOCKNER.—The following letter has been received from Mr. W. H. Baillie-Grohman.—Months ago I had determined to ascend, if possible, the Gross Glockner on or about New Year's Day, but the extreme severity with which the present winter set in seemed to drown all hopes of succeeding. About the end of November I communicated for the first time with the Kalser guides, respecting the feasibility of my plan. The majority maintained that the undertaking was impossible; some four or five, however, thought otherwise. Snow fell throughout the whole month of December so that when I left the Inn valley the ground was covered to a depth of 3 to 4 feet.

I arrived in Kals December 29 and found the snow if not less, certainly not more, than in the Inn valley, which of course put fresh hope into my heart.

On speaking with the guides who assembled on hearing of my arrival, I found that with not one exception they thought the undertaking quite impracticable on account of the depth of snow and the great danger of avalanches. My persuading powers and the promise of double and treble '*taxen*' availed me nought; so I determined to wait till fine weather set in and then make a last trial.

On December 31 the weather cleared up and the cold increased from -5 R. to -11 R.

I renewed my attacks on the guides, and at last succeeded in prevailing upon four of them to accompany me. These four were by no means the best known of the guides, but they had the advantage of being all of them chamois hunters, and, therefore, better acquainted with winter mountaineering than the rest. Providing ourselves with ample stores, as we did not know how long we should be away, we set out from Kals at 2 o'clock in the afternoon of New Year's Day. Contemptuous remarks and jeering smiles on the part of the assembled guides and a crowd of idlers made us more than ever determined to succeed.

The Törgen hut, a small chalet in the Ködnitz valley, was reached a couple of hours after sunset, and here we decided to cook our supper and then proceed. The cold was intense, my thermometer scaling -17 R. or 6 degra. below O. F. Our supper finished and everything unnecessary for the actual ascent left behind, we set out at midnight, three of us carrying lanterns, and all of us having snowhoops on our feet. The depth of snow was over 3 feet, but owing to the snowhoops we rarely broke further than a few inches over our knees. Our progress was naturally slow and terribly fatiguing, though we changed leaders every 10 or 15 minutes.

Leaving the Stüdlehutte far to our left, we endeavoured to reach the Adlersruhe in a direct line impracticable in summer, by crossing the breadth of the Ködnitz Glacier.

Peter Groder, a celebrated chamois hunter, and the best man of the guides, had had the misfortune to get into avalanches twice in his life, but was saved on both occasions by a miracle; it was, therefore, quite natural that he should dread more than the rest of us to make their acquaintance a third time. So that when at three different times avalanches thundered past us in unpleasant proximity, it cost me five or ten minutes' talk to persuade the man to continue the ascent.

At last, after some terrible hard work through heaps of drifted snow, up to our chest, we reached the Adlersruhe just as the sun was rising, displaying a spectacle of unique grandeur, ten times finer than in summer. The wind was blowing terribly keen and cold, so that we scarcely halted, but proceeded immediately to the base of the Klein Glockner.

Here we had to change our tactics, the whole of the latter mountain being one mass of ice. We had provided ourselves with iron shovels, crampons and snowhoops, but that we should want an ice-axe none of us had dreamt of, and it was owing to this mistake that the ascent of the Klein Glockner was so terribly awkward an affair. Anybody who has ascended the Gross Glockner from Heiligen Blut will remember how steep the slopes of the Klein Glockner are, and these coated with ice

became very awkward indeed. To add to our hardships the wind rose to such a degree that very often we had to crouch down not to be swept away, and shaking with cold, our position several times was dangerous in the extreme.

On the crown of the Klein Glockner we came across a phenomenon which had never been witnessed by any of us five. The top of the K. G. is ordinarily a mere sharp knife-like edge running towards the Gross Glockner. Instead of this we found on reaching the top that we were standing on a broad platform some 60 feet long and from 12 to 16 feet in width.

