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THE
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MACCORMICK'S SKETCHES IN KASHMIR AND THE
KARAKORAM-HIMALAYAS.

BY THE EDITOR.

ONE day, early in December 1891, my young friend Mr. J. H. Roudebush, who was then by way of learning to be a sculptor in the artistic purlieus of Chelsea, came to see me, bringing in his pocket a crumpled-up water-colour sketch or impression of a lot of geese. I was struck by the breadth of the treatment, and I remember saying that the man who could see such monumental magnificence in geese ought to be the kind of artist to paint mountains and render somewhat of their majesty. The very same evening, I believe, Roudebush and I pilgrimaged to Chelsea to find the author of the afore-said immortal work (which, I believe, was shortly afterwards committed to the flames by envious housemaids), and we ran him to earth after hunting through all the artists' resorts of that so well-governed district, the names and lay of which far be it from me to reveal to the *bourgeois* for any consideration.

The painter, who was none other than my now most excellent friend Arthur David MacCormick, was found in the immediate vicinity of a billiard-table and a pint of stout. Within five minutes (three of which were devoted to oaths of secrecy) we arranged the whole matter to our mutual satisfaction, and it was agreed that he should accompany my expedition to the Karakorams. Half an hour later the fact was known to every artist in Chelsea. I was not surprised to hear, a few days afterwards, that Roudebush's medical adviser considered it probable that the best way to save his life would be for him to take a long voyage and live for a year in the open-air; for Roudebush and MacCormick were inseparable.

There was no time to spare if the artistic equipment was to be ready by the date of sailing. We had to see one another frequently during the next few weeks, and by the time we left home we were already firm friends. It is impossible for me to write either impersonally or impartially about MacCormick, and I don't mean to attempt either the one or the other. Neither shall I confine myself to a mere *critique* or, if you please, puff and log-rolling gymnastic about and around his art, but I shall tell of the man too, and with such *Dichtung und Wahrheit* as may chance to suggest themselves to me. The mere statistical *Wahrheit* of the scaffolding of MacCormick's life may soon be got rid of. When he tells me that he was born in Coleraine of Londonderry I believe him, for his speech bewrayeth him; but when he says that it was in 1860, I murmur *Dichtung*. The yarn, too, about his having started life in business in Belfast has always struck me as mere autobiographic 'property,' for, of my own experience, I can witness that there is no business in him, and that he was incapable of tying up a bundle without me or a coolie to do it for him.

It stands in the nature and mere rudiments of the situation that MacCormick's future biographer will relate how he, in his early years, displayed such marked tendencies towards art that all his kinsfolk marvelled and were much scandalized and depressed (I apologise if I do them a wrong!), foreseeing but a gloomy outcome. MacCormick tells me that Mr. F. S. Herdman, the head of the firm with which he was working, recognising his natural tendencies towards art (or rather, as it seems probable to me, away from linen), caused him to go frequently to the Belfast Art School, and counted that unto him for office hours. At all events, between 1878 and 1882 MacCormick worked a good deal in the Belfast Art School, and, at the close of 1882, he won in public competition a National Scholarship under the Science and Art Department, which involved his coming to London and continuing his studies for two years in the National Art Training School at South Kensington.

In 1885 his student period ended, and he set up as a full-blown artist in Chelsea. Those were the halcyon days of the *Quartier Latin* of London, and high (or desperately low) old times the sucking artists, journalists, novelists, actors, and all the rest had there, MacCormick amongst them. You may read all about it in Morley Roberts's 'In Low Relief,' which was written on the spot by one of the gang. I have been told that Arthur Gaskell in that immortal work is MacCormick,

though I don't know whether he admits the truth of the statement. All this time, of course, MacCormick never saw a hill; in fact the Rock of Gibraltar was the first hill of any size that ever met his vision. In the meantime he was getting to know the sea, for he was a keen naval volunteer (naval volunteering was rampant amongst the Chelsea artists), and I have been told by a real naval officer that MacCormick is an exceptionally good A.B. seaman. The result was, that when we came to rope-bridges in Kashmir he, like my buccaneer friend Knight, rollicked across them, whilst I wished I was dead.

In London, from 1885 to 1891, he painted plenty of pictures in oil and water colours and exhibited them in various exhibitions; he sold some and painted over the others. He boiled the pot chiefly with 'black and white.' He worked for the then newly-founded 'English Illustrated Magazine,' and for other magazines and journals. I dare say he designed posters and labels for soap. He published some good original etchings (one was of unusual promise), and he was employed to produce etched plates after various pictures. He illustrated many books. Thus far, however, his chance had not come. His fellow-artists knew him to be a man of rare ability; and one of the most gifted of them, my sculptor friend Mr. T. Stirling Lee, described him to me as 'the most artistic artist in Chelsea.' He began two important pictures but could not afford to finish them—the 'Dead World' for one, a remarkable Wattsian conception, which I hope some day will get itself completed; but models cost money, and those were the days of small things and large disappointments. The ordinary buyer is not a man to recognise promise and enable it to bring forth fruit.

The actually best finished results of this period of MacCormick's struggling activity that I have seen are some big charcoal figure drawings—done in a large and most original manner—peasant figures, vague in a poetic gloom, melancholy perhaps, but grandly so and in the Millet manner, though in no sense imitated. All MacCormick's art is, in fact, suggestive—forms, light, colour; he prefers to suggest all these elements rather than to realize in detail the vision of his fancy. Fancy runs a gay or sad riot within him, but remains always on a high plane. Sometimes it is a humorous fancy, sometimes a tragic fancy, but fancy of one sort or another is always there. If he looks at landscape or at man something besides the thing seen arises in his mind, something delicate, almost evanescent, that cannot be cut

out hard and cold, but must be sympathetically caught from his suggestive treatment by a sensitive spectator of his work.

This is true of his mountain pictures. Few that I have seen are more true in general presentment of form and mass. He at no time seemed to suffer from the normal tendency of artists to steepen and narrow their peaks. Truth to tell, the peaks of Hunza stand in no need of steepening or narrowing, but he would not have been the man to change them. To him, however, from the moment he was brought in contact with them, mountains, like men, were interesting, not as elemental lumps of this or that outline and structure, but as great canvases on which the sun painted and about which clouds rolled and shadows fell. No great artist will ever draw mountains as things to be climbed—that is not a possible artistic point of view of them.

Dort wo Du nicht bist, dort ist das Glück is the mountaineer's reflexion when he beholds an attractive peak; and he desires to be at and up it and examines it as a climbable thing, though doubtless it was its sheer beauty that attracted him, and that beauty was in the view of it, not in the peak itself. But the same beauty will move an artist, not to approach the thing, but to render it in paint; his mind will concentrate itself upon the interpretation of the beauty, not upon the attempt to appropriate it by climbing, and so, as it were, taking possession of the peak and its beauty. The emotions, therefore, of an artist and a climber in the presence of a peak being different, and art being the rendering, not of the facts of nature, but of the emotions which the sight of nature raises in a man, there can be no such thing as the artistic rendering of a peak which shall embody the pure and simple climber's view of it.

For this reason mountaineers have largely themselves to thank for the relatively slow advance of mountain landscape art. They have called for 'the peaks as we know them,' the peaks with the aspect upon them that makes a man discontented to lie and gaze at them and eager to be climbing them. But an artist can only paint a thing when and how it looks pleasant to be gazed at. If the peak looks perfect he wants to paint it, not to approach it; he wants to render the joy of just standing there and gazing at it, and you must not ask him for more. If you insist on having more you insist on bad art, and good artists will not make that intentionally, not even for money.

I was careful, therefore, to impress on MacCormick from

the start that I wanted no topographical accuracy in his water-colours—only the rendering of the impression a scene made upon him in light and colour, a transfer of his vision of it to paper, so that, if possible, I might learn better how to see the hills by finding out how he saw them. As a matter of fact, his eye was so true to form that truthfulness of form was a part of his normal vision, and whoever looks at his water-colours may be assured that they are accurate in outline and mass to a remarkable degree.

His excellence and rapidity as a draughtsman are points which it is only fair that I should emphasise, for I reaped from them the most valuable fruit. On the journey, besides making some 220 water-colours, he filled five books with pencil sketches, chiefly of figures, and many of these are masterly. We came in contact with so many different tribes and races of men, Arabs, Panjabis, Hazaras, Pathans, Gurkhas, Kashmiris, Guraisis, Shins, Hunzakuts, Nagyri, Baltis, and Ladakhis, that it was in a high degree interesting to be accompanied by an artist capable of hitting them off with so unerring a hand, and of catching always whatever was most typical in their appearance. Moreover, MacCormick's visual memory was extraordinary, and, since we have been home, I have often amused myself by recalling to his memory this and the other man or incident, which he has straightway sketched on the first odd scrap of paper, thus as it were raising the blind from a window opening on the past. These qualities it was impossible for me to know that he possessed before we started, but the reader will perceive of what extraordinary value they must be for a travelling artist, and especially when the time comes for him to illustrate a book of travel.

My intention in sitting down to write this article was to confine it mainly to the set of water-colour sketches made on our journey, and which, still united in MacCormick's possession, will be exhibited in New Bond Street towards the end of this February, and presumably dispersed. I wished, while they are still together, to regard them as a whole, and for the remainder of the small space at my disposal I shall endeavour not to wander from them. It was our good fortune that our journey took us through scenery of all kinds. Ocean, straits, desert, old cities, luxuriant cultivated country, lakes, rivers, ruined temples, valleys small and great, glaciers, green hills, and the biggest snow mountains in the world—there was variety enough of subject, as of season, and MacCormick availed

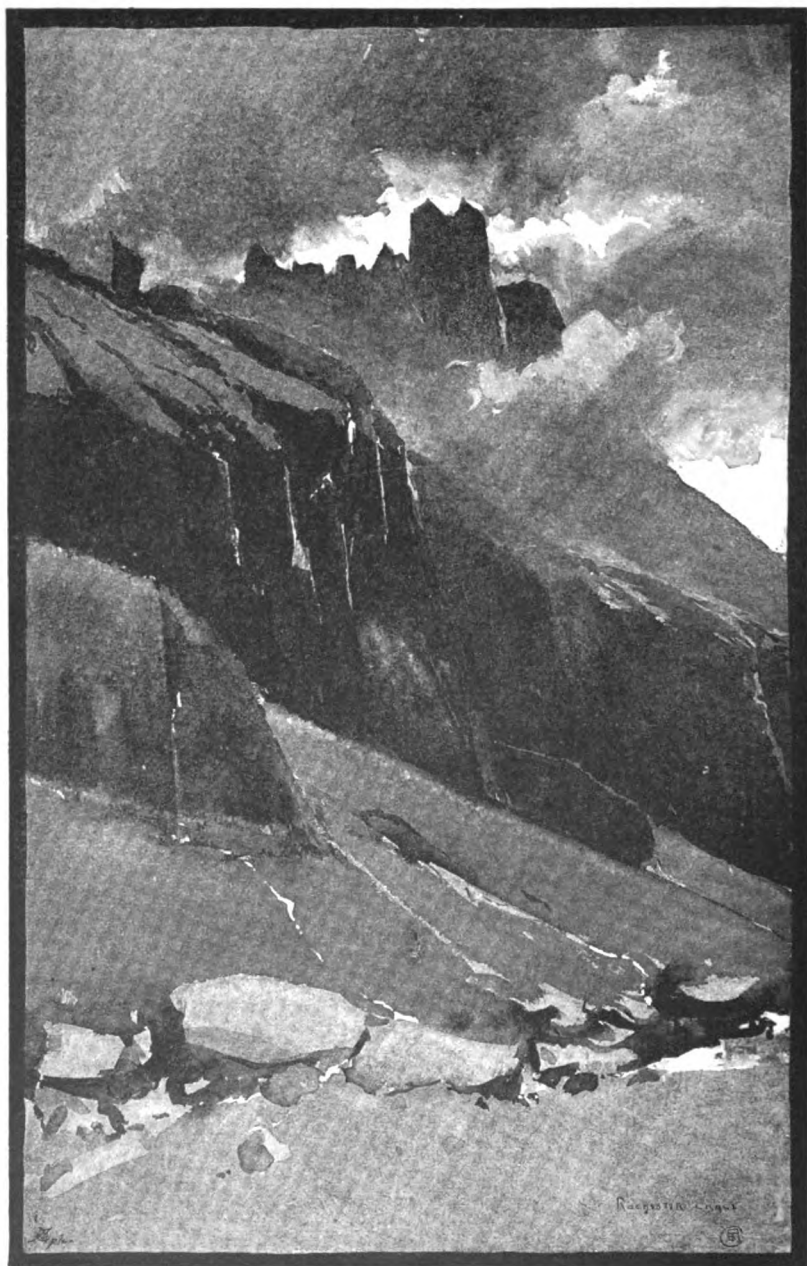
himself of the wide choice. He painted almost daily. Such constancy of application brought its own particular reward, and I remarked a steady development in technical power, and the certainty wherewith effects were attained.

Sunset was the time of day that we all loved best. The glare and fury of mid-day light rendered sketching impossible, where there was no shade, and the green Willesden tents could not be painted in, for the green upset the whole gamut of colour. Under any circumstances, however, evening is the pictorial time in the Karakoram, and the exigencies of marching made it the only possible time for artistic work.

The Gulf of Suez is famous for its sunsets, and one of the finest was caught by MacCormick with a truthfulness of effect, attested by everyone on the ship. It was at Abbottabad that we first saw big mountains, and I watched with suppressed excitement what MacCormick would make of them. He was deeply impressed by the barren gorge we drove through on our way up to the place, and thereupon planned some big work, a 'Valley Desolate,' I believe, which was to be a pendant to the 'Dead World'; but he soon tackled the actual views and painted one or two fragments of wide panorama which gave me no little satisfaction. The rich colouring fastened upon him, and at first his work was too heavy. It was only by degrees that, as he became better acquainted with them, his peaks began to soar aloft.

When we first entered the valley of Kashmir the air was heavy with mists and rain. The delicacy which he afterwards manifested in his return journey sketches did not appear in the earlier series—neither the delicacy, nor the mystery, nor the flood of all-enveloping light. The atmosphere of England still hung about him. This atmosphere and sky of England accompanied him for a while on our upward road; his mountains became more dignified, but they were dark in colour. When we crossed the main Himalaya chain by the Burzil Pass we had our first really tough experience. We were shut up for days in a bad snow-storm; we had a big caravan of unwilling coolies to convoy; troubles came thick upon us; we could not fail to know that we had entered on a new life. And here it was, as it seems to me now, turning over the folios of sketches arranged in their order, that MacCormick first caught on. He worked on the march with the rest of us. He caught the spirit of the expedition and his art took fire. We came

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ROCHESTER CRAGS, BALTORO VALLEY.

By A. D. MACCORMICK.

(An illustration for Conway's 'Climbing in the Karakoram,' contributed by Mr. Fisher Unwin.)

down to the Astor Valley and there he painted Nanga Parbat. He did not succeed at the first attempt. He made seven failures in one day, but he knew what it was he wanted to get at, and one afternoon he succeeded. His 'Nanga Parbat from Bunji' is a rendering of mountain mass which can be accepted without qualification. It gives the air and majesty of the giant with all his brave splendours spread around him.

We went through Gilgit and spent a month in the Bagrot Valley, which is surrounded by superb peaks and filled with great glaciers. Here MacCormick had again a transition period to pass through. The great peaks were now quite near us, and we were even encamped upon their slopes. He made a climb or two, and began to see what things were like in detail. He had to feel his way once more, and his choice of subject shows the tentative nature of his efforts; but at last he caught Rakipushi and then, one evening, he came into camp with the white and grey vision of a snowy dome high up amongst clouds. He had seized the delicacy of the snow shadows and the grace of the folding surfaces, and the type of picture then evolved by him was repeated more than once and always with success—notably, for instance, in his 'First Glimpse of K. 2.'

The extraordinary picturesqueness of the villages and people of the Hunza-Nagyr valley kept his eyes for a time from the heights, till Bubuli Mutin, the Hunza Feathers, and other rock needles of that strange region imposed themselves upon him. Thus far, though at Bagrot he was in close contact with glaciers, and for days together upon them, I find that he hardly attempted to paint them. But when we left Nagyr and entered the fastnesses of the ice-land, there was no longer any alternative; and so, after a few days of tentative effort, the ice-rivers were fairly attacked, and with what admirable success the moonlight view of the Shallihuru ice-fall may be quoted as witness. From this time forward peaks, séracs, broad nevé-areas, and all the phenomena of the higher regions, appear in rapid succession amongst the sketches, made from day to day during the passage of the Hispar Pass and the month spent on the Baltoro glacier. The best set were those made at Junction and Footstool camps, and amongst them I may specially notice a group of crags at the foot of Gusherbrum, momentarily isolated by a drift of low-lying mists.

Our highest camp at the immediate foot of Pioneer Peak was just 20,000 feet above sea-level. To this point

MacCormick came, and here he spent two nights and the whole day between them, during which we made our ascent. He suffered tortures of tooth-ache and sleeplessness, and all the other miseries that await those who spend many consecutive hours at high altitudes. The sun roasted and scorched him. Nevertheless he painted one view from the tent door, looking over the snow plateau, and this sketch, which is remarkable for its admirable rendering of the scene, is unique as having been painted at a considerably higher altitude than any other picture whatever. It beats the record for altitude.

The views up the Indus Valley on the road to Leh are seldom picturesque, but here MacCormick devoted his attention in several instances to figure subjects, one of which, at Khurmang, is a charming study of tone. Leh Bazaar was a subject perfectly suited to his style, and he made several sketches of the animated crowd that peopled it daily during our stay. I think, about this time, we were all getting a little tired of the bare grandeur of the desert Indus Valley and longed to behold fertility once more. As we approached the Zoji Pass we came amongst occasional patches of autumnal foliage of astounding brilliancy beside the sapphire blue Dras River. But we did not get our fill of satisfaction and contrast till we were over the pass and again in the plain of Kashmir. MacCormick now entered, with full knowledge of his materials and experience of the light and air of Asia, upon a series of views of the enchanting vale; these, for delicacy of touch, for beauty of colour, for brightness and, therewith, tenderness of light, surpass anything he previously accomplished. He was so happy in his surroundings, so perfectly suited by the endless variety of subjects, that he begged me to leave him behind for a month in Kashmir to paint his fill and rejoin me at Bombay.

I left him, but he did not paint, and could only rejoin me in London. Enteric fever laid him low and put his brushes and paints away. The second Kashmir series is therefore brief, but it includes the best, truest, and most artistic renderings of the enchanting scenery of the magic vale that, to my knowledge, have ever yet been produced.

I said that I had no intention of writing impartially about MacCormick, and I have not written impartially, but I hope with somewhat of the enthusiasm I feel for him. I should not, however, feel justified in so doing if I had any doubt whatever about my own final estimate of him as

an artist. I believe not merely that he may become, if he pleases, a mountain painter of the highest rank, but that (in the normal progress and average fortune of working-man) he may come, and ought to come, to very much more. I perceive in him, quite clearly and unmistakably, the highest artistic potentialities. He possesses power of hand, power of eye, exuberance of fancy, high qualities of imagination. If these are allowed to find, from year to year, their natural expression and in it their increase, I place no limit to the future of an artist with whom, to have travelled for a year and to have worked for two, will ever remain amongst the greatest and most memorable pleasures of a lifetime.

THE ASCENT OF THE DENT DE REQUIN.

BY NORMAN COLLIE.

(Read before the Alpine Club, December 18, 1893.)

LYING hid behind the outer ridge of the Chamonix Aiguilles, and unknown to the casual tourist, there is a peak whose granite summit rises, in the most abrupt way, almost straight from the séracs of the Glacier du Géant.

Owing to its secluded position this aiguille (3,419 m.) has never been properly baptised, though it is a most prominent object during the descent from the Col du Géant to the Mer de Glace. Forbes in his 'Travels through the Alps' mentions it more than once; at p. 115 he says, writing of the Aiguilles of the Blaitière or Plan, 'There is a third appendage on its southern side to which I shall elsewhere advert;' and again at p. 242 we find, 'About half-way from La Noire to the Tacul there is a rocky promontory on the right bank of the glacier, marked K in the map, which was one of my points of observation, and opposite to it is an offset from the range of the Aiguilles of Chamonix, on the left, which forms a series of very fantastical summits, one of which might deserve a peculiar name and is figured in the map as the Aiguille de Blaitière derrière.' Since Forbes wrote this fifty years have passed, but his attempt at baptism has not met with the success it deserved. Even during the present year I have heard this mountain often referred to as 'the peak round the corner,' a 'peculiar' name certainly, but an attempt at nomenclature which I think proves without a doubt the vulgar and unromantic attitude of the modern tourist—I was almost going to say mountaineer—towards the sacred fastnesses of the Alps.

During the last few months, however, a greater amount of interest has been shown about the naming of this aiguille. It was quite evident to me from the number of names suggested that the mountain must be a most important one, and I had almost made up my mind to give it a name myself, 'Mont Noir,' so that it might not be confused with the only other hill in the neighbourhood—I mean Mont Blanc—when a bold effort was made and the peak actually got into print for the second time in its history, this time as the Dent de Requin.