I was at that moment the second in the file, and sticking my berg-stock into the half-frozen snow, I found that it penetrated and would have slipped through had I not held it firmly. On looking down through the hole I perceived that perpendicularly some 4,000 feet below was the Pasterze Glacier. Of course we retreated precipitately, but nevertheless I and the leading guide had been standing for some minutes on a shelf of snow which the wind had drifted against the smooth surface of the precipice forming the northern side of the Klein Glockner. It is wonderful that this shelf, not thicker than 3 feet where it joined the rock, should have withstood our double weight. This serves as a good illustration of the fearful force of gales in winter-time at high elevations. The 'saddle' connecting the G. and K. Glockner was a decidedly bad place, owing to the ice and the high wind.

At five minutes to 10 o'clock we reached the top of the Gross Glockner. Our feelings you can imagine, but it will seem strange to you to hear that all four guides knelt down and prayed, a custom which these hardy fellows do not follow on ordinary occasions.

The cold had abated—6 R. or 18 F. was quite bearable, but not sufficient to thaw our provisions, which without any exception were frozen as hard as stone, so that the refreshments we stood so much in need of had to be returned untasted into our bags. The schnaps even was in a half-frozen condition, and considering the bad nature of the descent and our exhausted condition, we refrained from taking any for fear of evil consequences.

Depositing my card in the cairn and raising a flagstaff to its proper position, we ran up a red flag.

What the feelings of the Heiligen Blut men were on seeing this red patch can be easily imagined. On three consecutive winters had they tried to vanquish the G. G., and though they once got as far as the K. G. they had on every occasion failed to reach the spot we were now standing on. These attempts had been made in winters when very much less snow made high elevations less inaccessible.

The view was magnificent beyond description: a dark dead blue sky and the air clear to such a degree that peaks invisible in summer were now visible in all their outlines to the naked eyes. The Ortler, and behind it the Bernina group, were quite distinct.

We stayed about 35 min. in our elevated position, and then returned over the 'saddle' on to the Klein Glockner. Looking down the terribly steep ice slope, unprovided as we were with any instrument to cut proper steps, it appeared impossible to get down. With the greatest

caution, and making use of our crampons which latter were of the greatest possible service, we managed to reach the Adlersruhe. From there to Kals we met with nothing extraordinary excepting one avalanche. It seems strange that in ascending in the cold night we had met three of them, while on our return in daytime, with a bright sun shining, we only saw one of these unpleasant phenomena.

At 4 o'clock the same afternoon we entered Kals. Our flag had been seen, and we met quite a crowd who had come to meet us and proffer us their congratulations. A fast of more than 18 hours and great bodily exertions rendered us five famishing mortals whose attacks on every shape of food were closely watched and admired by a crowded audience in the Glockner Wirth's cosy parlour.

Next day I walked to Lienz, where my appearance created no less excitement than in Kals. The names of my four dauntless guides were, Peter Groder, Caspar Gorgasser, Andrae Kerer, and Josef Kerer; the latter, though a capital guide on ordinary occasions, pleased me the least.

[A winter ascent of the Grand Tournalin is also recorded in the Italian papers, and an attempt frustrated by bad weather on the Grand Paradis. The March number of the Geographical Society's 'Proceedings' contains an interesting account of a winter ascent of Fusi-yama, effected with the aid of rope and ice-axes. We think most readers will be surprised to learn that the height of this mountain, with which Japanese art has made us all so familiar, is between 13,000 and 14,000 feet.—EDITOR.]

LA PANIA DELLA CROCE.—TUSCAN APENNINES.—The Pania is one of the principal summits of the Apuan Alps, a great spur which diverging from the main chain of the Apennines at a point about midway between Genoa and Pistoja extends in a S. and afterwards in a SE. direction till it sinks into the plain watered by the Serchio and the Arno at a point near Pisa. During the latter part of its course this spur runs nearly parallel with the sea coast, from which it is only separated by the belt of level and fertile land along which the railway from Pisa to Spezia is carried.