But I am sorry to say that there are a few unregenerate persons who fail to appreciate this picturesque name. They must be Philistines! These unregenerate ones urge that there are no dents in the Mont Blanc chain; they only grow aiguilles in that district. Again, they say that the mountain is not more like a shark's tooth than any other rock point, and that the peak has been already named by Forbes. Surely these things are mere details when compared with the exquisite beauty of the name Dent de Requin! Moreover it will in future ages give rise to all sorts of ingenious hypotheses, and the Alpine antiquarian will run riot in his attempts to explain away the interesting and perplexing appellation. And when the peak is named Dent de Requin of course the glacier by its side can be called the Glacier de Requin, which is most appropriate; and I have no doubt that in the distant future this 'fictitious imputation' will point a moral and adorn a tale, and another paper will be read before another Alpine Club proving that the ancient mountaineers used to angle for sharks in the glacier pools at the foot of the séracs of the Géant. Personally I myself cannot rise to these great things; I should have been quite content to take the name Forbes gave it fifty years ago, and call it the Aiguille du Plan derrière; but I am afraid that is impossible. I should be called irrational, a depraved person, and a Philistine as well, which would be truly dreadful. Philistinism is a crime I should not like to be thought guilty of myself; yet I quite see that many others who hold different opinions from myself on matters Alpine are without doubt worshippers of strange gods, and I firmly believe that it is to them alone that we owe that sad deterioration which is now so marked in many Alpine matters. This retrogression is, when we come to enquire into it, not altogether a thing of the present day.

We have all heard many times how the mountains are no longer what they were; so few things are nowadays. As

far back in Alpine history as the year 1868 we find that this deterioration had begun to show itself, and from the 'Alpine Journal' of that year* we learn that the Alps must have been in a woful plight. I will content myself with only a few quotations. Here is one: 'So far as the Alps are concerned, we can now, I fear, expect nothing free altogether from the taint of staleness. For us the familiar hunting grounds exist no longer as they once existed.' Again, 'those waters of oblivion which have overwhelmed the Jungfraus and Finsteraarhorns of our youth;' and, 'It only remains for us to dally awhile with the best recollections of now degraded mountains.'

This, I am sorry to say, was written twenty-five years ago. Since then the mountaineer too has evidently become tainted by the process of degradation. His descriptive powers never rise above such names as Mount Augustus Edward, or K², or 'the peak round the corner.' The heroic age is over; we all know that there were wonderful giants of old; and did not Scheuchzer write of dragons and the benzoar stone? Now there are no more giants, and the last dragon has been caught in the act of descending from his cavern amongst the hills, and made famous as the Wilderwurm Gletscher. And when the ascent of a now degraded mountain has to be described the modern mountaineer no longer may use that proper amount of imagination which is absolutely necessary for producing a thrilling narrative, but must write in a chastened and sober manner.

I have, therefore, thought it politic to adapt myself to the times, and forego the pleasure I should otherwise have had in recounting our hair-breadth escapes and the thousand towering, dark, savage, and lightning-riven peaks amongst which we wandered, and affect the new style—chatter about jam tins and sardine paste, make fun of the bergschrunds and séracs, discuss such subjects as the relative merits of drinking much water for producing a sense of repletion when very hungry, or of manufacturing a most nutritive soup, quite enough for a whole party, from a small cylinder one inch long by half an inch in diameter (kept in the waistcoat pocket), and which in some miraculous way is supposed to contain the quintessence of a whole pound of beef steak. This idea of impossible concentration of food seems to be a very prevalent one. I have often met people who are quite convinced that a kola biscuit or a few meat lozenges are

* Vol. iv. p. 185.

enough nourishment for a hard day's work, which is almost the same thing as suggesting that an ordinary locomotive could run at full speed by means of a small spirit lamp. But perhaps it would be better not to meddle with these topics; the mountains, as we already know, have lost much of their mystery, and if we destroy the unknown and inaccessibly obscure beauties of the meat lozenge as well the mountaineer will indeed be desolate.

I am afraid that at this rate I shall never even get to the bottom of our aiguille, so I must now begin in the orthodox fashion.

In the latter part of July this year our party, which consisted of A. F. Mummery, Cecil Slingsby, G. Hastings, and myself, arrived one evening at the Montenvers, having travelled straight out from England. We found the weather excellent, and as it seemed likely to continue in that state we made up our minds to start the next day for 'the peak round the corner.' This great display of energy was chiefly due to Mummery, who was recognised by the party as 'guide chef,' and whilst acting in this capacity he always considered it necessary for 'les messieurs' to be climbing something. We all had our respective positions in the party. Hastings was unanimously deputed to do as much of the provision-carrying as we could possibly persuade him to do; therefore he usually carried *all* our edibles. But we soon found this was only fair, for Hastings has a large appetite; and, as his shoulders are of the same proportions, he also had to back Mummery up when a more difficult piece of climbing than usual was necessary. Slingsby was found to possess, amongst other accomplishments, a marvellous knowledge of glaciers. He was most unerring in his skill when the séracs and crevasses became more confused and difficult than usual. I was more or less chief passenger, and I can safely recommend my guides as very excellent fellows, most willing and obliging, and quite able to take an adventurous monsieur up a Chamonix aiguille. Only one complaint have I to make: they never could be persuaded to carry a lantern or candle with them. We were often so well pleased with our mountains that we were unable to tear ourselves away till after the sun had set. Twice at least a lantern was of considerable use; and now comes the grievance: I had to carry that lantern, and also burden myself during the entire expedition with a couple of candles as well!

As our peak was some hours from the Montenvers and we

all had sleeping bags, we concluded the mountain would be much more comfortably attacked on the morrow from a *gîte* than from the Montenvers Hotel. We therefore hired a porter, packed as much as we could on his back, and started for the rocks which lie directly under the aiguille and just above the bottom of the séracs of the Géant.

We soon found an excellent camping ground. There were several overhanging rocks under which we could retire if the weather turned bad, and also plenty of grass and level places, evidently especially made to accommodate sleeping bags. The weather was perfect, so we were spared the trouble of constructing an amateur *gîte*. The porter was relieved of his burden and sent back to Montenvers, and we prepared to make ourselves comfortable. I am sorry that I have forgotten what provisions we had with us, for I have no doubt a minute description of what we all ate would be both interesting and instructive. After our supper, as there was still plenty of daylight, we all solemnly got into our sleeping bags, and sat with our backs against a large rock, discussing the most feasible method of attacking our aiguille next day. The face directly above us looked very steep and at the bottom peculiarly slabby. But Mummery, after due deliberation, said it would probably go. This was questioned by the more cautious members of the party, who were not so accustomed as he to thousands of feet of granite aiguille set at a terribly steep angle. However we were all agreed about one point, namely, that the rock tooth which was the summit would probably prove the most difficult piece of climbing; and profiting by the experiences of others who had attempted to climb this aiguille and found the north-western arête not 'all joy,' we set ourselves the problem, How could the south-eastern arête be reached? Clearly the face of the great tooth at the summit would have to be traversed if we ascended from the western side to the bottom of the final tower. As far as we could see this could only be done by reaching a snow patch some considerable distance down on the face, from there traversing across what seemed perpendicular crag for some distance till the bottom of two extremely steep gullies was reached, and then by their help ascending the great buttresses of granite to the eastern arête. After that, if the ridge should prove so disagreeable as to stop us by any of those places which are usually called impossible, well, it would be the 'cussedness' of the aiguille and not our fault; we should have done our best.

The problem, therefore, resolved itself into this: First, how

were we to get to the snow patch, and having got there could we get across to the bottom of the gullies which led on to the north-eastern arête? Part of the problem was soon very satisfactorily answered. Just as we were taking our last look at the peak, preparatory to going to bed, a thin-drawn line of mist was observed some distance underneath the great summit tooth. It floated by the snow patch and then part of it disappeared behind a tooth of rock which was quite invisible from below, unless thrown into relief in this manner. The face, therefore, was much more broken than we were aware of, and also just in the place we had thought to be most difficult. The traverse from the snow patch to the bottom of the gullies was almost a certainty. With that we retired to our respective sleeping places for the night; Mummery and Hastings got into their bags where they were and slept on the grass in the open, and I believe Slingsby did the same. I had found for myself a most comfortable spot underneath a rock, where as I lay in my sleeping bag I could see far away over the snows the Aiguille de Triolet, whilst nearer on the right rose the crest of the Tacul. The sun was just setting, lighting up the tops of the jagged aiguilles with a rich golden glow. Lower down the shadows of approaching night were already casting a deep velvet curtain over the ghostly cliffs. And the whole scene, so soundless, so changeless, so full of mystery, seemed as if the pulse of time had stopped in the great silence. Black peaks, arrow-headed, rose opposite, seamed here and there with faint lines of ice and snow. A solitary snowy cloud, like an avalanche of frozen light, blazed in the far-off blue. One by one the soft wreaths of the evening clouds faded into the night air, leaving cold grey ridges clear cut against the amber sky—ridges fantastic in their forms, full of writhing, sinewy lines and fretted pinnacles; here and there narrow curved flakes, overhanging and smooth, carved by the lightning and the frost, and as the faded evening died along the distance of approaching night, when

‘ Day no longer breathes, but through the hours
The ghost of chaos haunts the ruined sky ’——

But really this will never do! I had almost forgotten I might only dally for a short space with my recollections of the now degraded mountains.

Of course my real recollection was the traditional stone in my *gîte*. I thought I had removed them all, but there was

just one which had shyly hid its head in the moss and grass during the day and blushed there unseen ;

‘ And there it might have laid forlorn
From morn till eve, from eve to morn,
But that, by some wild impulse led,’

it insisted on growing, and during the silent watches of the night it waxed so fat and large that I was forced to light a lantern and investigate. I found it was a piece of the degraded mountain itself, firmly attached and quite immovable, and would only yield to the sweet persuasion of the ice axe.

Early next morning we started in complete silence at 3.10. Our way led for some distance along the top of a moraine towards some rocks. Just before reaching these we turned off to the right on to the glacier, and soon began to ascend the steep tongue of the glacier. Before reaching the séracs, which could be seen above, we again bore slightly to the right, going straight towards the bottom of the peak.

This we afterwards found was a mistake, as we soon saw that a very ugly corner close under the final buttress had to be turned in order to get on to the glacier beyond. The rocks themselves were not of the slightest use, being huge perpendicular slabs. The whole glacier coming round the corner had been broken in the most marvellous way ; deep, mysterious caverns yawned on one side, whilst curved and towering castles of blue ice rose on the other. We were at last extricated from our difficulties by Mummery, who climbed a perpendicular wall of ice about fifteen feet high, and we were soon on a comparatively easy glacier leading up to the Aiguille du Plan.

By this time the sun had risen, and the great peaks and domes of solitary snow had one by one blazed with the rose-light of a brilliant dawn. The untrodden snow fields and the white, winding glaciers below were darkened here and there by the vast shadows of the mountains ; and the beauty and abstract exhilaration of an Alpine sunrise made us all feel that—a second breakfast was necessary. After we had refreshed ourselves we proceeded up the glacier, which at this point is easy. We kept always near one peak on the right-hand side, the only place where any continuous cutting was needed being a slope of about 150 to 200 ft. of steep ice covered with a thin coating of snow, which in the morning, being hard frozen, was a safe route, but later in the day we decided would not be quite so desirable. This took us over

the first ice-fall, and although the glacier is very crevassed above this point we found no difficulty in threading our way through the broken séracs till we got on to the rocks, probably about 1,500 ft. below the summit.

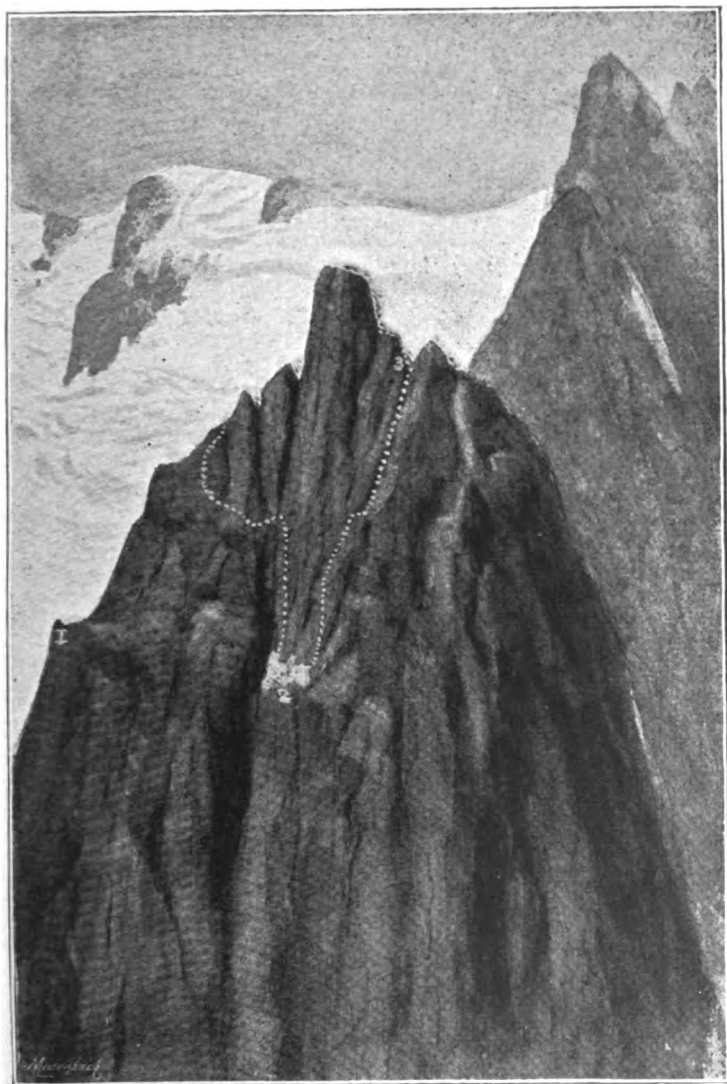
Here the climbing was more interesting than difficult, and we being in extremely bad condition scrambled slowly up the rocks. After an hour's climb, at 7.10 some of the party were a little exhausted, so we again had breakfast. Here we left some of our provisions, and also had a conversation about a peculiar rock on the southern ridge exactly like a cocked hat. We had already seen this rock from below the evening before, and it had been suggested that perhaps this was the best point to start from in order to get at the snow patch on the face; but, as the rocks above seemed very tempting, we thought it was perhaps best to go straight for the summit, and if we found it necessary descend afterwards to the stone hat.

During this part of the climb many traces were found of former meals, and from the variety of labels on the manifold tins—'potted snipe,' 'pâté de foie gras,' &c.—the members of the party must have fared sumptuously. Slingsby, whose mind is above such trivial details, assures me that the *Ranunculus glacialis* can here be found in great abundance by any one who wishes to go for it.

As we toiled upwards in a leisurely way the sun became very powerful, and at a small chimney up which we had to squeeze Mummery discarded his coat; a little further on I left my ice axe. In fact, as we went we distributed our baggage all over the hill in various places, and finally arrived on the top with only one rucksack, one axe, and one rope. But I am anticipating.

At 8.50 we reached the ridge about 200 ft. below the summit, and I have never seen rocks which looked more hopelessly impossible than those which form the top of this aiguille. The summit is a huge tower which falls precipitously in front and behind, and is actually undercut as well on both sides. Between us and the tower rose a smaller one with clean-cut sides, and the savageness of those slabs of rock can only be appreciated when seen, they cannot be described. About half-way up this gendarme can be seen, fluttering in the wind, a cord left there by some one during a former attempt.

We at once abandoned any idea of climbing straight up to the summit, and all agreed that it was absolutely necessary to stoop to conquer, and descend to the snow patch which



DENT DE REQUIN.
1. THE COCKED HAT.
2. THE SNOW PATCH.
3. THE KNIFE-EDGE ARÊTE.

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lay 400 to 500 feet below. In order to do this we went down the hat ridge for about 150 feet, then traversed to the left slightly downwards till we got into the gully which led up to the notch between the gendarme and the final tower. Here 200 feet of light rope was found to be very useful. It was securely tied round a rock, and one by one we solemnly descended the slabs of rock about 180 feet, and arrived on the snow patch. In order that the end of the rope might be found on our return where it was left we tied it to a block of stone. After all the perils of the gymnastics of the last hour it of course was necessary to have another breakfast. Hastings, who took the times, has modestly owned to only one breakfast and one 'feed;' all the others were called 'rests.' But I think I am not overstepping the bounds of prudence when I state that we had not far from a dozen so-called 'rests.'

Above us were two open chimneys which led up on to the north-eastern arête; the one on the left seemed moderately easy for some distance, so we decided to try it first. After ascending for about 100 feet we traversed into the right-hand one, and were nearly stopped by a very awkward place which was conquered by Mummery only after he had been helped up on Hastings's shoulders. From this point up to the V-shaped notch on the arête the gully was very perpendicular, but there were plenty of those obliging cracks and crevices which are always found on the granite of a Chamouix aiguille. At last we arrived at the arête, only to see between us and the summit a veritable knife edge rising at an angle of about 40 degrees for about 20 feet, and then ending in 15 feet of vertical rock. The situation was decidedly unpleasant. Here we were within 100 feet or less of the top, and the difficulties were increasing. Again Mummery was told that we all depended on him, and that, as he had taken us thus far, the least he could do was to finish the climb as befitted a 'guide chef,' and land the party on the as yet untrodden summit. The side of the peak which faced the Aiguille du Plan was quite one of the sheerest precipices I have ever seen, and its steepness is well illustrated in any photograph of the aiguille taken from the Moine.

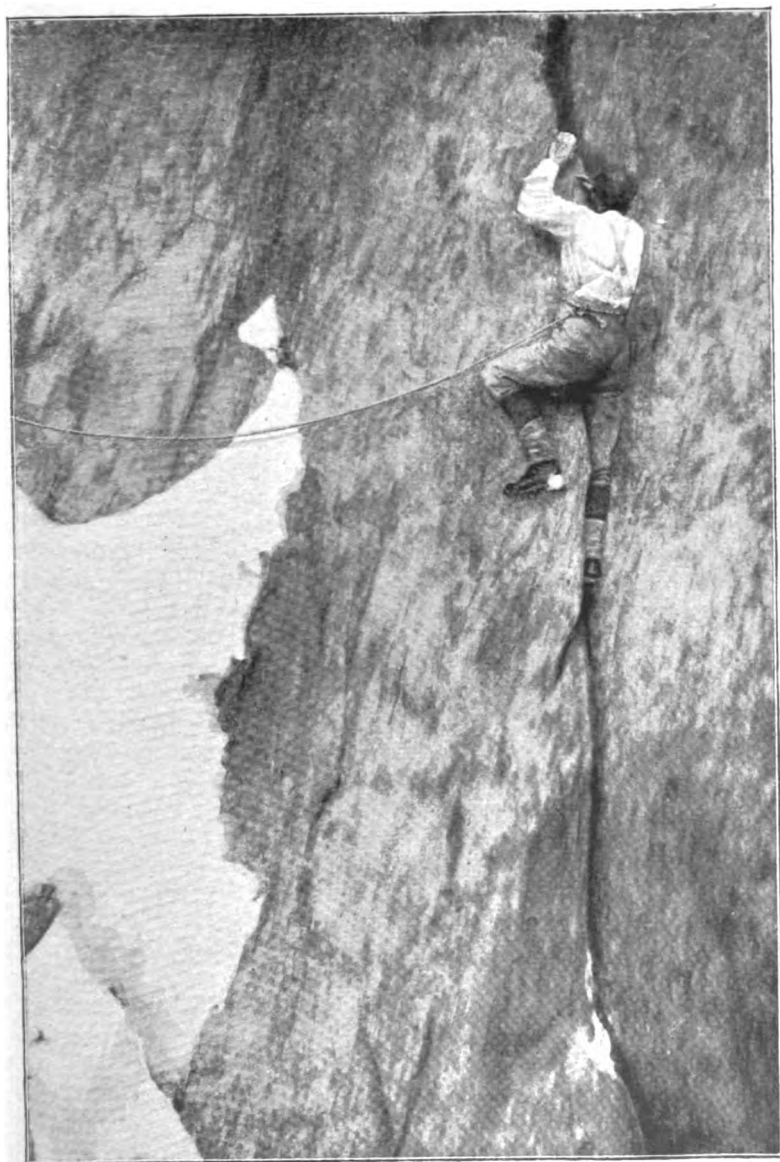
After Mummery had climbed up the knife edge as far as he could the only way to proceed was to traverse out to the right on the perpendicular wall of rock, which literally overhung the snows several thousand feet below, and then climb straight up on to the arête above. This, I think, is

certainly the worst piece of the whole climb. But Mummery did not seem to find any great difficulty; slowly he crept out on to the face, using what little foot and hand hold he could find, and then began to climb straight up, never stopping till he was firmly planted above, and the rest of the party were then carefully brought up.

Although the actual top looks very formidable there is fortunately a most comfortable gully, facing the Grépon, which we found full of snow, and just before we reached the summit a narrow flake of rock, forming a kind of 'letter box,' had to be swarmed up, but at 1.10 we emerged on the top and at once sat down to another breakfast—I mean luncheon—after which we built a small stone-man. One hears a great deal about the wild delight felt by the true mountaineer who has, after many difficulties, conquered a virgin peak. Sometimes the varied emotions are allowed a safety valve in shouting, or trying to distinguish all the other mountains in the Alps. The superb magnificence of the view from that particular peak, on that particular day, is also insisted on. We, however, kept our feelings sternly suppressed by means of corned beef, and as our peak was not quite as high as Mont Blanc, and we were just a trifle exhausted, no exuberantly violent manifestations of joy were thought necessary. Perhaps also they would not have been quite safe, for the top of the aiguille consists of a great loose stone table laid flat on the summit. The view from the top is without doubt very fine, standing as this aiguille does in the very centre of the chain of Mont Blanc, and also being at the same time not too high, all the surrounding mountains are seen to the best advantage.

The rock faces of the Plan, Blaitière, and Grépon are superb; whilst on the other side the immense masses of glacier rolling down from the Aiguille du Midi and the Col du Géant, and backed by the marvellous flying buttresses of Mont Blanc du Tacul and Mont Maudit, make a picture not easily forgotten.

But at 2.20 we had to make up our minds to move. As Mummery had had all the excitement of going up first on the rope, we unanimously agreed that it was now his turn to go last. This arrangement worked beautifully till we came to a peculiarly slabby piece in the gully which led from the notch in the arête down to the snow patch, and illustrated, according to Mummery, the great advantage gained by hitching a rope over a stone, in order to give the last man extra help. The hitch worked quite nicely till we tried to



MR. MUMMERY ON THE AIGUILLE DE GRÉPON.
(From a photograph by Miss Bristow.)

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unhitch it, and then, just to show how absolutely it might be depended on, it jammed tight and refused to move. The order of things was then reversed; Mummery had to climb up again, in order that he might let the rope itself down safely, and then he followed.

We traversed the snow patch, clambered up the slabs above it by means of the hanging rope, and at 5 reached the south-western arête again. Here we indulged in what Hastings in his notes is pleased to call a 'feed;' but, as it was getting late, we did not stop long and hurried down to the glacier. As we were crossing the bergschrund a rather appalling collapse of part of the bridge connecting the rocks with the glacier took place. It fortunately was not just where we had to cross; but the immense mass, which thundered down into the dark depths below, made the whole fabric shake, and was sufficiently startling to make us feel relieved when we were once again on the firm ice.

The sun had by this time set, and it was rapidly becoming dark. We had yet to get through the crevassed glacier below. Slingsby and Mummery were both decided in the opinion that the route we followed in the morning was not to be thought of; the long ice slope with soft snow would be doubly dangerous in the darkness. A new route was necessary; so Slingsby was sent to the front; and then a wonderful thing happened. First he took us straight out into the middle of the glacier, and then slowly he led us down, never once making a mistake, along ice ridges, down seemingly black abysses, round curious corners, across yawning crevasses, which, owing to the lateness of the hour, yawned more than usual, but always downwards, till finally he plunged straight over what looked like an ice wall, with the glacier apparently gleaming in the uncertain moonlight full 500 ft. lower down. Slowly he cut steps, zigzagging first one way, then another, helped here by cracks running through the ice wall, there by incipient couloirs, till at last the small crevasse at the bottom was passed and we were safe on the easy glacier beyond. How he managed to find his way in the darkness is a mystery, but what is more wonderful is that some time afterwards, when we again descended the glacier (this time in daylight) on our return from the Aiguille du Plan, we found that our midnight route was the safest and best, through one of the most complicated and steepest parts of the glacier.

But we were not yet out of the wood; we had yet to get down to the *gîte* from the glacier we were on. Here also we

had to find a new route. In the darkness the corner under the rocks at the bottom of the peak would be quite impossible. We therefore descended the glacier for some distance further than would be necessary if we were returning by the route we had come in the morning. We then turned to the left, but after getting fairly into the séracs we were unable to find a way through them on to the tongue of the glacier leading down to the moraine, near which our camp was pitched. At last the top of the ice slope was found. A short time before this we had all screwed the Mummery spikes into our boots. Without them it would have been almost impossible to go down this slope in the darkness without cutting steps, and we should have had to sit there till daylight came; as it was most of the party just walked down the ice set at an angle of certainly 30 degrees. I was not so used to it, and was only too glad to find a channel cut by a small stream, about six inches deep; down this I partly walked, partly slithered. The climb was over; only a walk of about a quarter of an hour remained. At 11.45 we returned to our *gîte*, having been out over 20 hours.

Once more we collected over Mummery's patent soup boiler, and the one thing which seemed to please Slingsby was that we had returned safe and sound to the *gîte* before 12 o'clock, and therefore had not been benighted. But Mummery and Hastings were not satisfied with their expedition—it wasn't long enough—so at 12.25 they started for the Montenvers, where they arrived at 4.30, after an exciting time amongst the crevasses of the Mer de Glace. Still being thirsty for more climbing, they ended the expedition by making the difficult and dangerous ascent of the Smoking-Room Window. Slingsby and I were quite contented to remain at the *gîte*. I put my boots under my head as a pillow and slept till the morning sun was shining on to me and Slingsby was saying, 'Let us have just one more breakfast.'

THE ZERVREILERHORN.

By W. A. B. COOLIDGE.

EVERY traveller who has been to the prettily-situated hamlet of Zervreila, near the head of the Lenta Valley, above Vals Platz, in the Grisons, has been much struck by the startling appearance of the Zervreilerhorn, which rears itself like a miniature Matterhorn to the south of that

village. An idea of its aspect may be gathered from the poor woodcut in the 'S.A.C. Jahrbuch,' vol. viii. p. 52, or, better, from the accompanying view, reproduced from a photograph by Herr Emil Huber, of Zürich. No doubt some one must have been tempted to go up it, and perhaps actually did go up it. I was long rather uncertain as to the latter point; at any rate, no one before 1893 condescended to describe how it could be ascended, save a vague general indication in the guide-books that it was not difficult from the side of the Plachten Alp, *i.e.* the east. When I paid my first visit to Zervreila, in August, 1892, all ambitious plans were overthrown by the fact that there was nothing more to drink and very little more to eat at the small inn where we had taken refuge, as the good inn was closed owing to a feast-day. Hence the account of this mountain that I could give in my 'Adula Alps,' pp. 117-118, was very meagre, and, to me, most unsatisfactory. Just too late for insertion in that work, I received some notes of an ascent made by Herr Emil Huber, of Zürich, in 1885. So there was every reason for returning to Zervreila in 1893.

Accordingly, young Christian Almer and I left Vals Platz (whither we had come from Splügen, over the Bärenhorn, the day before) on the glorious morning of August 18 last, and went up by the usual path (largely through fine forests, high above the infant Rhine) to Zervreila in $2\frac{1}{2}$ hrs. The good inn was now open. It is kept by Tönz (formerly by Lorez), and offers simple but sufficient quarters for mountaineers. As the day was so fine we had determined to make the ascent that very morning, as the peak rises only 3,662 feet above the hamlet at its base. The sight, too, of the peak through the trees, as we came up from Vals, kindled our enthusiasm afresh. So we halted only to breakfast and get provisions, and then, leaving all our other traps behind, started at 10.35 A.M. for the assault. Crossing by the bridge at once to the right bank of the Rhine, and a few steps later traversing the Kanal stream, we mounted by the path opposite Zervreila which leads to the Plachten huts. The track got fainter and fainter, so, as the way was perfectly easy, we bore more and more to the S.W., never indeed seeing the Plachten huts till on our return journey. It very soon became evident that the grand peak seen from Zervreila was not an isolated needle, but simply the end of a long jagged ridge. The question at once arose, Which was the highest point of this ridge? That question it was not at all easy to solve from below, as many

pinnacles on the ridge seemed in turn to claim supremacy. We finally called a halt at the base of a steep green gully, which seemed to run high up into the mountain, and would bring us at least on to the crest of the S. ridge. We had taken 1 hr. 25 min. from Zervreila to this point. A faint sheep-track led up the N. rim of this gully, and up this we toiled in the heat, wondering when the track would end. It did not end, however, till we found further progress barred by a blank wall, built by the shepherds to keep the sheep away. Getting over this we found ourselves in a very wild hollow or small plateau, immediately S. of the main mass of the mountain, and N. of a lower summit, which rose very little above us, and was crowned by a great cairn. The ascent of the green gully had taken us $\frac{3}{4}$ hr. slow going. In this very wild region we were considerably astonished to see our sheep-track turn N. and calmly mount in the direction of the peak. Of course we were bound to follow it, and so we did through very wild and jagged rocks. We thought at nearly every step that it would end, but it always went on in the oddest places, till we were so high that I suggested it would probably lead straight to the top, a suggestion which Christian laughed to scorn. We were both so curious and excited that we pushed on rapidly to see how this adventure would turn out. At intervals we caught glimpses of a bare rock needle rather to the left, and doubts arose as to whether we could climb such a gaunt pinnacle. They were needless, however. Our faithful track led us on right to the foot of a rocky mass, up which we scrambled, to find ourselves on the loftiest point of the Zervreilerhorn ($\frac{1}{2}$ hr., or 2 hrs. 40 min. from Zervreila). This was a surprise, as neither of us imagined we were anywhere near it; but this was a day of surprises. To the N.E., and separated from us by a deep gap and a set of most forbidding pinnacles, rose the bare needle which had so disturbed our peace of mind. It is a magnificent sight, and gradually it dawned on our astonished minds that this needle was really the pinnacle which makes such a show from Zervreila. It was easy to prove this, as from our standpoint Zervreila was not visible, being just hidden by this bare needle. As the peak we were on was about 60 or 70 feet higher than the needle, it followed that the true Zervreilerhorn was not seen from the hamlet, though the impostor was such a fine fellow that we forgave him the trick he had so long played on us. The impostor has a curiously-shaped rock on his top which is singularly like a

cairn, but is a freak of nature. From Zervreila this false cairn is very deceiving. On our peak there was a small cairn, a real one, though without card or bottles, so that we could easily credit our landlord's statement that travellers very seldom made the ascent. The summit of our point is very curious. There are two great pillars (short ones) or boulders, which bear up a huge, slightly-sloping table or roof of rock; this is the summit, and it is striking from below to look through the gap between the two pillars, which is 6 or 8 ft. wide. The view was fine, but we had so often seen it from other neighbouring points that we paid little attention to it. We seemed to swim in mid-air, yet this was only a sham, for a few steps below the rocks were all right. Certainly the rocks fell away abruptly towards the bare needle, but then, as it was lower, this did not bother us. We spent nearly $1\frac{1}{2}$ hr. on the top, on a glorious August afternoon, enjoying ourselves thoroughly, and filled with delight at being masters of the secret of the Zervreilerhorn. Though the peak attains a height of only 2,899 mètres (9,508 ft.), it is so centrally placed that it commands a very extensive prospect. Zervreila itself was missing, for the satisfactory reason I have mentioned above.

We went down at first by the way we had taken on the ascent. Thirty-five minutes took us to the foot of the green gully. Then we bore over stones and grass towards the N.E., passed a lake, and some distance below lighted at last on the rude Plachten huts (42 min.), hidden away in a green dell. Thirty-eight minutes more brought us back to Zervreila (1 hr. 55 min. from the top), whence we looked up with pride at the peak towering above us, not because we had been on it, but because we had been on a higher point, the real Zervreilerhorn.

I need hardly say that this ascent is to be recommended, not so much for its difficulty as for its singularity. It is quite unlike any peak I know of. The double summit recalled in a way our experiences far away in Dauphiné on the Aiguille Noire, a point (2,892 m.) of about the same height, while the surprises of the climb were even greater than on the Dôme (3,033 m.), above Val d'Isère in the Tarentaise. Rock specialists would probably find plenty of work for them on the bare needle.

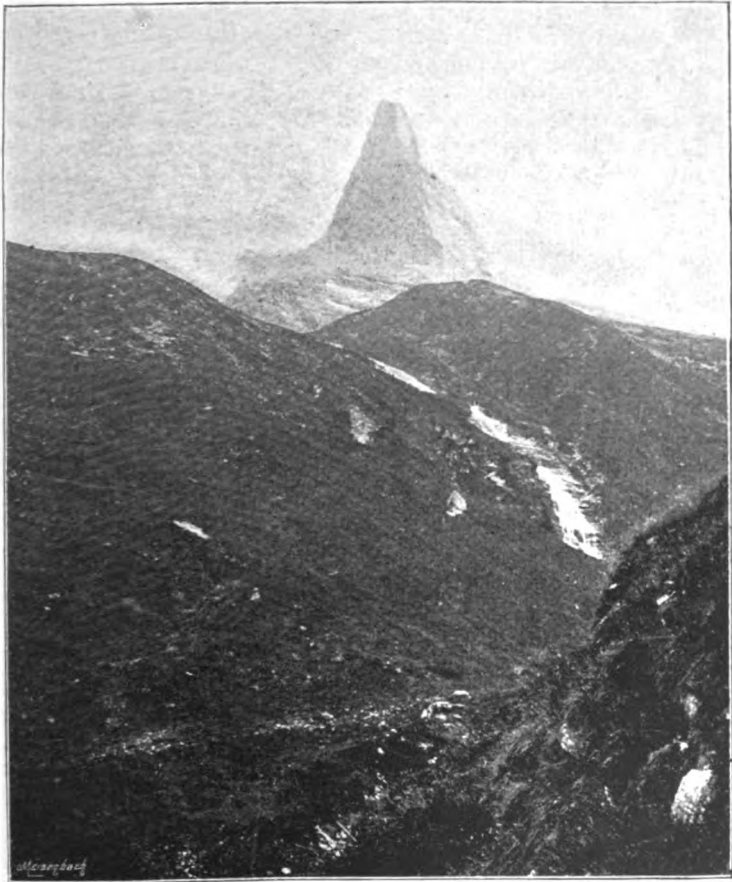
It remains for me to give some account of the only other ascent of which I have details. This was effected by Herren Emil Huber and Adolf Frick (both members of the Uto section of the Swiss Alpine Club) on August 13, 1885. Herr

Huber has given a short notice of it in 'Alpina,' vol. i. p. 17, and has supplied me privately with several other particulars. The party started from the Lampertsch Alp, on the N.W. of the peak, waded the Rhine, then mounted over stone slopes in a S.E. direction, finally clambering up the rock terraces on the left or S. side of the great gully (then filled with ice and raked by stones) which separates the highest summit from that which I have called the bare needle or the impostor. Having nearly gained the deepest depression between these two summits, they bore right, gained the N.E. arête, and climbed up it to the true summit. Herr Huber states that the impostor has been climbed by a Zervreila hunter, but possibly the false cairn on its top accounts for this impression. The descent was made by a different route, down the S.E. flank in the direction of the Kanal glen.

Herr Huber (to whom I am much indebted for much help in preparing my 'Adula Alps') most kindly, knowing my admiration of the Zervreilerhorn, took a special photograph of it from the N.W. last June, which he has courteously allowed me to reproduce in order to illustrate my narrative. It gives an excellent impression of one of the oddest peaks in the Alps, and allows you to see, on the left, the low cairn-crowned point S. of the green gully.

THE NEW EDITION OF MR. BALL'S 'ALPINE GUIDE.'

THE Committee of the Alpine Club has done me the honour of entrusting me with the preparation of a new and thoroughly revised edition of the greater part of (General Introduction, and vols. i. and ii.) Mr. Ball's classical 'Alpine Guide.' It is obvious that a work of the desired completeness and accuracy cannot be produced except by the combined efforts of many individual climbers, and of others interested in the Alps. Every one of us knows how much the value of Mr. Ball's book was increased by the notes he received from the Alpine explorers of thirty and more years ago. This fact holds good of the new edition also, and outside aid is even more necessary now than then, owing to the way in which the Alps have been minutely explored since the book was originally written. Hence I, as the successor of Mr. Ball in the editing of this portion of the 'Alpine Guide,' earnestly appeal to the successors of the helpers of Mr. Ball, and trust that, like him, I may be favoured by many notes and sug-



THE ZERVREILERHORN FROM THE N.W.
(After a photograph by Herr Emil Huber, of Zürich.)

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gestions. Certain sections will be placed in the hands of specialists, but all notes of all kinds should be sent to me (before November 1, 1894, for vol. i. and General Introduction; a year later for vol. ii.), addressed to Magdalen College, Oxford. They will be most welcome, and will be utilised as far as possible. In this way alone can the new edition be made a worthy tribute to Mr. Ball's memory, and a credit to the oldest of Alpine Clubs. W. A. B. COOLIDGE.

IN MEMORIAM.

JOHN TYNDALL.

I. AS A MOUNTAINEER.

WITH the claims of the late Professor Tyndall to rank amongst the most eminent men of science others must deal; but as a mountaineer he held for many years a conspicuous place. Although not an original member of the Alpine Club, he was elected so far back as 1858. Four years later he became Vice-President, the rules of the Club having been altered for the express purpose of enabling the members to ensure his services in that capacity. As a matter of course he would a little later have occupied the chair, but, rightly or wrongly, he took umbrage at some remarks made by a prominent mountaineer, which, in his opinion, reflected upon the value of science in connection with mountaineering, and he resigned at once his membership and his office.

A few years later time had healed all old sores, and in the year 1887, on the motion of Mr. Dent, he was unanimously elected an honorary member. The cordiality with which the appointment was made and announced, evoked from him expressions of the warmest gratification.

It is believed that he made at least one visit to the Alps prior to the year 1856, but it is certain that it was in that year that he began his serious Alpine work, and made the discovery, which so many of us have since made, that as an antidote to mental exertion too long persisted in, the air of Helvellyn or Snowdon is not enough. 'In my weariness,' he says, 'the very thought of the snow-peaks and glaciers was a tonic—the icy air of the Alps seemed essential to my restoration.'

He began, like the rest of us, with a branded alpenstock, which he received from eminent hands. 'It was on the 16th of August, 1856,' he writes in his 'Glaciers of the Alps,' 'that I received my alpenstock from the hands of Dr. Hooker in the garden of the Pension Ober at Interlaken. It bore my name, not marked, however, by the vulgar brands of the country, but by the solar beams which had been converged upon it by the pocket-lens of my friend.'

During that year he was an observer rather than a climber. He visited the Unteraar Glacier and the famous Hôtel des Neufchâtelois of Agassiz. He carefully investigated many glacial phenomena. He

crossed the Stelvio with Dr. Frankland, and the results of the observations made during this season were communicated by him and his friend Mr. Huxley to the Royal Society. In the following year he continued his observations upon glaciers amongst the upper ice-fields of the Mer de Glace, climbed the Col du Géant, and, in company with Mr. Hirst, made his first ascent of Mont Blanc.

In 1858 he crossed the Strahleck Pass with Professor Ramsay, and meeting John Joseph Bennen, of Laax, for the first time, at the Eggischorn, ascended with him to the summit of the Finsteraarhorn. A little later he climbed Monte Rosa with Ulrich Lauener, and, finding himself in first-rate condition, he left his coat behind him, and, provided only with a ham sandwich and half a bottle of tea, he made a second ascent of the mountain—alone. Here he unfortunately lost his axe, but regaining it with extreme care, probably felt that a *tour de force* of this kind was not a wise proceeding, and that solitary climbing was a mode of amusement that could hardly commend itself to a prudent or a reasonable man.

In the month of September in the same year he made his second ascent of Mont Blanc in company with Mr. (now Mr. Justice) Wills, but with the usual contingent of guides and porters; the leading guide, Auguste Balmat, of Chamonix, nearly losing his hands from frost-bite on the occasion.

In 1859 Tyndall made his well-known winter expedition to the Mer de Glace. In 1860 he accomplished the first passage from Lauterbrunnen to the Eggischorn by the Lauwinen-Thor, led by Christian Lauener and the younger Kauffman. In 1861 he succeeded in making the first ascent of the Weisshorn. This magnificent peak was first seriously attempted by Mr. Leslie Stephen in 1859, and by myself, accompanied by Melchior Anderegg, in 1860. Tyndall succeeded where we failed, and although jealousy, properly so called, must ever be odious to mountaineers of well-regulated minds, the news of his success was received by both of us with a certain pang. His subsequent expeditions were the passage of the Gault Joch and the old Weiss Thor in 1861, the ascent of the Jungfrau in 1863, the Pitz Morterastch in 1864, the Eiger in 1867, the Diablerets in 1868, and the Aletschorn in 1869. His early attempts on the Matterhorn are well known: on his second trial he succeeded in reaching the foot of the final cone from the south side, the highest point of the mountain which had then been attained; and a projecting buttress, which, as seen from Breuil, has all the appearance of a subordinate peak, still bears his name. It was not, however, till 1868 that, under the guidance of Joseph Maquignaz, he finished his contest with that famous peak by making the first passage across its summit from Breuil to Zermatt.

In later years he built himself a summer residence near the Bel Alp, which he called 'Alp Lusgen.' The house itself was extremely ugly, but the situation was marvellously beautiful, and commanded splendid views of the Weisshorn and the Matterhorn, his favourite peaks.

There is no doubt that in his younger days he was not only an enthusiastic but a thoroughly competent mountaineer. He was

patient but resolute; he was prudent though brave; his interest was equally divided between the scientific knowledge which he acquired by a patient study of mountain and glacier, and the perhaps higher kind of knowledge to be obtained only by climbing into their innermost recesses.

His works on Alpine subjects are familiar to us all. His first book on strictly Alpine matters was 'The Glaciers of the Alps,' which was partly a scientific work, but which contained a very interesting record of his previous achievements. This was followed by his article in 'Vacation Tourists.' Then came 'Mountaineering in 1861,' a little book chiefly remarkable for his account of the first ascent of the Weisshorn—published in 1862. Then came his 'Hours of Exercise in the Alps' in 1871, and subsequently a little pamphlet on the great Forbes controversy, raising questions which may now be wisely forgotten—published in 1873.