Although this group of mountains has been known for ages as the seat of the celebrated marble quarries of Massa and Carrara, its scenery seems to have attracted less attention than its intrinsic beauty deserves. The three chief summits are the Pisanino (6,722 ft.), the Pizzo d'Uccello (6,150 ft.) and the Pania della Croce (6,102 ft.)* An account of an attempt by Captain Utterson Kelso on the last-named peak, which was foiled by bad weather, was given in the 'Touriste' of April 6, 1873. The following notice of an ascent of this fine view point, made by me in 1874, may have some interest for mountaineers who chance to be returning from Italy by the Mediterranean coast line and have twenty-four hours to spare.

Alighting at the little road-side station of Querceta at about 1 p. m.

* The heights are taken from the trigonometrical survey of the principal heights of Tuscany made by Signor Giovanni Inghirami. Bollettino del Club Alpino Italiano, vol. vi., No. 20.

on September 15, a short drive of 3 miles through olive woods brought me to Serravezza, a village picturesquely situated at the entrance of a valley which cuts deep into the heart of the mountains. Starting in the course of the afternoon from the humble but clean Locanda Neri at Serravezza, I mounted the easternmost of the two valleys which unite their streams at that place as far as Ruosina (3 miles), and turned up the glen which at that point comes in on the left. At one mile from Ruosina the road, which is available for carriages up to this point, divides into three. An easy walk of an hour-and-a-half along the uppermost branch leads to the hamlet of Levigliani buried in magnificent chestnut woods. At this place (about 1,300 feet above the sea) a clean bed can be secured at the village shop, which also supplies bread and wine, cheese, butter, and eggs. From Levigliani a well-engineered paved track leads to the summit of the ridge, separating the side valley in which the village stands from the main valley mounting from Ruosina.* Following this ridge a small upland pasturage is gained from which the highest point of the Pania rising abruptly on the right can be reached without difficulty, partly by a sheep track and partly over rocky but easy slopes. The summit commands a splendid prospect, including the valley of the Arno from Leghorn to Florence, and the coast of the Mediterranean from near Genoa to the hills of distant Elba.

A young man at the Locanda Neri, named Giulio Santi, now knows the way to the top. If he is absent, Stefano Barbone, a charcoal burner, may be met with at Levigliani. Times:—From Serravezza to Levigliani, a short 3 hours. Thence to the summit of La Pania, 3 hours. For the descent from La Pania to Serravezza $3\frac{1}{2}$ hours will suffice. The scenery to be enjoyed on this little expedition is of a high order throughout—the bold promontories of pink and white marble, and the planed precipices of the higher peaks standing out in splendid relief from the rich chestnut forests of the middle heights and the still denser vegetation of the low-lying valleys that sweep round their base.—C. C. TUCKER.

THE LAQUIN AND ROSSBODEN PASSES.—Since the publication of the February number of this Journal Mr. A. W. Moore has pointed out to me that, in supposing his Gamser Joch and the Simmeli Pass to be one and the same thing, I am in error. He very kindly says that his own expression (1 A. J. 139) that the Gamser Joch is 'immediately SE. of the Simmelihorn' is misleading, and indeed, inasmuch as his pass must be more remote from that peak than the Simmeli Pass, it may have conduced to my misapprehension. He thinks that from the E. ridge of the Nanzertal (the Sirvolten Pass) the Simmeli Pass was unobserved by him, and I myself from the Rossboden noticed only one pass between ourselves and the Simmelihorn which seemed to go very near to that peak. Mr. Moore's position to the N. may well have disclosed the Gamser and concealed the Simmeli, while mine, much to the S,

* No doubt this point can also be reached from Ruosina without making the detour to Levigliani, and a pleasing variation might be obtained by descending this way.

would naturally reverse matters, each of us getting an oblique view only. Mr. Ball, too, in describing the Gamserjoch, which he identifies with the Mattwald-grat, states that it was from the latter pass that Herr Studer ascended the Simmelihorn, in 1 hour—which might be if, as I have no doubt, Mattwald-grat and Simmeli Pass are synonymous terms, but it would be hardly possible from the Gamser as between the two passes stands a peak, the Magenhorn, which must be traversed somehow, the rocks of which, Mr. Hayward writes to me, 'are steep and much broken, so that it would take a good while to climb them.' Mr. Ball gives no reference to Herr Studer's description, nor does he mention the Simmeli Pass at all. Then Dorsaz, who was with Mr. Moore in 1863, as he was with me in 1874, spoke of but one pass, calling it the Simmeli, and this agreed with all I could learn from other sources both at Saas and Simplon. The Federal Map suggests, certainly, two practicable routes, but even the enlarged edition traces only the Simmeli accurately, and under that name.

Mr. Hayward, having considered Mr. Moore's letter, believes that the pass he took in 1873 was the Gamser, and on the whole his description is far more at one with that pass; the chief difference being that he 'descended from the col by a steep slope of rock and geröll to the main stream of the Gamser Glacier,' whereas in 1863 'that glacier extended to the crest of the ridge,' as I am informed by Mr. Moore, who thinks that the deplorable shrinking of the glacier in ten years may well account for the apparent discrepancy.

Upon these considerations I am convinced that between the Simmelihorn and the southern ridge of the Mattwaldthal there are 3 passes: (1) the Simmeli, 'immediately' beneath that Horn; (2) the Gamserjoch, SE. of the Magenhorn; and (3) the Rossboden Pass. I have recently referred to Studer's 'Ueber Eis und Schnee,' II. Abth. p. 246, and there I see not only that he mentions three passes, though without giving them names, but also that he describes a route taken so long ago as 1833 by a very inexperienced (were not most parties so forty years since?) and ill-equipped party. Their route to the rocks separating the Gamser and Rossboden Glaciers must have been much the same as mine, but from that point to Simplon it was very different—involving a great deal more ice and a great deal less rock. The highest point they attained he puts at 3,537 m. = 11,604 feet, which, as I previously said, appears to me considerably higher than my route led me.—T. BROOKSBANK.

COL DE CHEILLON.—During a residence of some weeks at Arolla I was led to believe that, in spite of the notice of the facility of passage which this col and the Glacier de Gétroz afford from the Combe d'Arolla to the Val de Bagnes, and the frequency with which the route is traversed, a wide-spread ignorance concerning it prevails. It appeared that unwary high-level travellers were deluded by their guides into the idea, when about to attack this pass, that a first-class expedition lay before them, to be an equal tax on their energies and their purse. This being the case, and the pass not being described in 'the Guide,' it may be as well to bring into prominence the real character of this, the easiest and shortest stage on the great highway of the Alps.

A short way above the inn at Mauvoisin the stream must be crossed by a bridge, and a path thence to the right, leading obliquely up the hill, followed till the rocky barrier which faces the ravine descending from the Gétroz Glacier is fairly rounded, when the path should be left to its somewhat dubious fate and the ascent continued at pleasure obliquely to the left up the grass slopes and past the chalets of Gétroz in the direction of the upper icefall and the northern end of the rocky ridge that coops up the névé of the Glacier de Gétroz. A scramble up shale lands the traveller on the top of this ridge at a point lying in a well-defined angle of the glacier opposite to Mt. Pleureur and commanding, at but a slight elevation above it, the upper basin of the glacier intervening between him and the Col de Cheillon. Hence is obtained a good view of the Mt. Combin range, and the eye is carried down the course of the Val de Bagnes till it rests on the distant Dent du Midi. This point may be reached from Mauvoisin in about $2\frac{1}{2}$ hours' walking exclusive of halts. A short hour over gently undulating névé, but slightly disturbed by crevasses, brings the traveller to the Col de Cheillon, which appears as a clearly marked depression in the ridge connecting Mt. Pleureur with Mt. Blanc de Cheillon, and immediately adjoining the mass of the latter; and another hour as easy, to the foot of the once 'ugly' looking Pas de Chèvres, which may be scrambled up in 5 minutes. (It is well to notice the position of the latter from the Col; it is in a depression lying immediately to the left of a rocky point, bearing a cross on its top, in the ridge running down from the Pigne d'Arolla): this surmounted, an easy descent, which quiet walking may protract to $1\frac{1}{2}$ hour, lies between him and the inn at Arolla. The whole route requires, I believe, hardly so much as 6 hours' actual walking at the ordinary guides' pace; while in the reverse direction, 2 hours' quiet walking suffice from Arolla to the Pas de Chèvres, and, as the descent to Mauvoisin from the glacier may be made to occupy a much shorter time than what has been given above, $5\frac{1}{2}$ hours would probably be ample for the whole distance. With respect to the easiness of the pass it is sufficient to say that it was crossed last summer by Messrs. Cawood, Colgrove, and myself without the assistance of guides or of previous tracks, and that though our passage of the Gétroz Glacier was made in a blinding storm of wind and snow no difficulty was experienced. The only point where any kind of difficulty is likely to be met with is in descending from the Col on to the Glacier de Cheillon, where in some seasons the crevasses might happen to be troublesome. Into one of these, indeed, last summer an experienced guide fell, and after being supported by the rope—an English young lady who was roped next to him having pluck and presence of mind enough to throw herself at once into a firm posture of resistance—was assisted out by his party. The local guide or porter (not one from Arolla) had just previously tried to dissuade the party from being roped, on the ground of there being no more crevasses.