His last book, called 'New Fragments,' appeared in 1892, but contains only two chapters on Alpine subjects, 'Life in the Alps' and 'Old Alpine Jottings,' and one poem of considerable power called 'A Morning on Alp Lusen.'

Tyndall used to call himself, before all things, a man of science. Sometimes he used scientific expressions in his description of common objects, which could not fail to provoke from his many readers an involuntary smile. Thus the lower limbs of Christian Lauener were 'massive levers plied with extraordinary vigour to project his body through space.' In drinking a dish of milk he says, 'With my two hands I seized the two ends of a diameter of this vessel, and gave it the necessary inclination.' But these are small blemishes in a style which, as a rule, conveys to the reader in the most terse and clear manner exactly what the writer wishes to say. In Tyndall's writings, as in his lectures, he was a perfect master of lucid exposition.

He will be gratefully remembered by many old friends and comrades. I for one cannot forget his unvarying kindness and courtesy in the old days to the then younger generation of Alpine men. I remember him at Grindelwald and at the Riffel Alp; I have heard him discuss religious topics with Dean Lake at Pontresina, and politics with Austen Layard at the Eggischorn. His conversation, though sometimes aggressive, was often brilliant and always interesting. Peace to his memory. He loved the mountains with all his heart, and he made his mark in his day.

C. E. MATHEWS.

II. AS MAN OF SCIENCE.

It seems curious that the death of Professor Tyndall should have made so little stir in the world of science. How different it would have been twenty years ago! Captivated, perhaps, by the boldness of his thought and the confidence of his style, his admirers allowed their zeal to outrun their discretion. The inevitable swing of the pendulum has carried the reaction too far. Perhaps the ardour with which he championed what he thought slighted merit, and the vigorous incur-

sions he made into politics during the last few years, damaged his scientific reputation; for politics (like the tailor's art) are not yet reduced to the level of an exact science.

Several of Tyndall's researches are brilliant; some are of first-rate importance. In this place we can but touch on those connected with his Alpine work. But if it is no easy matter to-day to assign the rank which Professor Tyndall will take in physical science, still more difficult is it, in face of the fierce polemics which have embittered the question, to gauge the value of his contributions to the theory of glaciers.

Professor Tyndall was first attracted to the study of glaciers in 1856. He had been working on the cleavage of slates, and his attention was drawn by his colleague Professor Huxley to the similarity of the 'veined,' or laminar, structure of glacier ice to the slaty cleavage, and to the probability that the same explanation might apply to both. At once the friends agreed to study the structure of the Swiss glaciers on the spot, and in the following summer visited together the glaciers of Grindelwald, the Aar, and the Rhone. In his first paper, published in conjunction with Professor Huxley, he gives the first satisfactory explanation of the veined structure, an explanation hinted at by M. Guyot, who first observed the phenomenon. The structure cannot be described better than in Guyot's own words:—'In ascending the glacier of Bettelmatten . . . I saw under my feet the surface of the glacier entirely covered with regular furrows, from one to two inches in width, hollowed in a half snowy mass, and separated by protruding plates of an ice more hard and transparent. It was evident that the mass of the glacier was here composed of two sorts of ice, one that of the furrows still snowy and more easily melted, the other that of the plates, more perfect, crystalline, glassy, and resistant. . . . After having followed them for several hundred yards, I reached the edge of a great fissure, which, cutting the plates and furrows perpendicularly to their direction, permitted the structure to be observed on a beautiful transverse section. As far down as my vision could reach I saw the mass of the glacier composed of a multitude of layers of snowy ice, each two separated by one of the plates of ice of which I have spoken, and forming a whole, regularly laminated in the manner of certain calcareous slates.'

The theory of lamination finally adopted by Forbes was that the thin plates of ice were due to the infiltration of water into crevices in the glacier, where it is subsequently frozen. This theory was opposed by Tyndall on the grounds that no one had seen the crevices filled with water before freezing, and that the winter cold did not penetrate to the depth at which the veins had been observed. Tyndall showed that pressure would produce lamination in wax and other bodies, partly by the conversion of irregularly-formed surfaces of weak cohesion into parallel planes, partly by the lateral sliding of the particles in a direction at right angles to that in which the pressure is exerted. Tyndall showed, by many observations on the glaciers, carried out during several years, that wherever the necessary pressure came into play the veined structure is developed—*e.g.* at the foot of ice-falls, at the con-

fluence of two glaciers—being always approximately at right angles to the direction of the pressure.

On the mechanism by which glaciers flow down their beds, Tyndall strongly adopted the view of Rendu and of Forbes, that the glacier flows under the action of gravity like a plastic mass. By accurate measurements made on the Mer de Glace he showed that when a glacier moves through a sinuous valley the point of maximum motion does not coincide with the centre of the glacier, but always lies on the convex side of the central line. The motion of the ice is thus ruled by precisely the same law as the motion of a river. Where he differed from Forbes was in his unwillingness to allow that ice was viscous in itself. He endeavoured to show that ice had a property *equivalent* to viscosity, in virtue of which it could move and mould itself like a true viscous body. In *regelation* Tyndall put forward a property of ice which in his opinion explained the *apparent* viscosity of glaciers. Tyndall's theory was often spoken of as that of 'crushing and regelation,' though he himself says 'rude fracture may be avoided and the ice slowly compelled to change its form as if it were a plastic body.' It may perhaps be said that there is little difference between this view and that of the real plasticity of ice under steady pressure; but Tyndall regarded the ready formation of crevasses as evidence that glaciers would not stretch, and therefore were not really plastic. As we now know, recent experiments on glacier ice have shown that it is capable of stretching. On the question, which has also been greatly discussed, whether glaciers slide over their beds, Tyndall supported the views urged by W. Hopkins. He pointed to many instances of grooved and polished rocks as evidence that the glacier had moved over them with friction. 'It is perfectly certain,' he writes, 'that a glacier *changes its form* by pressure like a plastic mass, but it is equally true that it *slides over its bed*.'

It is interesting to mountaineers to have scientific demonstration of the purity of mountain air. For some years Tyndall worked on the putrefaction of organic infusions by atmospheric germs. Carrying various infusions in sealed tubes to the Bel Alp, he opened them on the edge of the precipice facing the glacier. Filled with mountain air, the tubes remained clear and sweet, while similar tubes opened in London rapidly filled with bacteria.

One of Tyndall's most remarkable discoveries relates to the blue colour of the sky—and its polarisation. This had long been an enigma. Sir John Herschel said:—'The more this polarisation is considered the more it will be found beset with difficulties, and its explanation, when arrived at, will probably be found to carry with it that of the blue colour of the sky itself.' Tyndall's discovery fulfilled this prediction. He showed that the *incipient* cloud formed by the condensation of attenuated vapours appeared blue when illuminated by the electric beam, and that the light discharged by the cloud was polarised, the direction of maximum polarisation being at right angles to the illuminating beam. 'That water particles, if fine enough, would produce the same effects does not admit of reasonable doubt, and that they must exist in this condition in the higher regions of the

atmosphere is, I think, certain. At all events, no other assumption than this is necessary to completely account for the firmamental blue and the polarisation of the sky.' H. D.

PROFESSOR MILNES MARSHALL.

A. MILNES MARSHALL, whose death occurred on December 31, 1893, on the ridge which bounds Lord's Rake to the west, was one of the most brilliant of the recent English zoologists. He graduated at Cambridge as Senior in the Natural Science Tripos in 1874. He took the B.A. and D.Sc. degrees of the University of London.

After spending a few months at Naples in the Zoological Station controlled by Dr. Dohrn he returned to Cambridge and assisted the late Professor Balfour in arranging the classes in Comparative Morphology. Previous to accepting the Professorship of Zoology at the Owens College, he gave some time to the study of medicine, having gained in 1876 the entrance scholarship in Natural Science at St. Bartholomew's Hospital. On commencing his career at Owens College he gave up all ideas of medical practice and devoted himself entirely to zoological work. Some particulars of this department of his will be found in 'Nature' for January 10. It is, however, of general interest that his books on 'The Frog' and on 'Practical Zoology' have been highly appreciated by students of the medical profession and by others commencing a career of zoological study and inquiry. His greatest work, a manual of Vertebrate Embryology, was published only a few months before his death. His more advanced and original work led to his election as a Fellow of the Royal Society in 1885, on the Council of which he served in 1891-2.

He was a most successful and vigorous teacher. His lectures were illustrated by many excellent diagrams, which he himself had prepared, and by sketches, rapidly drawn upon the blackboard, of points to which special attention was drawn.

No student needing assistance in the accomplishment of his work appealed in vain for Professor Marshall's help.

To the progress of the Victoria University he earnestly devoted his powers. At the time of his death he was a member of the University Council, and all matters relating to the Science curricula were carefully and seriously considered and discussed by him.

He was not less successful as a popular lecturer than in the discharge of his academic duties, and the University Extension scheme owed a large share of its success to his enthusiastic support. His interest in public lecturing led to the preparation of a popular lecture, with a number of good lantern slides, on the Matterhorn, which had been given two or three times before his death.

Though keen and skilful as a mountaineer it was only during the last few years that he had vigorously indulged in the recreation. Professor Balfour's accident had led him to refrain from an earlier commencement of a pursuit to which he had become keenly attached. It is only about eight years ago that he began earnestly to devote

himself to the pleasures of holidays on the Alps. Before last summer by far the best part of his ascents had been accomplished in the Zermatt district. Last year he probably made the most successful of his mountaineering expeditions. He climbed both the Drus and the Matterhorn from the Italian side, and, as indicated in the last number of the Journal, made some little variation in the ascent of Mont Blanc from the Quintino Sella Club Hut.

All who had the pleasure of meeting him in Switzerland knew the energy which he threw into mountaineering work or mountaineering playing, and those who had climbed with him knew well the extreme caution and care with which he overcame the difficulties of his attempts.

／ MELCHIOR ULRICH.

It is announced that on July 22 last Herr Melchior Ulrich passed away, in the 92nd year of his age, and it is but fitting that some notice should be taken in these pages of one of the early pioneers of our craft.

I have described him elsewhere ('Swiss Travel,' p. 295) as 'the most indefatigable early explorer of the glacier regions of the Zermatt valley,' and this, in truth, was perhaps his chief claim to remembrance as a climber. He was to the glacier passes of Zermatt in those early days what Engelhardt was to the lower hills of that valley. In 1847 he re-discovered and crossed the Allalin Pass; in 1848 he made the first passage of the Ried Pass, climbing on the way the Ulrichshorn, to which his name was later given by Pfarrer Imseng, of Saas, and took part in the second attempt to reach Monte Rosa, though he himself did not get further than the Silber Sattel; in 1849 he crossed the Adler Pass for the first time, made an attempt on the Nord End, and went over the Col d'Hérens; while in 1852 he traversed the New Weissthorn, of which he was the first to give a detailed account, so that he was long (but erroneously) believed to have made the first passage. We hear, also, that he had an idea of crossing (in 1853) the Triftjoch, though bad weather drove him back. In 1850 he went up the Diablerets, this being the first ascent from the direction of the Ormonts valley; in 1852 he re-opened the old pass of the Geltengrat; in 1853 he made the first traveller's ascent of the second summit of the Tödi, the Glarner Tödi, and in 1858-9 explored the Clariden glacier, crossing the Clariden Pass from the Maderanerthal to Stachelberg. A less successful expedition was his attempt, in 1850, on the virgin Monte Leone, when two peaks of the Breithorn were attained, though a few days afterwards he succeeded in traversing the Thäljoch near the Weissmaies. In 1863 he crossed the Silvretta Pass, and also made the fifth ascent of the Piz Morteratsch. Indeed, as he himself tells us in narrating the last-mentioned ascent, he devoted himself to the Vallais Alps between 1847 and 1852, and then took up the Engadine as the scene of his explorations. This, of course, does not pretend to be anything like a complete list of his ascents, but it may serve to show that he was a pioneer in the days when the great mountains were still

regarded with horror. In this respect he much resembled his intimate friend Gottlieb Studer, with whom, indeed, he made many of his expeditions, and published many of the narratives describing them.

His literary work is scattered throughout a number of periodicals, which makes it rather difficult for a bibliographer to follow him, especially as he was in the habit of recasting his accounts and putting them forth in different forms. As far as I can discover, the earliest account of his climbs appeared in the 'Mittheilungen der naturforschenden Gesellschaft in Zürich,' between 1849 and 1855. He published a separate revised description in an excellent little pamphlet, 'Die Seitenthäler des Wallis und der Monte Rosa' (1850), while he contributed a further version of certain climbs to the two series of 'Berg- und Gletscherfahrten' (1859 and 1863). The first two volumes (1864-5) of the 'S.A.C. Jahrbuch' contain articles from his pen, while he was naturally chosen by that Society to compile the report of the ascents made in the extensive district between the Grand Combin and Monte Leone, given in vols. iv.-vi. of the 'Jahrbuch.' I say he was naturally chosen, because (though I have omitted to make mention of them in the proper place) by reason of his passages of the Cols de Seilon and du Mont Rouge (in 1849 and again in 1852), and of the Col de Crête Sèche in 1852, in addition to the expeditions named above, no one at that time was better qualified to perform this laborious task.

With Ulrich passes away one of the last, if not quite the last, of that enterprising band of Swiss who did so much to prepare the ground for the later work of organised societies in the shape of Alpine Clubs. They worked alone, or nearly so, and we, their successors, have some trouble in realising the real importance of their work and the continual hindrances by which they were beset. Still we can but thankfully acknowledge that without their persevering and long-continued efforts we should have had a much harder task to accomplish than has actually been the case. Hence we are called upon to pay their memories due honour, and bound to hold up their examples to those who shall come after us.

W. A. B. COOLIDGE.

THE MARQUIS DE TURENNE.

IN the Marquis Gustave de Turenne d'Aynac, who died on October 21, 1893, the Club loses its most aged member. The Marquis was born in the year 1803. He made his first studies in the Institution Gerlach. It was Gerlach's habit, long before Töpffer, to take his boys for vacation rambles. With one of these parties young Turenne, in 1817, made his first visit to the valley of Chamonix. Shortly afterwards he entered the Ecole Polytechnique, from which he passed into the army. He was in due time created Chevalier of the Legion of Honour. He retired from the army about 1848, and thenceforward he was able to indulge his taste for travel amongst mountains. He visited repeatedly the Pyrenees, Savoy, Dauphiny, Switzerland, Auvergne, and the like. The sport of climbing was not developed

then as it is now, and M. de Turenne devoted himself rather to shooting in mountain districts than to climbing pure and simple, though he nevertheless made no small number of ascents, especially in the Pyrenees. In 1875, being then seventy-two years of age, he reached the summit of Mont Blanc. He was one of the founders of the French Alpine Club, and was a member of the Direction Centrale till his age forced him to retire, when he was unanimously elected an honorary member. He was regarded as the *Doyen* of French mountaineers.*

CORRESPONDENCE.

THE HEIGHT OF K₂.

To the Editor of the ALPINE JOURNAL.

13 Cromwell Road, London, S.W.: December 11, 1893.

SIR,—My attention has been recently drawn to the article 'Karakoram Mountain Survey Expedition-Altitudes' in your Journal for last November. It is there stated that the height of the mountain K₂ is 27,750 feet, as measured with a theodolite by Mr. W. M. Conway from his so-called Junction Camp, of which the height was determined by observations, on five days, with a Casella's Boylean-Mariotti mercurial barometer, which had been reduced by comparison with barometric readings at Leb and at Gilgit. It is added in a foot note that the height previously ascribed to K₂ was 28,278 feet.

I would ask permission to point out that the height previously ascribed was derived from the operations of the Great Trigonometrical Survey, by independent observations from nine stations of the Kashmir Principal Series. This is shown in Synoptical Volume No. 7 of the account of the operations of the Survey. It is highly improbable that the mean of these nine independent determinations can be as much as 50 feet in error, and ridiculous to suppose that the error can be as great as 528 feet. This gross discrepancy between Mr. Conway's results and those of the Indian Survey shows clearly that there must be some error in his determination; and this error is probably due not to any error in his observations, but to the unreliability of a few days' barometric readings for the deduction of exact determinations of height.

The height of Mr. Conway's Junction Camp, as determined barometrically, is given as 15,870 feet; its distance from the mountain is shown by his map to be only 11½ miles, so his trigonometrical determination of the height of the mountain above the camp is not likely to be materially erroneous. But at the height of the camp an uncertainty of one inch in the barometric pressure causes an uncertainty of 1,500 feet in height; thus an error of only one-third of an inch in

* We are indebted for these facts to the kindness of our colleague, Monsieur Charles Durier.

the barometer, such as is very liable to be caused by irregular fluctuations of pressure, would explain the discrepancy which has been met with.

Mr. Conway seems to have taken much pains to obtain data for the correct determination of heights from his barometric observations. There is a Government meteorological observatory at Leh, about 150 miles as the crow flies from his Junction Camp, where the barometer is read four times daily and twenty-four times on one day of each week; there was also a temporary observatory at Gilgit. He very properly reduced his own observations by combining them with the simultaneous observations at Leh and also at Gilgit, and more than this he could not have done. But the trustworthiness of the height thus deduced rests on the assumption that the barometric variations occurring simultaneously at the observing stations are of identical magnitude and direction relatively to the mean yearly values. Now though this assumption is occasionally true, and then accurate results are obtained, it certainly is not always true, and it is not to be expected when the local surroundings of the stations are as different as they are in the present instance. Leh is 11,300 feet high, in a comparatively level plateau with only low hills around; Junction Camp is 15,870 feet high, in a narrow valley with mountains rising 10,000 to 12,000 feet above it; Gilgit is only 5,000 feet high, and is very much more open than Junction Camp. One has no right to expect that the fluctuations of barometric pressure at places so differently circumstanced would be constantly identical.

It is generally so much more easy to take barometer readings at any place than to carry a chain of triangles to it, for the purpose of determining its height, that attempts have been made in Himalayan topographical surveys to obtain several additional heights barometrically as a supplement to the trigonometrical determinations. The barometers were read and compared with a barometer set up for constant reference at one of the stations; they were also read as a check at some of the trigonometrical stations. But the results were very irregular, sometimes good, but occasionally 500 feet or more in error. Consequently, the barometric heights are shown on the maps in different symbols from the trigonometrical, being much less reliable.

Trigonometrical determinations are liable to error from uncertainty as regards the correction for refraction which has to be applied to the observed vertical angles. The value of the coefficient of refraction is obtained from mutual observations between the principal stations of the triangulation, and when these determinations are sufficiently numerous and satisfactory—as was certainly the case in the Kashmir triangulation—the value may be relied on with great confidence. It is improbable that any one of the nine determinations of the height of K_2 can be as much as 50 feet in error because of uncertainty in the refraction.

I should here state that the name, or rather symbol, K_2 was given to the mountain in question at the first trigonometrical station at which it was observed; but it was afterwards observed at eight other stations, and several additional peaks of the Karakoram range, to

which it appertains, were also observed. Thus, when the final reduction of the Kashmir triangulation was undertaken—on the completion of that of the great chains of the Indian Principal Triangulation, on which it is based—the symbolic numbering of the unnamed peaks was altered, to produce continuity of numbering from right to left. Thus in Synoptical Volume No. 7 of the Great Trigonometrical Survey, which was published in 1879, the peak is entered as Karakoram, No. 13. On reference to p. 189 of that volume it will be seen that the original value of its height, 28,278 feet, has been corrected to 28,250 feet; also that the discrepancy per mile in the lengths of the common sides of the triangles to the peak is 2·7 feet. The charts show that the distances of the observing stations from the peaks range from 50 to 100 miles, and thus the discrepancy in a distance of 100 miles cannot have exceeded 300 feet. These figures show that the apex of the peak was sharp and well adapted for observation on the wires of a theodolite. The mean of the nine determinations of height is given, but not the individual values, as this could not have been done generally throughout the volume without swelling it to inordinate dimensions.

Of late years the mountain has been called Mount Godwin-Austen. This name has not been universally accepted, but I notice that it is adopted in Messrs. W. and A. K. Johnston's beautiful atlas of India, which has just been published, and which, for loveliness of price and elaboration of detail, is a very remarkable production.

I am, Sir,

Your obedient Servant,

J. T. WALKER, General,

Late Surveyor-General and Superintendent of the
G. T. Survey of India.

While acknowledging the high authority of General Walker on matters connected with the Indian surveys, I have a few comments to make on his letter. The altitudes of the apparent summit of K_2 and of the highest point of the Golden Throne above Junction Camp, as deduced from observations made with a 3-in. transit theodolite, were 11,880 ft. and 7,730 ft. respectively. These altitudes are probably fairly accurate. The mean altitude of the base (of which more anon) was 15,870 ft. K_2 therefore comes out 27,750 ft. high, and the Golden Throne 23,600 ft. If Junction Camp was 500 ft. higher than 15,870 ft., the altitudes of both K_2 and the Golden Throne must be increased by that amount (28,250 ft. and 24,100 ft.).

The mean barometric height of Pioneer Peak was 22,560 ft. The top of the Golden Throne was approximately 800 yards distant (horizontally) from the top of Pioneer Peak, and its angle of elevation, measured very carefully with a clinometer, was 25° (with a possible error of certainly not more than 1°). Pioneer Peak is thus about 1,200 ft. lower than the Golden Throne. The Golden Throne, according to this measurement, is 23,760 ft. high—a value which

practically agrees with that obtained at Junction Camp, and which is independent of its altitude. If K_2 is really 28,250 ft. high, the Golden Throne is 24,100 ft., and Pioneer Peak must be 22,900 ft.—a value against which I at any rate cannot be conceived of as having any prejudice.

I believe, however, that Junction Camp is not higher than 15,870 ft., but, if anything, lower, and for the following reason:—That altitude is the mean of the altitudes deduced from five separate sets of barometric observations made on the following dates of 1892: August 13, 15, 16, 17, and 29, and compared with simultaneous observations made at Gilgit and Leh. The ten several values thus arrived at are respectively below or above the mean by the following number of feet: Below, 183, 181, 150, 135, 74, 46; above, 7, 27, 287, 447. Thus the values obtained are remarkably uniform, except in the case of the last two, which are deduced from the observation taken on August 29, when the worst storm that we encountered in the mountains had been raging about us (a purely local storm, by-the-by), and when the barometer may well have been exceptionally low on the Baltoro Glacier, though it was unaffected either at Gilgit or Leh, as the records from those places prove.

There are a few points whose heights were determined both by the Indian surveyors and by me. It may be interesting to compare our values. In the case of Kargil the G.T.S. figures refer to the fort, mine to the *serai* on the hill considerably above it. I am unable to compare our values for Skardo, because I do not know the position of the station to which the G. T. S. figures belong, and it is a place of many levels.

—	Indian Surveyors	W. M. C.
	Feet	Feet
Nomal	5,500	5,340
Foot of Biafo Glacier . . .	10 143*	10,120
Shigar	7,640	7,760
Kargil	8,787	9,160
Shargol	10,623	10,600

General Walker, like the officers who conducted the French survey, has a high opinion of the indisputable accuracy of trigonometrical determinations of altitude. Of course serious mistakes may arise by the confusion of two peaks seen from different points of view and the creation of a third out of them (Nagyr has its Mont Iseran); but only those who have done no practical work in the field know how difficult it is to avoid that class of error, and it is not of the kind we are now discussing. If the probable error in the altitude of K_2 cannot be more than 50 ft. out of some 28,000 (about .18 per cent.), how small should be the error in the trigonometrically determined altitudes of the Alps, where not only are the altitudes so much less, but, in a far greater ratio, the distances of the points from which the observa-

* Determined by Colonel Godwin-Austen.

tions for them were taken. Along the Italian frontier there are many peaks whose altitudes have been trigonometrically determined twice over and quite independently by the surveyors of the countries on opposite sides of the frontier. If K_2 cannot be more than 50 ft. out, the independent measurements of none of these Alpine peaks should differ from each other by so much as 20 ft. Such, however, is not the case. Here are a few instances; hundreds more might be adduced to match them :—

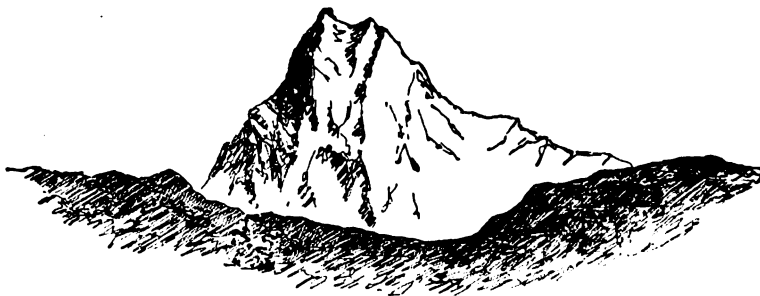
—	Swiss Map	Italian Map	Austrian New Survey	Austrian Cadastral	French Map
	M.	M.	M.	M.	M.
Monte Rosa (Parrot Sp.)	4,463	4,434	—	—	—
Cima di Jazzi	3,818	3,749	—	—	—
Schwarzberg-Weissthor	3,512	3,618	—	—	—
Mittel Pass	3,155	3,047	—	—	—
Mittelrück	3,324	3,362	—	—	—
Mont Velan	3,765	3,709	—	—	—
Col de la Goletta	—	3,120	—	—	3,063
Col de Rhêmes	—	3,101	—	—	3,062
Pointe de Calabre	—	3,276	—	—	3,363
Cimon della Pala	—	—	3,186	3,343	—
Cima di Vezzana	—	—	3,191	3,317	—
Monte Cristallo	—	3,153	3,260	—	—
Ritter Pass	2,692	2,762	—	—	—
Helsenhorn	3,274	3,239	—	—	—
Kriegalpsstock	2,685	2,718	—	—	—
Grieshorn	2,926	2,966	—	—	—

Moreover such errors are not confined to points of minor importance. That excellent amateur M. Ferrand once had the temerity to point out that the French surveyors must be in error in ascribing to the Cime d'Oin an altitude of 3,514 m. What followed he thus relates :—' Le commandant Rouby, alors attaché au Dépôt de la Guerre, adressa à la Direction centrale du Club une lettre de protestation qui fut insérée dans le 4^e Bulletin de l'année 1877, p. 365, et où il déclarait que la Cime d'Oin était un point géodésique, dont l'altitude exacte était 3513 m. 70 centimètres. Le Club y ajouta une note sévère à l'adresse des jeunes observateurs qui introduiraient des fautes là où il n'y en avait pas, et je fus par lettres privées tancé d'importance pour avoir osé entrer en lice avec la carte de l'Etat-Major et surtout avec les points géodésiques.'

Nevertheless the French Survey had ultimately to recognise an error of 237 mètres! It must in fairness be added that this gross error was in the calculations, not in the observations. I have recalled the story as a proof that the published results of an official survey are not always correct within 50 ft.

I am, therefore, still inclined to believe that the highest point of K_2 , visible from the Baltoro Glacier, may measure approximately 27,750 ft., and less rather than more. The question arises, Has the peak a higher summit which is not visible from the Baltoro Glacier? To this the answer is that probably it has not.

So far as I know there is only one published view of the mountain that makes any pretence to accuracy. It is on p. 370 of Drew's 'Jummoo and Kashmir' (London, 1875), and by the kindness of Mr. Edward Stanford I am enabled to reproduce it here. It has been suggested that Masherbrum is the peak depicted; but this cannot be, for Masherbrum's north face is not steep; besides, the south arête corresponds in all details with that of K_2 . The view is taken from Turmik, almost due west of K_2 , and at a distance of 70 miles. It shows a north point and a south point, separated from one another by a saddle, and the north point appears to be as much as 500 ft. (possibly more) higher than the south point. From the south point the south ridge drops steeply away. The summit of K_2 , as we saw it, and as the photograph shows it,* consists of a ridge, gently inclined to the south and with a point at each end. If these are the north and south points, Drew's sketch exaggerates the dip between them; if they are not, then he has exaggerated the steepness of the south arête. In either case his sketch is not strictly accurate, a conclusion fully accounted for by the distance from which it was made. A comparison of the two views renders it probable that the N. and S. points (which, following



K_2 , FROM TURMIK, FROM THE WEST.

Alpine custom, I should like to call the Godwin-Austen and Young-husband summits) are visible in both. If so, the point I measured is the north or Godwin-Austen point, and is the true summit of the peak.

It is, however, still just possible that a higher summit lurks behind what we saw. This can only be proved by a comparison with other views. I was recently informed, for the first time, by General Walker that several sketches of the mountain, included in profiles of the range taken from various points of view, exist in the archives of the G. T. Survey of India. Had I known of their existence when I was in India I should have taken pains to see them, and the present difficulty would not have arisen. But I was not so informed, nor indeed did I receive any help whatever from the officials of the Indian Survey. On my

* The view of K_2 is one of the illustrations drawn by Mr. MacCormick for my forthcoming book. I am enabled to introduce it here by the courtesy of Mr. T. Fisher Unwin.

arrival in India, acting on instructions received from the Indian Government, I wrote to the heads of various departments, including the Survey, and, with the exception of the Survey, I received from all the readiest and most valuable help. The Foreign Department, the Intelligence Branch, the Botanical and Meteorological Departments, the Government of Kashmir, and the officers at all the stations I passed through gave me valuable documents, and placed every possible facility in my way. The Survey alone helped me not at all, and sent me no documents whatever. It was only after my return to England, and by the kindness of General Walker himself, that I was given access to Synoptical Volume No. 7, referred to in his letter, and the possession of which would have been invaluable to me a year sooner.

I must also point out that General Walker is not correct in contrasting as he does the surroundings of Leh, Gilgit, and Junction Camp. All three are at the bottom of holes, Leh as much as either of the others. There is no plateau at Leh, only large sloping fans making the valley-bottom broad. The place is surrounded by high peaks. Gilgit is in a deep and narrow trough.

There is one question I should like to ask. The G.T.S. altitude of K_1 is the mean of nine different sets of observations, and this fact is highly important; but how far did the various values thus obtained differ amongst themselves? Of course if the nine several values are in close agreement, their mean is almost certainly correct to all intents and purposes.

It seems scarcely necessary to add that the map given in the August number of the 'Alpine Journal' was in no sense the definitive result of my journey. It was merely the hand map produced by the Geographical Society for the meeting at which I read a paper, and has no pretensions to be more than such hand maps usually are—a production obviously executed in the roughest style for a single occasion. Some perversity was needed (I am not referring to General Walker) to mistake it for my finished map, which will be published in due course with the other results of my travels.

There were two unimportant misprints in the list of altitudes. Bari Rung should have been 13,980 ft. and Paipering Maidan 10,990 ft.

W. M. CONWAY.

THE TÄSCHHORN ACCIDENT.

To the Editor of the ALPINE JOURNAL.

Lincoln's Inn: December 15, 1893.

DEAR SIR,—I desire, in all courtesy, to submit to you that the unsigned note, in the Journal for November, on the deplorable Täschhorn accident contains a condemnation of the guides which the circumstances do not warrant.

That condemnation appears to be based on two statements of fact—first, a statement that the spot where the travellers had to pass the night was only 'eight paces distant from two abysses,' and, secondly, a statement that Mr. Lucas is supposed to have rolled over the precipice in

the course of his sleep. On such a place, we are told (in substance) that the travellers ought to have passed the night roped together, and that the death of Mr. Lucas was due to the contravention of a law to this effect.

Now, sir, 'eight paces distant from two abysses' (I note that you are not the author of this unhappy phrase) has certainly a fine epic ring, but in prose it only comes to this: that the *gîte* was 20 ft. long and abutted at two places on a cliff. As regards the supposition that the traveller turned in his sleep, rolled over the cliff, and was killed, I am tempted to ask, By whom is this supposed? It is not the opinion of Mr. Lucas's companion, Mr. Williamson, nor that of either of the guides, nor, so far as I can ascertain, that of any person who knows the spot in the forest where the accident occurred.

The fact is that, when the party were benighted, Adolf Andenmatten, who, as leading guide, was responsible for their safety, selected for a *gîte* a perfectly level grass plat, more than 20 ft. long and 12 to 14 ft. wide. Behind, the ground shelved, but not steeply, so they could and did lie down, with their bodies at right angles to the cliff, leaving a clear space of two to three yards between their feet and the rock face. Adolf and the second guide lay towards the south end of the plateau, Mr. Williamson in the middle, with Mr. Lucas on his right. Towards the north the cliff curved in a little, breaking away to a couloir. Between this curved edge and Mr. Lucas a considerable fire was built, so that between him and the precipice there was, first, a small space of flat turf, then the fire, and beyond several feet more of flat turf.

I venture to say that not only is there no law that in such a place a party should sleep roped, but that to do so under such circumstances is unheard of.

Mr. Lucas suffered from thirst, and had said that he would give five francs if they would get him a drink. He had then been told that this was impossible, because, though the *gîte* was an excellent place for sleeping in, it was dangerous to go walking about it in the dark, because of the precipices. He had, in fact, been specially cautioned by Adolf against doing so. Mr. Lucas may have had a fit of somnambulism; or, wandering about either in search of water or otherwise, he may have fallen over. But the object of sleeping roped is not to guard against such contingencies.

Mr. Williamson writes to me, 'The place was a perfectly safe one. Lucas could not have rolled over. Adolf was in no way to blame.'

This, and no other, is, I think, the proper finding on the above facts. But, sir, as your indictment of the guides for carelessness is calculated materially to injure Adolf Andenmatten, whose one defect, speaking with 15 years' knowledge of him, is excess of caution, I ask you, and I feel sure I shall not ask in vain, to submit this defence to the judgment of the Club.

I am, dear Sir, yours truly,

REGINALD HUGHES, A.C.

ACCIDENTS.

BALLOON ACCIDENT IN THE ALPS.

MANY books and articles have been written during the last few years on the subject of Alpine dangers and accidents, and it might have been reasonably supposed that no single form of peril remained against which due warning had not been given, or a variety of precautions recommended. Yet we will venture to say that no one of the 'active and intelligent' authors ever contemplated the possibility of such a disaster as that which happened in the Levanna district last autumn.

It is a good many years since some imaginative person wrote to this journal to suggest the use of balloons as an aid to climbing. The suggestion was not taken up with any enthusiasm, and the matter passed into oblivion. Perhaps it was just as well, for—as the incident to which we are referring seems to show—a balloon in the mountains is by no means a trustworthy ally.

In October last, Captain Charbonnet, of Lyons, who was in business at Turin, married a young lady of that city. Being a distinguished aeronaut, and thinking, it may be supposed, that he could not too early initiate his bride into the pastime which he loved, he started on the evening of his wedding from Turin in his balloon 'Stella,' apparently with the view of reaching Lyons. That day only some ten miles were accomplished. The next morning, October 9, they started again at 10 A.M., accompanied by two young men, Giuseppe Botto and Costantino Durando, the latter an habitual assistant of Captain Charbonnet in his ascents. Stormy weather seemed to be brewing, and after rising to a height of 3,000 m. they were caught in a current which carried them at first towards Pinerolo, then a little west of north. At Saluggia they nearly touched ground, then leapt up again to 4,000 and presently to 6,000 m. About 2.30 P.M. the balloon began to descend rapidly, and they had some difficulty in stopping it at 3,000 m. Here they were in dense clouds, and bitterly cold; quite ignorant, moreover, of their position. Captain Charbonnet made his crew lie down in the car, himself leaning out in order to try if he could catch a glimpse of any point from which he could learn his bearings. The balloon was drifting at a great rate, and nothing could be done to check it. Presently there was a shock, and Captain Charbonnet was thrown to the bottom of the car by a heavy blow over his left eye. The balloon rebounded, and dashing across a gully struck the other side of it. Two or three more strokes and returns of this kind completed its collapse, and it finally settled down on a steep rocky spur on the east side of the Bessanese (3,632 m. = 11,917 ft.), just above the small glacier of Salau. It had struck the wall of the mountain which faces the Rifugio Gastaldi, at a height of about 3,000 m. (9,843 ft.).

The aeronauts reached the ground a good deal shaken and bruised, but none of them, except the leader, suffering from any serious injuries. The clouds presently broke sufficiently to show that they were among high mountains, but whether in France or Italy they had no notion;

nor did the clearing continue long enough to enable them to find a way of descent before nightfall. Their sole provision was one bottle of wine; but they were fairly well off for covering, and they cut up the balloon to supply deficiencies. In the night a violent storm came on, to add to their misery. In spite of his injuries, Captain Charbonnet kept the spirits of his companions up as well as might be; but towards morning his powers failed, and when day dawned, his young wife, a girl of only eighteen, had some difficulty in bringing him round.

They started to descend the snow slope, Durando going first, and making steps to the best of his power with his feet 'and with a long key which he happened to have in his pocket' (says the 'Rivista'). Of course they had neither nails nor poles; and, by a fatal imprudence, it would appear, on the part of their leader, they did not tie themselves together, though ropes must have been in plenty in the wreck of the balloon. Presently Charbonnet slipped. He was held up by his wife and Botto; but a few minutes later he disappeared into a hidden and, by the inexperienced travellers, unsuspected crevasse. The others could see him far below, but as he neither moved nor answered their call, they rightly assumed that he was beyond the reach of any help they could afford, and proceeded downwards. After infinite difficulty, owing to their utter ignorance of the country, and after another night spent in the open air, they found a path which brought them to the hut under the Rocca Venoni. Thence a shepherd guided them to the Cantina della Mussa, where they were at first taken for deserters or spies; the lady, it should be said, had been obliged to put on a suit of her husband's clothes, her own having been torn to pieces in landing from the balloon. The sight of her hair and bracelets convinced the inhabitants of the true state of the case; a telegram was sent to Turin, and a message to Balme, and a search party came up from the latter place in the afternoon. Captain Charbonnet's body was recovered the next day. It was found at the bottom of a crevasse more than 60 feet deep, and completely doubled up; but medical examination showed that his death was primarily due to the injury received when the balloon first struck. The remains of the balloon were also recovered, but the car lies where it fell—a monument of as rash an expedition as was ever undertaken.

The above account is summarised from that given in the 'Rivista Mensile Italiana,' October 1893, pp. 348–350.

THE TÄSCHHORN ACCIDENT.

THE late Editor of this Journal writes with regard to the accident on the Täschhorn as follows:—'I am sorry to find that, owing to insufficient information, undeserved strictures were passed in the last number * upon Mr. Lucas's guides. The spot where the party slept was far below the level at which the rope would naturally be in use; indeed, it was actually among the trees. Whether as a matter of extreme caution it might not, as the event seems to prove, have been better to attach the party together even in this situation is possibly

* Vol. xvi. p. 503.

a point open to discussion ; what is quite certain is that the omission to do so in no way involved any culpable neglect of the usual precautions on the part of Adolf Andenmatten and Franz Zurbriggen. A letter on this subject will be found on p. 39, and from the now known fact that the party had been for a considerable time on a path, which was occasionally lost and found again by the aid of the lantern, it is quite evident that the guides were wise not to continue the descent when their candle was burnt out. It is a well-known fact that on a path the rope is never used, nor is it customary to rope a party together when sleeping on such a place as is described in the letter. The guides showed good judgment in allotting positions to Mr. Lucas and Mr. Williamson, and most certainly are to be held blameless. As, however, such an accident has occurred, it would seem to be advisable in future for a party to rope when sleeping near a precipice ; and, to be absolutely secure, the rope should be attached to a tree or rock, if possible at both ends or else in the centre, as it is conceivable that the weight of a falling man coming on one sleeping might drag him also over the precipice.

A LARGE number of fatalities and a larger number of escapes are recorded as having occurred during the past six months ; and Christmas week was especially prolific of disasters. Most of these accidents happened to tourists, more or less experienced, climbing without guides ; and in many instances the victim was climbing alone. Most of them occurred upon minor peaks ; and, while some are on the borderland, the majority cannot be looked upon as Alpine accidents proper. Excepting in the case of our own countrymen, we here record those only which come strictly under this designation.

In the middle of September an Italian artist named Cumani attempted the ascent of Mont Blanc by the Brenva Glacier alone. He has not been heard of since.

In October M. Eugène Sessely, a member of the Geneva section of the S.A.C., was killed on the Sixt side of the Pointe des Avoudruz while trying to make a short cut in the descent.

On Christmas Day three Viennese tourists—Dr. Ludwig Kohn, Dr. Sigmund Patzau, and Herr Robert Pick—lost their lives in a snowstorm on the Gross Glockner. The party had intended to make a guideless ascent of the peak, and with this object in view they left Kals, accompanied by a single porter, at 5 P.M. on Christmas Eve, reaching the Stüdl hut (about 9,000 ft.) at 2 A.M. on Christmas Day. Here the porter left them, and, as they were never again seen alive, the exact nature of the accident can only be guessed at. It seems probable, though, that one or other of the party must have slipped and dragged the others after him, or else that they were either blown over by the force of the gale, or carried down by a small avalanche. Two of the bodies were found about 600 feet, and one about 1,200 feet, below the probable site of the disaster. In one case, at least, death was not instantaneous, for a pair of gloves were found lying together beside the body. The sudden storm which broke upon the Glockner shortly before noon on Christmas Day seems to have made the inhabitants of

Kals apprehensive, and a search party was despatched on the evening of the 25th. Next day a larger party started, but it was not until the fifth day after the accident that the bodies were found and brought down. The guides engaged in the search seem to have behaved in the most praiseworthy manner, and were themselves exposed to very grave risks.

Comment on this disaster seems hardly called for; doubtless it ought not to have happened. All three members of the party were strong and active men between twenty-five and thirty years of age, and all are spoken of as experienced mountaineers. They were not, however, a strong enough party to undertake a guideless ascent of the Gross Glockner in mid-winter. Winter ascents involve risks of which most amateurs know but little, and certainly no such undertaking should be contemplated except under perfect conditions of snow and weather.

On the same day (December 25) another Viennese tourist, Herr Deinzer, lost his life from exposure to cold in an attempt to ascend the Rax Alp. His companion, Herr Lischke, was recovered from the Archduke Otto Shelter some days later: he was severely frost-bitten.

On December 30 two out of three Italian workmen, who were attempting to cross the Theodule, were killed by an avalanche.