ARTHUR CUST.

THE FISCHER FUND.—The following letter has been received:—

Meanwood, Leeds: January 30, 1875.

Dear Sir,—I have to acknowledge the receipt of the following subscriptions for Mrs. Fischer, which have been duly forwarded to her, in

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addition to those acknowledged in the 'Alpine Journal' of November 1874 :—

Frank Marshall, 20*l.*; Leslie Stephen, 3*l.*; F. A. Wallroth, 5*l.*; G. E. Foster, 5*l.*; E. Hulton, 5*l.*; Mrs. J. Mathias, 1*l.*; Miss M. C. Hulton, 1*l.*; H. Wagner, 2*l.*; J. E. Gorst, 2*l.* 2*s.*; Horace Walker, 5*l.*; J. P. Barlow, 5*l.*; J. W. Hartley and brother, 5*l.*; Christopher Thomas, 1*l.* 1*s.*

In addition to these sums it is a pleasure to add that I felt it right to return to the kind donors these additional subscriptions, as Mrs. Fischer is now amply provided for.

Arthur Cust, 1*l.* 1*s.*; Calwood, 1*l.* 1*s.*; Calgrove, 1*l.* 1*s.*; Miss T. Blackburne, 5*l.* 10*s.*; Seymour Hoare, 15*l.*

Yours very truly, T. S. KENNEDY.

CRISSOLO; VALLE DEL PO.—The sanctuary of San Chiaffredo, situated $\frac{1}{2}$ hr. from the village of Crissolo, near the sources of the Po, and at the foot of Monte Viso at a height of 4,670 feet, has been converted into a hotel, and will be opened this season under the management of M. Avaldo, an original member of the Italian Alpine Club. There is no reason why the Italian valleys of the Alps should not become as much frequented as the Swiss. The creation of good inns will probably induce many of our countrymen and countrywomen to make themselves familiar with scenery which has hitherto been too much neglected.

If the Lake of Lucern is preferable in July, there are many weeks in early summer and autumn when the climate and beauty of vegetation of the Italian side ought to give it the preference. No one will regret if the efforts now being made in North Italy to attract foreign visitors succeed in reducing the crowd on the N. side of the Alps, and in transferring some of the money which flows so freely into Swiss pockets into those of their equally deserving neighbours.

A CORRECTION.—Mons. M. Dechy wishes it to be stated, that in speaking of his ascent of Monte Rosa as a new expedition he did not mean to imply that the top had not previously been reached from the Monte Rosa Glacier. What he wished to point out was, that his ascent was the first which proved that the mountain could be easily reached from the Val di Lys.

THE ALPINE CLUB MAP OF SWITZERLAND.*

In the words of the wise king we read, 'He that ruleth his spirit is better than he that taketh a city.' In the same sense we must admit 'he that maketh the map is better than he that climbeth the peak.'

* *The Alpine Club Map of Switzerland*, with parts of the neighbouring countries. Edited by R. C. Nichols, F.S.A., F.R.G.S., under the superintendence of a Committee of the Alpine Club. Longmans & Co. and E. Stanford. Edinburgh: W. & A. K. Johnston.