The last day of 1893 (Sunday, December 31) witnessed the only fatal accident which occurred during the year to a member of the English Alpine Club. On this day Dr. A. Milnes Marshall, professor of Zoology at the Owens College, Manchester, was killed by a fall on Scafell. The facts were as follows. Professor Marshall, with three companions, ascended Scafell by Steep Ghyll and the Lowman; they descended by Lord's Rake. Near the foot Dr. Marshall separated from his comrades, and, being anxious to obtain a photograph of Deep Ghyll, he proceeded to search for a suitable spot on the ridge which forms the N.W. wall of Lord's Rake. He selected a site, and called to his friends to follow him with the camera. As they were doing so they heard a noise of falling stones, and Dr. Collier, turning quickly, saw a boulder rolling down the slope, followed by the body of Professor Marshall. That the unfortunate gentleman was dead seemed almost certain from the fact that, though the ground was broken, and not excessively steep, he made no attempt to save himself. His friends ran down to the point where the body came to rest, and found that life was quite extinct. No one saw the first part of the fall, so that the exact circumstance which led to this lamentable fatality must always remain matter for conjecture. It seems certain, though, from the injuries received coupled with the direction of the fall, (1) that he fell backwards, probably some eight or ten feet, (2) that the back of the head was the first part of his body to reach the ground, and (3) that death must have been instantaneous. It is probable that he was standing on the boulder when it suddenly gave way; possibly he was pulling himself up by it when it started and threw him backwards. The total distance, from the point where the fall took place to that where the body came to rest, was about 130 feet.

Professor Marshall is spoken of by all who climbed with him as an accomplished mountaineer and a singularly careful climber. He

was in good health and spirits at the time of the disaster, and had been climbing with his usual skill and care throughout the day. The accident occurred, not on the difficult rocks of Scafell, but on what all members of the party regarded as easy and safe ground; a rope would seldom be employed in any similar situation; and, in short, it may be said that the catastrophe was a pure misfortune, and did not result from any neglect of reasonable precautions. The mishap is one which should be classified more with sub-Alpine than with mountaineering accidents proper.

On December 31 last a party of five experienced Italian climbers, four officers of the 'Alpine Companies,' two guides, and three porters started from the Col d'Olen Inn to pass the last night of the year in the newly erected Club hut (Capanna Margherita) on the summit of the Signalkuppe, or Punta Gnifetti. This hut had been occupied since the 30th by two of the Signori Sella, with two porters. One of the nine, Lieutenant Giani, had been ill on the way, but had been able to keep up with his comrades, despite an icy wind, till by evening the whole party were but a short distance from the summit. One of his brother officers, as well as three of the five experienced climbers, finally remained to keep him company when he was too ill and fatigued to proceed further, the rest of his party (including all the guides and porters) going on to the Club hut. Night, however, came on, while the wind so increased in fury that the five below were unable to continue their journey up to the Club hut, while all those in the hut were quite unable to descend to their aid, though well aware that their friends were not far off. A terrible night was spent on the glacier by the five. About 4 A.M. on January 1, by moonlight, the wind having gone down a little, the five began to mount towards the hut, while those in the hut came down to their aid. Four succeeded in gaining the hut, but Lieutenant Giani succumbed while being dragged up by a guide. Two of the four were badly frost-bitten. The Signori Sella and other tourists went down to Alagna and Gressoney, to send up men to help them down, the hut being amply provisioned for several days. On January 2 the four survivors (with whom the guides had been left) were brought down to Gressoney, but the body of Lieutenant Giani had to be left, for the present, in the hut.

The above details are taken from the 'Rivista Mensile Italiana,' 1893, p. 436.

NEW EXPEDITIONS AND UNRECORDED ROUTES IN 1893.

Lepontine Alps.

S. PEAK OF THE PIZZO FIZZO (2,742 m. = 8,997 ft., I. map).
June 17.—Mr. W. Larden, with Christian Almer, jun., went from Binn to the Geispfad Pass by the usual route. Thence they struck S.E. over stones to the W. base of the N. ridge of the peak, the deep notch just right of a sharp rock tooth, and just left of the great rock

shoulder) in which was gained by a snow slope (40 min. from the pass). This ridge or shoulder was then climbed, mainly on its W. face, not far from the crest, to the summit (1 hr.). This consists of a sloping plateau, on the N.E. edge of which is the highest point (no cairn), while further S.E., on the edge of the cliff overhanging a deep cleft separating it from a great buttress, a small ruined cairn, probably built by some hunter, was found.

Both the Swiss and Italian maps figure this peak inaccurately. It really stands just at the junction of the ridge from the Bocca Rossa with that running from the N. Peak (2,762 m.) of the Pizzo Fizzo. To the E.S.E. of the S. Peak is a deep cleft, and beyond it a ridge, which runs S. to the Pizzo Stange (2,417 m.), but the great spur marked on the E. of the S. Peak of the Pizzo Fizzo by the maps is far less important than it would there appear to be. The S. Peak is rather lower than the N. Peak, and is believed not to have been previously visited by a traveller.

OFENHORN BY THE GREAT COULOIR IN ITS W. FACE (3,242 m. = 10,637 ft., S. map). *June 19.*—The Rev. W. A. B. Coolidge and Mr. W. Larden, with Christian Almer, jun., followed the usual route of the Hohsänd Pass from Binn to the edge of the Thäli Glacier. They then mounted over that glacier and the Ofen Glacier to the bergschrund at the foot of the great snow couloir in the W. face of the peak, which is so conspicuous from Binn ($\frac{3}{4}$ hr.). Following first the N. edge of this couloir, then the S. edge, under some rocks, they finally crossed its steep upper portion to the notch just at the S. foot of the highest peak of the Ofenhorn, the summit of which was gained in a few minutes more (1 hr. 10 min. from the bergschrund). The snow was in excellent condition, but two parties which traversed this couloir later in 1893 encountered more serious difficulties. This was the first time the couloir had been scaled.

CHERBADUNG FROM ITALY (3,213 m. = 10,542 ft., S. map; 3,211 m. = 10,535 ft., I. map). *June 24.*—The same party, starting from Devero, followed the Geisspfad Pass route to the highest hut, near a sign-post with a notice as to hunting (1 hr.). They then bore W., and, by grass, the lower moraine, snow, and the great central moraine of the Rossa glacier, gained the highest point of that moraine (1 hr. 25 min.). They then went S.W. across the glacier to the base of the peak, and, losing sight of the great snow couloir which runs up from the Rossa glacier to the N. arête, gained by snow (? new) and rocks a notch, above a great rock tower, on the E. arête, and just at the foot of the peak (50 min.). Keeping up the rocks on the N. face of the E. arête, and mounting a steep and difficult chimney of rotten rock, the party gained the S. face of the mountain high up. Once fairly on the face, they bore to the right, and by slopes of new snow covering loose rocks reached the snowy ridge between the highest point and the spur on which rises the cairn-crowned summit marked 3,108 m. on the S. map (2 $\frac{1}{4}$ hrs.). This snowy ridge was then followed, past the junction of that spur with the main N. arête, to the summit ($\frac{1}{4}$ hr.). The first and only previous ascent from the Italian side was made at the end of August, 1892, by Signori G. Corradi and G. Barbetta, who appear to

have mounted more by the S.E. face ('*Rivista Mensile del C.A.I.*' 1893, pp. 175, 286).

HÜLLEHORN FROM THE RITTER PASS (3,186 m. = 10,453 ft., S. map).
June 26.—The same party went from Binn to the top of the Ritter Pass. Thence they mounted W. along the shaly E. ridge of the peak, passed a first hump (25 min.), and rounded on the Italian side the first of the two great rock teeth seen from Binn, thus gaining its summit (40 min.). (On its E. end a pole was found, probably left by a hunter who was reported to have tried this route unsuccessfully.) The same course was followed with regard to the second tooth, reached in 20 min. more. They then descended into the notch between this tooth and the great shoulder or buttress which bounds the Hülle glacier on the N.E. Climbing up steep, but not difficult, rocks on the Swiss side of this shoulder, they gained that glacier in 1 hr. 35 min. from the second tooth. In 10 min. more they traversed the glacier to the Hüllejoch, between the peak and the Punta Mottiscia (3,156 m., I. map). After ascending the final point of the Hüllehorn by the usual route in a violent snowstorm, they returned to the Hüllejoch, descended by Messrs. Stable and Broke's route of 1891 to the Steinenjoch (35 min.), and regained Binn by the usual route in 2 hrs. 50 min. more.

This route from the Ritter Pass is entirely new. From Binn the two teeth and the great shoulder look very formidable, but this is a delusion.

ÜBER HOHSAND PASS (c. 3,000 m. = 9,843 ft.). *June 28.*—Mr. Coolidge and Almer, wishing to climb the Hohsandhorn on their way from Binn to Tosa Falls, made a variation of the Hohsand Pass, which may be useful to future travellers. From the edge of the Thäli Glacier, instead of bearing E. as usual, they kept up to the N.E., over deep, soft snow-slopes, at the end of which a short gully led to the notch at the S.E. foot of the Hohsandhorn (1¼ hr.). This notch may be named 'Ober Hohsand Pass' for the sake of distinction. Easy broken rocks led up thence to the cairn on the Hohsandhorn (25 min.), which commands a view fine enough to reward the slight *détour*, but has been rarely visited. Returning to the new pass in 10 min., the party went down some rather crevassed snow-slopes, and rejoined the usual route on the great central moraine of the Hohsand Glacier (25 min.).

GRIESHORN (2,966 m. = 9,731 ft., I. map); VAL CORNO PASS (c. 2,930 m. = 9,613 ft.). *June 29.*—The same party took a new and interesting route from Tosa Falls to All' Acqua in the Val Bedretto. From the Tosa Falls inn (enlarged and improved this year) they followed their 1892 route up the Rothenthalhorn* as far as the small lake at the head of the Rothenthal (2 hrs. 25 min.). Thence, instead of ascending straight up a snow-slope, the party (giving up their intention, due to a sudden storm, of retreating over the San Giacomo Pass) circled high round the pasture

* See *Climbers' Guide to the Adula Alps*, p. 183; and the *S.A.C. Jahrbuch*, xviii. p. 113.

basin of the Rothenthal, and gaining the said snow-slope higher up, mounted it to the Bruni Pass (2,765 m., Italian map) of Signor Brusoni's 'Guida alle Alpi Centrali Italiane,' i. pp. 187, 188, which lies between the Grieshorn and the Brunnihorn (1 hr.). Finding, contrary to their expectation, that this pass would not lead them direct to the Gries Glacier (accessible only by a descent and stony traverse), but to the Bettelmatten huts on the Italian side of the Gries Pass, they bore N., over snow (later stones) and a small glacier, to a notch at the E. foot of the Grieshorn (2,966 m.) ($\frac{1}{2}$ hr.), which was named the 'Val Corno Pass,' as it seems to be now. Hence the ascent of the Grieshorn was made in 10 min. by slippery and steep rocks (it is easy from the W.), a small cairn being found on it, though no traveller is known to have before ascended it. The Tosa Falls inn is visible from the summit, and, as the view is in some respects finer than that from the Rothenthalhorn, this ascent ought to become a favourite one from Tosa. Returning to the pass in 7 min., the party descended by steep, shaly slopes to the extensive and crevassed Val Corno Glacier, at the head of the glen of the same name, worked their way down it to the E. end of a green glacier lake in Switzerland (but not indicated on the maps) ($\frac{1}{2}$ hr.), and quitted the glacier in $\frac{1}{4}$ hr. more. Hence a rough path along the left bank of the main stream led to the Val Corno huts ($\frac{1}{2}$ hr.), the route from the Valdäsch Pass* having been joined soon after leaving the glacier. The track from the Nufenen Pass was reached at the Foppe hut ($\frac{1}{4}$ hr.), and followed to All' Acqua (1 hr. 10 min.).

This expedition was very interesting from a topographical point of view, as it revealed serious inaccuracies in the Siegfried map.

This map wrongly marks the highest point of the Grieshorn as rising just E. of the Gries Pass: the Italian map rightly places here the lower point, 2,776 m., the higher lying a good bit to the E. The lower point is, therefore, alone accessible direct from the Gries Pass.

Next, the Siegfried map seems to indicate a branch of the Gries Glacier as flowing over into the Val Corno, and joining—or nearly so—the wide Val Corno Glacier. This may have been the case long ago. At present there is a distinct, though slight, ridge between the two glaciers, which separates them completely from one another, thus serving as a watershed. It is, however, possible that the green lake mentioned above is fed from the Gries Glacier by a subterranean stream. The pass across this barrier bears the name of Valdäsch Pass in recent editions of the Siegfried map.

BANHORN (3,028 m. = 9,935 ft.). *August 30.*—The same party made the first traveller's ascent of this peak. From Tosa Falls they followed the Gries Pass route as far as the Morast huts ($\frac{3}{4}$ hr.), then bore S. on the left bank of the Neufelgiu stream by a sheep track up steep grass slopes and through bushes, to the cross-path running from the Neufelgiu huts to the Ban gorge (50 min.). This path was followed round the hill-side for some distance, until it bore up to the pastures on the S.W., when it was quitted, in order to go over stones

* See *Lepontine Alps*, p. 59.

to the N.E. end of the stone-covered Ban Glacier (1 hr.). This glacier and its moraine were mounted, keeping nearer the left bank, and then shale and a spur led to the notch at the S. foot of the peak, just above the North Banjoch (1 hr. 5 min.).* Thence the S. arête of the peak was climbed, at first by the rotten rocks of the crest, then a chamois path led round on the W. side of this arête, until it was possible to scramble up to the small gap between the two summits. The S. point is rounded and easy; the N. and higher one is gained by a scramble up steep rocks (50 min.). A great cairn, visible from afar, was found on the summit. It was built c. 1882 by two Italian soldiers and Peter Zertanna, the brother of the Tosa landlord; but no later ascent was known at Tosa. The view is extensive, and very curious. The Riale huts near Tosa are seen, and also the Morast plain, but not the Morast huts.

On the descent the party followed the chamois track right round the S. base of the peak, thus gaining the Ban Glacier, not very far from its end, in 1 hr. from the summit. From the cross-path a fair path was found to the sheep track, rather to the E. of the morning's route, Tosa being reached in 2¾ hrs. from the top.

MONTE GIOVE (3,010 m. = 9,876 ft. I. map). August 31.—The same party made the ascent of this peak, probably the first by an English traveller. From Tosa Falls they crossed the Bocchetta del Gallo to the Vannino huts (2½ hrs.), went up to the Vannino Lake in 25 min. by a path high above the right bank of the Vannino stream, and then mounted by cow paths over pastures in a S. direction to the more north-easterly and higher of the two depressions called Passo Busin (2,495 m.) (¾ hr.), and separated only by a grassy mound. Shale and grass slopes (many small precipices being found) led them to the S.W. foot of Monte Giove, not far from the lower Busin Lake (2,371 m.) (20 min.). Gaining the crest of this grassy ridge, they mounted by it and stones to the foot of a steep hillock, then bore N.E. to the great cirque of stones and snow patches at the S. foot of the peak. A wearisome, though easy, ascent brought them to the S.E. ridge, a few steps along which led to the cairn on the summit (1 hr. 25 min. from the lake). The view was very fine, Domo d'Ossola itself being seen.

In the 'Tosa Falls Travellers' Book' there is a record of an ascent of this mountain, on August 11, 1893, by two German geologists, Herren J. R. Zeller and Otto Hug; while in the cairn the cards of an Italian party were found—Signori G. Barbetta and Marco Alberti-Violetti, of Domo d'Ossola—who had been up, with the guide Filippo Longhi, on August 9, 1893. These seem to be the only travellers' ascents yet known. This peak is probably the 'Mons Jubet' of certain old fifteenth and sixteenth century maps and writers. (See 'Alpine Notes.')

Returning to the lake in 40 min., the party went N.W. by sheep tracks over stony pastures to the upper Busin Lake (2,451 m.)

* This pass seems to be the point marked 2,910 m. on the Italian map, and not just S. of that point, as stated in the *Lepontine Guide*, p. 45.

(35 min.), whence a well-marked sheep path leads, by a sharp zigzag, to a deep notch, just S. of a grand range of battlemented crags, and about where stand the figures 2,647 m. on the Italian map ($\frac{1}{2}$ hr.). Hence they went down the right bank of the Rio della Valle gorge, crossing at the second hut to the left bank ($\frac{3}{4}$ hr.), and then following a path which winds round the hillside high above the fine Codelago lake, and gradually descends till it joins the Albrun path above the Crampiolo huts (35 min.), 40 min. above Devero. Few other excursions can make a traveller realise better the extent and the intricacy of the many ranges between the Ofenhorn and the Tosa Valley.

VORDER HELSEN (3,109 m. = 10,201 ft.). *Sept. 4.*—The same party made the second ascent of this conspicuous crag. They seem to have struck the N.W. arête at a higher point than their predecessors,* as from the Kummembord hut they took 1 hr. 50 min. to the crest of the arête (reached at a point just S. of a line of fantastic pinnacles), and only 50 min. thence by easy rocks to the summit. In the cairn were found the names of their predecessors and of their guide, Constantin Kiecher, of Binn, who is probably the man mis-called Pioher on page 518 of the 'Alpine Journal,' vol. xvi.

Tödi District.

SUMVAL PASS (2,778 m. = 9,115 ft.). *July 4.*—The Rev. W. A. B. Coolidge and Mr. F. Gardiner, with Christian Almer, jun., and his brother Rudolf, starting from the new inn at the W. end of the lake on the Oberalp Pass, went by the road and path to the Pass da Tiarms (50 min.). They then bore N. by a sheep track over grass and stones, and, passing by two cairns, reached the upper bit of the Val de Val (1 hr. 5 min.), above the great rock step which divides it into two portions. Snow and stones then led to the pass (1 hr. 5 min.), a deep gap N.E. of the Piz Sumval or Federstock. The height only is marked on the Swiss map.

After a visit to the summit of the Crispalt (3,080 m. = 10,105 ft.), reached by way of the notch on its N.† in 1 hr. 35 min., under a burning sun, from the Sumval Pass, they turned to make the descent into the Wichel glen. This was very rough and steep, lying over loose stones and rocks. The Obermatt huts were reached direct in 1 hr. 5 min. from the new pass, and the Felliücke route followed thence down the picturesque but stony Felli valley, the St. Gotthard high road being gained thence in 2 hrs. 20 min., by a very steep and fatiguing final descent. A good hour more brought the party to Amsteg. The Crispalt peak has been several times ascended,‡ but it does not appear that the pass has been previously crossed. On the pass was found a broken bottle, containing the name of Alfred Breitschmid, of Lucerne, and the date August 29, 1887. Nothing is said as to the starting-point whence the ridge was gained, but it does not seem to have been crossed, as that gentleman makes no mention of any pass in his list of ascents in 1887. §

* *Alpine Journal*, vol. xvi. p. 519.

† *Ibid.*

‡ See *Alpine Journal*, vol. xvi p. 270.

§ *S.A.C. Jahrbuch*, xxiii. p. 673.

TSCHINGELHORN OF MANNEN (2,850 m. = 9,351 ft.). *July 24.*—The same party made the second ascent of this difficult peak, which is also known as the Jungfrauen. Starting from Elm they climbed up to the Martinsloch (2,636 m.) in 3 hrs. 55 min., finding no difficulty at all. Passing through this curious natural opening, they descended to the upper edge of the Segnes glacier in a few minutes, and then skirted by stones and snow, along the S.E. base of the line of pinnacles of which the peak is made up, to the foot of the snow-lope coming down between it and the Ofen. Having mounted by this slope nearly to the gap between the two points named, they struck to the right and took to the rocks (1½ hr. from the Martinsloch). Climbing up a steep face of whitish rocks they skirted several pinnacles successively on the E. or Grisons side, and passed over several shoulders till they reached a point not far from the summit of the last pinnacle but two. The top of the last needle before the highest was attained in 2 hrs. 25 min. from the time the rocks were first struck, the work being severe in consequence of the rottenness and steepness of the rocks, and the constant ascents and descents. The final pinnacle was gained by a climb up its S.E. face in 55 min. more. It is that seen most to the left from Elm—*i. e.* just S. of the Martinsloch. A ruined cairn and broken bottle were found on the summit, no doubt left there twenty-five years before by the only previous party known to have achieved the complete ascent.

Desirous of finding another way down, the party went down the N.E. ridge, easy rocks and stones, to the wide depression immediately over the Martinsloch (25 min.), where a cairn was built, as it had never been visited before. A first needle in the direction of the Segnes Pass was overcome, but the next was so formidable that the party were forced to return to the highest summit, and to follow the route by which they had come up. Owing to the many difficulties of the expedition, and to the length of time taken in overcoming them, the party was compelled to pass the night on the rocks of the last pinnacle but two. Next day they regained the Segnes glacier and returned by the Segnes Pass to Elm. This peak is made up of a grand range of shattered needles,* which are very conspicuous from Elm, just to the right of the Martinsloch. Though the height to be overcome is insignificant, the many unavoidable ascents and descents, and the fact that the highest pinnacle is the most distant from the point at which the climb can be begun, render this expedition very long and tiring. It did not seem possible to take any other route, unless one had a rope of 300 ft. or so long, by means of which it would be easy to descend from the depression above the Martinsloch down a wall of smooth rocks to near the Martinsloch itself.

The first and only previous ascent was made on July 23, 1868, by Herr Schläpfer, with H. and P. Elmer, of Elm. According to the published account of their climb, this party seems to have crossed over

* See the views in Scheuchzer's *Itinera Alpina*, 1723, p. 120, and in the Swiss *Jahrbuch*, x. p. 580, xiii. p. 112.

the summits of all the pinnacles (four or five in number) save the first one.*

Adula Alps.

WEISSHORN (2,992 m. = 9,817 ft.), AND ALPERSCHELLI PASS (2,764 m. = 9,069 ft.). August 14.—The Rev. W. A. B. Coolidge, with Christian Almer, jun., spent two days in exploring the unknown group of Dolomite peaks, near Splügen, called the Löchliberg peaks.†

The first day they started from the village of Splügen and followed the path of the Safierberg to a point beyond the highest Stutz huts, and not far from that at which the path crosses to the left bank of the torrent (1 hr. 25 min.). Crossing by a plank bridge to the left bank of the torrent, they then mounted by very steep grass slopes to a fine spring near the W. end of the Teuri pasture basin (35 min.). They then bore N.W. by sheep tracks over grass and stones, kept on the E. of a great slope of white stones fallen from above, and so gained the last grass patches at the S. foot of the great jagged S. spur of the peak (35 min.). A climb up easy rocks and stones on the W. side of that spur brought them to the W. arête of the peak, a few steps along which led to the highest point of the Weisshorn (48 min.). Hence the ancient church of Thalkirch in the Safien valley, as well as part of the village of Splügen (including the Hotel Bodenhaus and the square in front of it), were visible. A small ruined cairn was found on the summit, probably built by some shepherd or hunter, as at Splügen. Neither in 1892 nor 1893 was any ascent known. Encouraged by their success (for the peak had been reported to be very difficult), the party resolved to go along the ridge towards the E., in order to climb the Alperschellhorn, the highest point of the Löchliberg Dolomites. All went well at first, but the ridge became worse and worse, while many needles appeared on the ridge leading up to the desired peak. A descent was therefore forced to the S.E., to near the S. foot of the Alperschellhorn (55 min.). A very fatiguing traverse along the S. base of that mountain, over steep slopes of shifting stones, led to the gap between it and the Steilerhorn (40 min.), which was christened 'Alperschelli Pass.' Descending by snow and a small glacier (not marked on the map) on the N.E. side of the pass, the party gained a small glacier lake (10 min.), then traversed the shoulder at the extreme N.E. end of the N.E. arête of the Alperschellhorn, and mounted by stones to the Furcla d' Annarosa (2,596 m.) (40 min., slow), on which no fewer than thirty-four chamois were found. This *détour* round the peak had been undertaken with a view of examining it from the N. and N.E. Prospects of success did not seem altogether good, and as it was late (Splügen had only been left at 5.40 A.M.) it was resolved to postpone the attempt. So the party descended the very wild and savage gorge of Steilen to the S.E., finding traces of a path on the left bank of the torrent, but crossing to its right bank before the stream lost itself in a great gorge. The first shepherd's hut was reached in 1¼ hr.

* *S.A.C. Jahrbuch*, vi. pp. 3-17.

† See *Climbers' Guide to the Adula Alps*, pp. 136-8.

from the Furcla, the second in 20 min. more, and the Hinter Rhein Valley near Sufers in 25 min. further. A pleasant walk through a shady wood, N. of the high road, led past the ruins of an old castle back to Splügen (50 min.).

ALPERSCHELLIHORN (3,045 m. = 9,991 ft.). August 15.—The same party, starting from Splügen, followed the Saferberg path till some way below the highest Stutz huts (1 hr.), when they struck down to the right to gain three huts, and crossed to the left bank of the torrent by a bridge below them. Very steep sheep tracks led up, over grass and rocks, to the E. end of the Teuri pasture basin (55 min.). Keeping nearly due N. over grass and stones, they gained the S.W. foot of the Alperschelli Pass and mounted easy stones to that pass (50 min.), thus completing the first passage. Following at first their route of the day before across the shoulder, they left it in 20 min. at a great slope of whitish rocks, higher than the Furcla d' Annarosa. Keeping on the N. side of this slope, and ascending stones, they climbed a rocky barrier to the right, and so gained a hollow with a small glacier in it (25 min.), just at the N. base of the N.E. arête of the peak. Still bearing to the right, they climbed up the rocks on the right bank of a great snow gully in the W. corner of this hollow, but before reaching its head turned to the left, and by some rocks attained what from below looked like a great buttress, but was really the N.E. end of the N.E. arête ($\frac{1}{2}$ hr.). This jagged but easy ridge was followed to the summit (20 min.), an apparent break in it, which had disturbed them the day before, turning out to be a mere optical delusion. The highest point consists of two sharp needles, on neither of which was any trace of a previous visit found, so that this is doubtless the first ascent of the culminating point of the Löchliberg group. The day was very fine, so that the view extended from the Bietschhorn to the Ortler. It was noticed that there were many small glaciers in this group, hidden away in lofty hollows, and so not marked on the Siegfried map. The Weisshorn glacier (of which more anon) is the only one of any size.

Returning by the same route to the glacier-filled hollow, the party then bore N.W. and by steep glacier-polished rocks descended to the moraine at the E. end of the considerable Weishorn glacier (50 min.), which fills a hollow at the N. foot of the Alperschellihorn and the Weisshorn. It is wide, but not long. Traversing this glacier from E. to W. and ascending slightly, they gained ($\frac{3}{4}$ hr.) a large lake, shown on the Swiss map, near which a long halt was made. A short ascent up a slope of stones led to the gap between the Weisshorn and the Krache (20 min.), which may be called 'Krachenlücke.' It is often traversed by sheep. Going down on the other side through two small basins, the party bore far to the left by a sheep track in order to avoid a great gully running down to the Stutz glen on the right, and so regained their route of the day before at the W. end of the Teuri pasture basin, reaching the spring in 25 min. from the Krachenlücke. The return to Splügen by the well-known route took 1 hr. 10 min. more.

In the course of these two days' explorations a good beginning was made in the way of examining the curious Löchliberg group. Of the

peaks not climbed, the Steilerhorn (2,983 m.) looked very formidable from every side, but the Teurihorn (2,975 m.) is easily reached from the E. by a glacier, and is crowned by a huge cairn. The upper slopes of the Pizzas d' Annarosa (3,002 m.) are easy, but they are defended by a very steep barrier of rocks below, which did not look promising. A view of some of these peaks is given in the Panorama from the Piz Vizan, issued with vol. ix. of the 'S.A.C. Jahrbuch.'

For a fuller account of these two days' wanderings, see Mr. Coolidge's paper in the 'Oesterreichische Alpen-Zeitung,' No. 391 (Jan. 5, 1894), pp. 1-8.

PIZ SCHARBODEN (3,124 m. = 10,250 ft.). *August 19.*—The same party ascended this fine point, which had perhaps been never visited since Father Placidus a Spescha made the first ascent about 100 years ago.

Starting from the admirably situated summer hamlet of Zervreila (2½ hrs. above Vals Platz), they followed the path along the left bank of the Valser Rhein to the Lampertsch huts (1 hr. 10 min.), then mounted by a rough sheep track up steep grass slopes on the right bank of the stream from the Nova glen in a N.W. direction to a first pasture basin, and then to a second one (1 hr. 20 min.), into which a considerable glacier stream pours from the W. A rough scramble up steep grassy and rocky slopes, crossing the torrent twice, brought them to a stony hollow, at the head of which was the depression of the Vanescha Pass, indicated by a dotted line on the Swiss map (40 min.). Instead of making for this pass, the party bore N.E. over whitish rocks, snow patches, and shale, to a much higher point on the ridge E. of that pass (40 min.). The summit now towered up on the S.E., and was gained by keeping along the E. edge of the glacier or névé on the W. side of the peak, and close to the base of the N.W. arête. As this edge was largely made up of ice, much time was lost, until the final easy rocks were gained, and soon after the summit (55 min.). The view was very fine, especially towards Vrin and the Vanescha huts, both of which were visible. No trace of any previous visit was found on the pointed summit, and it is probable that no one had been up since Father Placidus, though two mentions of the peak * seem to point to a personal knowledge of the peak, possibly, however, based on Father Placidus' papers. That old monk seems to have climbed the Piz from the N.E., the opposite side to that taken by the 1893 party.

After building a small cairn, the party returned by the same route to the point where they had struck the N.W. arête of the peak E. of the Vanescha Pass (25 min.). Bearing then well to the right or N.E., they crossed shale slopes till close to the rocky rib or spur which forms the N.W. limit of the extensive glacier on the N. and N.E. of the peak. Then keeping always on the left hand of this rib and the glacier, they went straight down, by stones and rocks, to the stream flowing from the Vanescha Pass, on its Vrin side (¼ hr. fast). No less than 2 hrs. were consumed in reaching the Vanescha huts, it being necessary to

* *Itinerarium des S.A.C. für 1874*, p. 43, and Theobald's *Das Bündner Oberland*, p. 167.

descend many grass spurs and to cross many deep ravines before gaining the foot of the grassy knoll on which these huts are situated. The well-known path led thence, in 1 hr. 50 min., to the village of Vrin. The great heat was very much felt all day, especially on the descent.

ALPINE NOTES.

'CLIMBERS' GUIDE TO THE BERNESE OBERLAND.'—The Bernese Oberland volume of the 'Climbers' Guides' series is now in active preparation. It will extend from the Gemmi to the Grimsel, and will probably be divided into two parts, the first of which may, perhaps, be issued in time for the season of 1896. Despite the very extensive literature relating to the snowy regions of the Bernese Oberland, I have already advanced far enough in the classification of my notes, gathered from many sources, to become aware that there are many gaps in the printed records. Hence I venture to address an earnest appeal to all mountaineers interested in this splendid group to aid me by sending me (addressed to Magdalen College, Oxford) their notes and observations. They will be most gratefully received, and utilised as far as possible. Information is specially desired as to short cuts and improvements on the classical routes up the great peaks and over the great passes, as well as accounts, based on personal experience, of the lower and less known snow peaks and passes in this range. Of course, all notices of unrecorded routes and variations, and notes of mistakes in the published narratives, will be most welcome. A first examination of the materials at my disposal suffices to show what a totally unexpected amount of exploration (including not a few virgin peaks) remains to be done in the Oberland—a district supposed to be 'exhausted.' In such an enormous extent of country a really useful and accurate work can only be produced by the efforts of many individual climbers, and, therefore, I trust that I shall be favoured with notes, however apparently unimportant, from every mountaineer who delights in the beauties of one of the grandest regions of the High Alps.

W. A. B. COOLIDGE.

WHYMPER'S 'SCRAMBLES AMONGST THE ALPS.'—The publication of a new edition of this classical work, a copy of which has been presented by the author to the Club Library, is a fact probably well known to all members of the club. The publication was in a high degree successful, the whole edition having been rapidly taken up and exhausted within a fortnight of the date of issue.

THE GRÉPON CRACK.—Opposite we reproduce a photograph of Mr. Mummery in the act of climbing this well-known hard place. The photograph is by Miss Bristow. It is scarcely necessary to observe that access to the crack is not obtained along the line of the rope in the photograph. The traverse is effected some eight feet below the bottom of the lowest point visible in the illustration. When the climber is standing where Mr. Mummery's hands are

placed he is not quite half-way up, and the worst bit is immediately above him.

A NEW AMERICAN MOUNTAIN CLUB.—A club has been founded in Tacoma, Washington, U.S.A., with the object of exploring and opening up the mountain district of the Western States.

THE NEW ZEALAND ALPINE CLUB.—We congratulate our fellow-mountaineers of the Antipodes on a further proof of their activity. Last June they inaugurated what it is hoped will prove to be the first of a series of exhibitions of mountain pictures and photographs. Photographs appear to have predominated. In the evening there was a display of lantern slides, which were explained by members of the club.

BREIL HOTEL.—Lovers of the Italian side of the Alps may be glad to have their attention called to the fact that this old hotel has been renovated and enlarged. There is some talk of opening it as a winter resort in future years.

SNOW-SHOES.—The use of snow-shoes for purposes of amusement is becoming common in Bavaria and Austria. Both the Canadian and Norwegian (*ski*) forms find favour with amateurs. We noticed *skis* offered for sale about Christmas-time in several London shops. On inquiry we have been informed that the best Norwegian maker of *ski* is Larsens Vabenforretning at Christiania. The 'Alpenfreund' of Munich has commenced the publication of a journal, 'Der Schneeschuh,' devoted to the interests of snow-shoers.

THE ASCENT OF THE TÖDI BY THE W. OR SANDGRAT RIDGE.—I had been up the Tödi by the usual route from the Grünhorn Club hut (descending to Disentis by the Porta de Spescha) as far back as September 2, 1876; but as in the summer of 1893 I was engaged in collecting information on the spot for a volume of the 'Climbers' Guides,' it was desirable to repeat the ascent, as my recollections had become rather dim. I had intended to take the same route, but, when crossing in July from the Maderanerthal to the Linththal by the Planura Pass (formerly, but wrongly, called the Claridengrat), the appearance of the W. side of the Tödi was so different from what I had fancied that I was strongly tempted to try it from that direction. I knew that some one had done it by that route long ago, but had got the idea into my head that it was a *tour de force* not to be repeated. But, instead of ghastly precipices swept by avalanches (my idea), we saw a face composed of rocks which could not be very steep, as was shown by the mass of fresh snow resting on them. We accordingly resolved to try the ascent by this route later on, and it was with this intention that, on the afternoon of August 22, I started from Disentis with my two guides, Christian Almer, jun., and Matthias Schuoler, of Disentis, none of the party having ever climbed the Tödi by the proposed route. We went up in 3 hrs. 10 min. to the Rusein huts, marked 1,841 m. on the Swiss map, and there spent a night which was more comfortable than the dirty and dilapidated appearance of the huts promised at first sight.

The Tödi rose immediately above us, and I will describe its appearance in detail, as it will help readers of the following notes. It

presented itself as a rock and snow face divided as follows: Below, there was a rocky hollow, or amphitheatre (in which we later found a small glacier), enclosed between the rocky ridges running respectively W. and S. from the snowy dome which forms the summit. At the head of this hollow, and just at the S.W. foot of the mountain, a rocky rampart supported several snow slopes, nearly filling the upper portion of the space between the two ridges named, which became narrower and narrower towards its summit. It was clear that we could gain the base of these snow-slopes (which, we were told, sometimes disappear altogether), but it was not quite certain what our route would be beyond. (As a matter of fact we skirted along the lower edge of these snow slopes in a N. direction, and then followed the W. arête to the summit.) I have not come across any really good view of this face of the mountain. The best of a poor lot is that at p. 46 of Herr R. T. Simler's excellent pamphlet, entitled 'Der Tödi-Rusein' (Bern, 1863); others are given at p. 584 of vol. xiii. of the 'Jahrbuch' of the Swiss Alpine Club, and in the case of maps and views accompanying that volume. Beck's photograph, No. 101, gives a view of the Tödi from the Planura Pass; in it the lower bit of our route, and part of the higher bit, can be traced. See, too, the panorama from the Titlis, taken by Herr C. Koch, of Schaffhausen, in 1893.

On the morning of the 23rd (a fine day in a series of hot and stormy ones) we started at 3.50 A.M., and crossing first the torrent from the Val Pintga, then the main Rusein stream, followed the ordinary Sandalp Pass route to the highest hut, 2,029 m. ($\frac{1}{2}$ hr.), and for a little way beyond. Gradually we bore up the hill-side on our right (N.E.) by stones, and rounded a grassy shoulder, beyond which stones led to the moraine-covered glacier filling the hollow at the S.W. foot of the Tödi. Crossing it in a N.E. direction, we then mounted above its N. edge by stones and easy rocks. This led us to a point just below a great yellowish knob of rock on the ridge running from the summit of our peak to the Sandalp Pass. Here we halted at 6.15 (2.25 from the huts) for breakfast. (A party coming from the Sandalp Pass could, after rounding the Klein Tödi on its S. side, easily reach this point over stones.) After $\frac{1}{2}$ hr. spent in preparing ourselves for the real climb, now about to begin, we bore S.E. beneath a very conspicuous reddish rock-face (doubtless the 'rostfarbenen Kalkfelsen' of Theobald*), and climbed, beneath it, diagonally from left to right, over rotten rocks. After going some distance in this direction we turned to the left, and, by easy stepped rocks, bore back above it to the left, so as to gain the shelf at its upper edge just at the foot of the great snow slopes leading up direct to the summit. Passing along this shelf without touching the snow, we went up easy rocks (which from below appeared to be smooth, black rocks), and so gained the crest of the great W. arête of our peak, between it and the Sandalp Pass. This was attained at 8.10, in 1 hr. 25 min. from our breakfast place, and here we rested $\frac{1}{4}$ hr. to look round. We knew that the worst part of the climb was now behind us, for the problem, looking from below,

* *Das Bündner Oberland*, p. 63.

was to find a way from the great reddish rock-face to the W. arête. This had proved unexpectedly easy. Of course we might have gone straight up the snow slopes, but they were steep and would have required a good deal of step-cutting, while the main W. arête was easy to gain, and seemed even easier to ascend. This proved to be the case. Easy, if rather steep, shale slopes close to or on the crest of the arête led us up the ridge. The snow slopes on the S. came nearer and nearer to us as we advanced, for they narrow rapidly at their upper end. At length, at 9, we halted for 5 min. to put on the rope, as we had now gained the snowy bit of our arête. I fancied that the true summit lay far back out of sight, and prepared myself for a bout of step-cutting, the snow being hard enough to require it. But what was my surprise when, after only 20 min. easy climb, the neck of a bottle was seen sticking out of the snow, and we found ourselves on the very loftiest point of the Tödi, which is called Piz Rusein! It was only 925, so that we had been but $4\frac{3}{4}$ hrs. ascending the 5,847 ft. which separated us from our hut, seen far below. We had encountered not the slightest difficulty, and it was obvious that our route was the shortest and most direct on the Grisons side of the Tödi. We had made the only known direct route to the highest summit, which rises at the junction of the ridges from the Sandalp Pass on the W. and from Piz de Dor on the S. The rocks themselves, though steep in parts, are broken, and can never be difficult, though no doubt we were fortunate in finding them entirely free from snow. Schuoler, who had often looked at the face we had ascended, was much delighted by our success, and declared that he would take this route often in the future. He informed us that sometimes there were no snow-slopes at all on the S.W. face, while others say that there is only snow on it. Hence it is clear that its condition varies much, but I cannot believe it can ever be really difficult.

We spent over an hour on the summit in the sunshine, enjoying the glorious view; then, without going on to the Glarner Tödi (which I had visited in 1876), descended to the Biterten Glacier by a great track, and in 35 min. left these traces to cross back to the Rusein valley by the Porta de Gliems. In 1 hr. from the top we were in the Porta, and in 2 hrs. 5 min. more, taking (like Messrs. Moore and Walker in 1865*) a short cut to the W. of the tail of the Gliems Glacier, we gained the floor of the valley near a hut just opposite our night quarters. A hot but leisurely walk of 2 hrs. 35 min. more brought us back to Disentis, well pleased with our expedition. Schuoler can be recommended as a good, steady man. He is the only guide on the active roll now at Disentis, whence the Tödi, so he assured us, is but rarely climbed.

That evening some of the Trösch family came over from the Maderanerthal by the Brunni Pass, in charge of a Dutch lady and gentleman. We had met these guides during a recent stay in the Maderanerthal, and Almer naturally related our experiences. They were exceedingly surprised to hear of the route we had taken, and that

* See *Alpine Journal*, vol. iii. p. 164.

it had turned out so easy. They had often looked at it, but had never ventured to try it, owing to its very steep appearance. This excited my curiosity. The one guide at Disentis had never before been up this way, while the best Maderanerthal men had not even tried it. Neither knew anything of our route, having only a vague idea that Zweifel, one of the Linththal guides, had once come down by it. It became more and more clear that quite unintentionally we had done something very unusual. I enquired of many Swiss friends, but the answer always was that they knew of only one previous ascent, and of no detailed description of that ascent. As soon as I came back to my books in October I began to work at them. Not very much have I been able to find out, but, as far as I can ascertain, there has been but one recorded descent, and one recorded ascent, of the Tödi from the W. or S.W. before our climb of 1893. Further, it is not at all certain that either party took precisely the same route we had taken. Hence I have described it at some length, as it is a short and interesting one, though I cannot but think that some one *must* have taken it besides the parties whose experiences I now proceed to narrate.

It is well ascertained that the first party to traverse the S.W. face of the Tödi was that of Dr. J. Piccard (a professor at Basel and member of the Diablerets section of the Swiss Alpine Club), with Joachim Zweifel, of Linththal, and perhaps a second guide bearing the same surname. This party descended from the summit to the Rusein valley on July 14, 1866, and it is well to remember that 1866 was a remarkably snowy year. Unluckily M. Piccard never gave (or at any rate never published) any account of his expedition, while the mentions of it in Alpine literature are very confused. The best authorities* seem to imply that he went down more or less by the crest of the great W. arête, though one† only definitely states this. So far so clear. Other accounts make him to have gone down either direct by the great snow slopes I have mentioned as lying S. of the W. arête, or even by the well-known route from the Ruseinlücke, a window in the S. arête between the P. de Dor and the Piz Mellen. (It is worth noting that on occasion of the 1869 expedition (see below) both Zweifel and Elmer looked out for the 1866 route on the S.W. face, *not* on the W. ridge.) The odd thing about these conflicting accounts is that in each case Joachim Zweifel was with the party, and in each assured them that they were taking his 1866 route. No doubt the confusion rests with the narrator rather than with the guide. The former of these two expeditions was made, July 20, 1872, by Herren A. Hoffmann-Burckhardt and Fritz Hoffmann, the guides being Zweifel and Christian Jann. According to their detailed narrative,‡ they went from the summit a few steps down the snowy S. arête, then down by the central one of three rock ribs to the great snow slopes S. of the W. arête (already often mentioned), and descended these with many precautions to the rocks at their lower end, reached in 2 hrs. from the summit. One hour more took them down rotten rocks and icy gullies to the small glacier at the

* *S.A.C. Jahrbuch*, iv. pp. 10, 609, 612; vi. p. 475; xx. p. 183.

† *Ibid.* xii. p. 314.

‡ *Ibid.* viii. pp. 6-9, 566.

foot of the Ruseinlücke, and in $\frac{1}{2}$ hr. they cleared that glacier. Herr Hoffmann-Burckhardt notes that it may sometimes be better, after the rock rib, to bear right (N.) towards the great W. arête. My view is that this party descended nearly straight down the great snow slopes on the S.W. face, and at the base of these joined our route, leaving it soon in order to go direct to the small glacier, to the N. of which we had gone. Thus this descent seems to have been partially made by the route I took, the W. arête being possibly in a bad state at the time. Save the 1866 expedition it is the only recorded one I know of which has traversed any part of my route. The other party, many in number, captained by Herr Hauser and led by Zweifel, went up to the Tödi, August 23, 1869, after crossing the Sandalp Pass from the Ober Sandalp in the early morning. From their narrative* I should have thought that they went up very much by the 1872 route, though they encountered very great difficulties, and took 8 hrs. from the foot to the summit; but Herr Hauser himself states quite clearly,† followed by Professor A. Heim,‡ who has studied the question carefully, that the 1869 ascent was really made by the Ruseinlücke. Hence it is of no importance for our present purpose.

The result, therefore, to which I have come is that M. Piccard possibly (though not probably), and I certainly, have been over the W. arête, while but one party, that of 1872, is recorded to have taken the route by the great snow slopes between the W. arête and the Ruseinlücke. I should be very glad to receive any additional information relating to this neglected route, which I hope will become more frequented than it is at present. It is a very impressive sight to see, as we did, from the crest of the W. arête, a party on the Sand Glacier directly below us at an immense depth.

It is worth recalling that Hegetschweiler often (in 1819, 1820, and 1822) looked at, and even sent his guides to attempt, this route by the Sandgrat ridge.§ Father Placidus a Spescha, on the other hand, seems to have directed his attention more towards the gaps in the S. arête, now known as the Porta de Spescha and the Porta de Gliems.

W. A. B. COOLIDGE.

P.S.—Since writing the above note I have been fortunate enough to obtain further authentic details as to Professor Piccard's route in 1866. These are taken from an extract from that gentleman's diary (including a sketch map), which he furnished to Dr. H. Dübi (the Editor of the 'S.A.C. Jahrbuch'), who has courteously communicated them to me. M. Piccard (now Professor of Chemistry at the University of Basel) had as guides Joachim and Gabriel Zweifel. The party appear to have descended mainly by the W. arête or its S. slope, though keeping a little out towards the great snow slopes on the S.W. face described above: they regained the crest of this arête where it becomes practicable, *i.e.* above the Klein Tödi, and so gained the foot of the Klein Tödi 3 hours after quitting the summit of the Tödi. Professor Piccard

* *Swiss Jahrbuch*, ix. pp. 207, 211-3.

† *Ibid.* vi. p. 470.

‡ *Ibid.* xii. p. 314.

§ See his *Reise*, pp. 65-8, 72-3, 93-4, 191.

states that the notice of his descent in the 'S.A.C. Jahrbuch,' xii. p. 314, is quite accurate, save that he did not always keep along the actual crest of the W. arête.

Hence his route is, with possibly some small variations in detail, identical with mine of 1893: the 1866 party, therefore, made the first descent by the W. arête, and that of 1893 the first ascent by that route.

W. A. B. C.

THE TURTMANN RIDGE.—The history of the peaks on the ridge N. of the Brunegghorn has always been somewhat obscure, chiefly owing to the fact that the sheet of the 'Siegfried Atlas,' in which they are contained, did not appear before 1892.

The subject was treated briefly by Mr. W. M. Conway in the 'Alpine Journal' * and in the present volume (28) of the 'S.A.C. Jahrbuch' it is discussed at some length by Dr. Gröbli in an article called 'In den Bergen von St. Niklaus.'

The latter writer proves that the peaks climbed in September 1883 by Mrs. Jackson were the Barrhorn (3,621 m.) and the lower of the two Gässispitzen; but when he maintains that the peak climbed on August 5, 1882, by Mr. J. S. Anderson, and described by him † as the Barrhorn, is the Stellihorn (3,415 m.), he is less convincing. It would seem far more probable that it was the peak marked 3,404 m., which lies a little to the N.W. of the former.

Dr. Gröbli's main arguments are two in number, based in the one case on the published account of Mr. Anderson, and in the other on a statement of the guide Alois Pollinger.

He maintains that Mr. Anderson's account suits either of the two peaks in question equally well—or rather equally ill. But this is hard to admit. Anyone who reads it carefully and knows the district will see that, though necessarily inaccurate as to names, it gives a perfectly intelligible description of the peak 3,404; it is only when applied to 3,415 that it becomes nonsense.

It is generally agreed that Mr. Anderson's Gässijoch, from which the ascent was undertaken, is the Brändijoch. ‡ From here he 'descended S. for five minutes to the foot of a snowy couloir on the E. face.' Now it would be impossible in five minutes or any such time to reach from the Brändijoch a point on the E. face of 3,415; Dr. Gröbli himself § took 20 min. between the Brändijoch and the Stellijoch (which is between the two Stellihörner); how, then, could Mr. Anderson have gone well-nigh twice as far in five minutes? † The account of the ascent that follows is an accurate description of 3,404, though it might perhaps be applied to 3,415 also; but the account of the descent will apply to 3,404, and to that alone.

'Descending from the summit for about 200 feet,' says Mr. Anderson, 'they . . . gained a small snowy col between the two peaks, forming the crest of the couloir already mentioned, and one on the W. face of the peak. The rocks on the right side of the latter were descended and the Gässijoch regained from the S.W.' Everything in

* Vol. xvi. p. 43.

† *Alpine Journal*, vol. xi. p. 118.

‡ Cf. *Alpine Journal*, xvi. p. 44. § P. 113, l. 13, of his article.

this points to 3,404. The two peaks of 3,415, if peaks they may be called, are close together and of almost equal height, and there is no col between them 200 feet below either of them; 3,404, on the other hand, has two distinct peaks, one very much higher than the other, and has exactly such a col some 200 feet below the higher. Secondly, the couloir on the W. face of 3,404 leads down to the Brändigletscher, and from its foot the Brändijoch (Mr. Anderson's Gässijoch) would be reached from the S.W. The couloir on the W. face of 3,415 leads down to the Pipigletscher, from which the Brändijoch cannot be reached at all, or anyhow not without climbing a rock wall some 1,000 feet in height. The contention that the descent may have been by a couloir on the N.W. face of 3,415 to the Stellijoch is disposed of by the fact that there is no such couloir on the N.W. face; on that side a snow slope leads down to almost the foot of the mountain, as Dr. Gröbli himself describes.*

Finally, the view from Mr. Anderson's peak, as detailed with some minuteness in his account, seems to afford conclusive proof that the peak in question was 3,404. 'A short distance to the S.E.' of that lies 3,415; 'due south' are the Gässispitzen, and 'still further south' the 'long snow ridge with precipitous east face' of the Barrhorn. From 3,415, on the other hand, there is nothing whatever to be seen to the S.E. nearer than, perhaps, the Mischabelhörner. The theory that the Gässispitzen are meant is surely untenable, as they lie S.W. from 3,415 rather than S.E.

But Dr. Gröbli's chief argument is the second. In the year 1888 he was with Pollinger (who accompanied Mr. Anderson in 1882) on the Festihorn, and from there Pollinger pointed out to him the peak 3,415 as the one Mr. Anderson climbed. There would have been no object, he maintains, for deception, and an error in identification is impossible, owing to the fact that as seen from the E. the two peaks 3,404 and 3,415 are entirely different in appearance. Of intentional deception there is, of course, no question, but that, some six years after making the ascent, Pollinger should have failed to identify his peak is not so impossible. The peaks 3,404 and 3,415 look quite different from the E.; so they do from the W.; but it does not therefore follow that 3,415, as seen from the E., may not resemble 3,404 as seen from the W., and hence lead to confusion; for it must be remembered that Mr. Anderson's party came from the W.; Pollinger was first called upon to identify the peak from the E.

But Pollinger had witnesses. 'Ask Ulrich Almer,' he says; 'he watched us all the time.'† Almer has been asked, and answers as follows. After describing how the party reached the Brändijoch, he writes, 'They went up *that peak next to the col*—that is to say, coming up from Gruben, to the right from the col. I believe they took about 40 or 45 minutes from the col. I believe 40 minutes would be far too short a time to go to the second peak which Dr. Gröbli describes, but certain is that they [that means Mr. Anderson's party] went up the one mentioned above.' (The italics are in the original.)

* P. 133, l. 9.

† Cf. *Alpine Journal*, vol. xi. p. 118.

That is, Almer says it is certain that Mr. Anderson's peak was 3,404. From all this it would seem to be practically beyond doubt that the point reached in 1882 by Mr. Anderson was 3,404, and that the first ascent of 3,415 was made by Messrs. Conway and Coolidge on August 23, 1890.*

There remain to be considered two passes across the ridge, Mrs. Burnaby's Barrjoch and the Stellijoch of the Misses Green.

The former cannot have been the Stellijoch, which is much too far from the Bruneggjoch to be reached in the time mentioned, but was evidently somewhere between the Inner Barrhorn (3,587 m.) and one of the Schöllhörner (the 'stony point' of the account). This identification Mrs. Main has herself accepted.† The latter may have been somewhere in the same neighbourhood, or it may have been the Pipijoch, as suggested in 'A. J.' xvi. 43. In the latter case the points of the compass seem to have gone somewhat astray; in the former the view described is hard to identify.

To sum up, the Barrhorn (3,621 m.) was first ascended by Mrs. Jackson, on September 1, 1883. The same lady on the same day reached the lower of the two Gässispitzen. The Gässispitz (3,414 m.) was first ascended by Dr. Gröbli, on October 10, 1891; the Stellihorn (3,415 m.) by Messrs. Coolidge and Conway, on August 23, 1890; the Aeusser Stellihorn (3,404 m.) by Mr. J. S. Anderson, on August 5, 1882. The ridge has, perhaps, been crossed at one point, between the Stellihorn and the Gässispitz, and all the cols have been reached from the E. side.

E. F. M. BENECKE.

I entirely agree with the arguments and conclusions set forth by Mr. Benecke. That gentleman, with his friends, in 1892, not only went up the two peaks of the Barrhorn,‡ but also climbed the Aeusser Stellihorn, 3,404 m., by the N.W. couloir between its two peaks, *i.e.* by the route taken by Mr. Anderson on his descent in 1882.

Since the above observations were written, Dr. Gröbli has addressed a letter to me, the contents of which he allows me to make public. On October 16, 1893, with Pollinger, he went from the Jungthal Rothorn to the Brändijoch, along the ridge, and then down to the Stelli Glacier. Pollinger was no longer so certain as before that in 1882 he had been up the point 3,415 m., while Dr. Gröbli, after examining the range again, came to the conclusion that Mr. Anderson's description fits 3,404 better than 3,415. As Almer expresses himself so strongly in favour of 3,404, Dr. Gröbli is now ready to admit that the 1882 peak was most probably 3,404. This intricate matter is thus finally settled to the satisfaction of everybody. W. A. B. COOLIDGE.

THE RIDGE BETWEEN THE COL DE PIERRE JOSEPH AND THE COL DE LESCHAUX.—There has always been a singular amount of confusion as to the expeditions made across this ridge, and the ascent of the principal peak on it. Mr. Broome's note on his Col de l'Eboulement § has led to a fresh examination of the subject, which has brought several new

* *Alpine Journal*, vol. xv. pp. 265, 308

† *The Alpine Post*, Feb. 27, 1892, p. 150.

‡ *Alpine Journal*, vol. xvi. p. 263.

§ *Ibid.* vol. xvi. p. 514.

facts of considerable historical interest to light. The details given below are all supplied by the various climbers named, and are therefore perfectly authentic. They may help to clear away the cloud of mystery in which this ridge has long been enveloped. It seems most convenient to arrange the various expeditions in chronological order.

1. First come two exploring expeditions in 1864 and 1866.

On July 25, 1864, Messrs. C. E. and G. S. Mathews, with Michel Balmat (and, for part of the way, Jean Carrier), went from the Monteners nearly to the bergschrund at the foot of the couloir leading up to the future Col des Hirondelles. Considering that depression impassable, and wishing to ascertain the best point at which to cross the range, the party bore N. in the hope of crossing the future Col de l'Eboulement. Balmat, however, advised an attempt still further to the N. The party then rounded the great S.W. spur of the Aiguille de l'Eboulement, went up the glacier between it and the Aiguille de Talèfre, now called the Pierre Joseph glacier, and, by a hardish climb, gained the crest of the great spur named at a point higher than, and overlooking, the depression between the Aiguilles de l'Eboulement and de Leschaux. They did not go on to the summit of the former peak, but returned by the same route.*

On July 7, 1866, Messrs. C. E. Mathews and A. Adams-Reilly, with Michel Ducroz and Michel Balmat, went up the main branch of the Leschaux glacier with the intention of crossing the future Col de l'Eboulement, which they imagined was the Col de Pierre Joseph. But they preferred to climb up to the crest of the great S.W. spur of the Aiguille de l'Eboulement, and went along it to the summit of the Aiguille, of which this was the first ascent. The top was reached in a slight snowstorm. They descended the snowy N. arête of the Aiguille to the true Col de Pierre Joseph, but did not descend the Italian side of that pass, going down the French side to the Monteners. This is the first occasion (so far as is known) on which that pass was reached from either side. The party thus came up from the head of the Leschaux glacier, and went down by the Pierre Joseph glacier.†

2. On August 27, 1866, Mr. C. G. Heathcote, with Michel Balmat and Michel Ducroz, ascended the Aiguille de l'Eboulement from the head of the Leschaux glacier by the route taken by Messrs. Mathews and Reilly, with the same guides, six weeks earlier. They effected a new and direct descent on the Italian side to the Triolet glacier. Leaving the S.E. arête of the peak a very short distance from the summit, they went down a very steep wall of bad rocks, taking 5 hrs. from the summit to the glacier.‡ The line of descent is a good bit N. of that from the Col de l'Eboulement, the two not joining till below

* This is the expedition described in *Alpine Journal*, vol. ii. pp. 287-88, and in M. Kurz's *Climbers' Guide to the Chain of Mont Blanc*, p. 60 of the English edition.

† This is the expedition described in *Alpine Journal*, vol. ii. pp. 364-65, vol. iii. p. 100, and Kurz, p. 61.

‡ This expedition is described in *Alpine Journal*, vol. iii. pp. 103-4.

the foot of the great rock wall, *i.e.* when all difficulties are over. This was the first traverse of the Aiguille.

3. On August 12, 1867, Captain Marshall-Hall and Mr. W. Leighton-Jordan, with Jean Couttet as leading guide, effected a second traverse of the Aiguille de l'Eboulement, but by slightly different routes. On the French side they followed the route from the Leschaux glacier taken twice in 1866, till very high up, when they bore E. to gain the crest of the main S.E. arête of the Aiguille, which they followed to the summit of that peak. They thus struck the S.E. arête far above, and to the N.W. of, the Col de l'Eboulement. They were much surprised to find themselves on the summit of the Aiguille, which from below had been much foreshortened. Descending along the snowy N. arête, they left it, before reaching the Col de Pierre Joseph, at a point immediately S. of a conspicuous rock needle, which rose between them and that pass. A steep descent down difficult, but pretty sound, rocks led them to the steep snow slopes above the bergschrund, crossing which they reached the Triolet glacier. This descent lies rather S. of, but is quite distinct from, that from the Col de Pierre Joseph.* It is the traverse of a peak, and not a pass in the strict sense of the word.

4. On August 4, 1893, Mr. E. A. Broome, with J. M. Biner and Auguste Cupelin, made the first passage of the Col de l'Eboulement, several times alluded to above. His notice of his passage is printed in the 'Alpine Journal,' vol. xvi., p. 514, and he has placed some further details at my service. From the head of the Leschaux glacier he followed the route of the 1866 and 1867 parties for a considerable distance up the S.E. face of the great S.W. spur of the Aiguille de l'Eboulement. After gaining the crest of a rocky shoulder just below the great snow-slope (both well seen on No. 94 of Mr. Donkin's published collection of photographs), the party bore E. by a small snow-slope to the bergschrund at the foot of the final rock wall. Crossing this, they mounted by a short climb up rocks to the desired pass. This is a notch just to the N.W. of a bold rocky pinnacle, the highest summit between the Col de Leschaux and the Aiguille de l'Eboulement.

The descent on the Italian side lay straight down a very steep rock face, the route of the Col de Leschaux not being rejoined till near the foot of the steep snow gully descending from that pass. This new pass is therefore quite distinct from the Col de Leschaux, and the name Col de l'Eboulement seems an appropriate one for it. It is, of course, evident that that name cannot be applied † to what was really the traverse of a peak.

The following outline summary of the various routes described above may be useful, and will show precisely what has been done.

Starting from the Col de Leschaux, there rises N.W. of it a bold rock pinnacle. N.W. of this is the Col de l'Eboulement (No. 4 of the above notes). The ridge then runs N.W. up to the Aiguille de l'Eboulement,

* This expedition is alluded to on p. 60 of Kurz.

† As in *Alpine Journal*, vol. iii. p. 99.

some point on it having been gained by the 1867 party (No. 3). The Aiguille itself was twice reached in 1866 by the great S.W. spur (Nos. 1 and 2), while that spur was itself gained in 1864 (No. 1) from the Pierre Joseph glacier. The N. arête of the Aiguille was descended in 1866 (No. 1) to the Col de Pierre Joseph, and in 1867 (No. 3) to a point separated from that pass by a rocky pinnacle.

The descent on the Italian side of this ridge has been effected at three points. In 1893 from the Col de l'Eboulement, and in 1866 from a point near the summit of the Aiguille de l'Eboulement, both these routes lying down the bit of the E. face of the ridge between the Col de Leschaux and the Aiguille de l'Eboulement. In 1867 the descent was effected from a point just S. of the rocky pinnacle, which rises just S. of the Col de Pierre Joseph.

All these routes on the French side can be well studied on Nos. 94A and B of Mr. Donkin's published collection of photographs. The Italian side is seen on No. 1024 (view from the Pré de Bar huts) of the collection of photographs published in 1892 by M. Attinger, of Neuchâtel; a nearer view is that given on a photograph, from the level bit of the Triolet glacier, taken in 1891 by Mr. F. Baker-Gabb, and kindly sent to me by him.

Two small matters may best be noted here, both referring to the mysterious Pierre Joseph. This name is given to no glacier at all on Mr. Reilly's map, but is bestowed by Mieulet, the French Ordnance map (80600), and Viollet-le-Duc on a small glacier arm just S.W. of the Aiguille de Taléfre. This arm (as seen on Mr. Donkin's photograph) does not seem to deserve a name, while the considerable glacier between the Aiguilles de Taléfre and de l'Eboulement is left nameless. The name properly belongs to this larger glacier, and then only can the title Col de Pierre Joseph be properly given to the depression at the head of that glacier, and between the two peaks mentioned.

The result of the inquiries reported above throws no light on the party which actually first traversed the Col de Pierre Joseph. Messrs. Mathews and Reilly in 1866 were undoubtedly the first to reach the pass from any side, but they accomplished the French side only. I should be very glad to learn who first achieved the Italian side of the pass. In default of this bit of information, I may be allowed to state that the description and times given for this pass in M. Kurz's Guide, pp. 59-60, are those communicated to me by Mr. F. Baker-Gabb, who made the passage of the Col, with his wife, on August 29, 1891. This was, if not the actual first passage of the Col, at least the first which has ever been described. Mr. Baker-Gabb sent me his notes soon after, and also two photographs taken by him from the foot of the final slopes on either side of this mysterious pass.

In conclusion, it is my pleasant duty to express my warmest thanks to the various climbers named in the course of this note, for the information with which they have supplied me. I have carried through the whole investigation at the request of the new Editor.

W. A. B. COOLIDGE.

WINTER ASCENT OF THE DOM.—The first midwinter ascent of the Dom was effected on January 13 by Mr. Sydney Spencer, who has

kindly communicated the following details to us. Mr. Spencer was accompanied by Christian Jossi, of Grindelwald, and Adolf Schaller, of Zermatt. The party started from the Dom Club hut at 4.30 A.M. They found the snow very deep on the moraine, and had some difficulty in getting over the glacier, owing to the dangerous state of the séracs. In fact this bit took over an hour. The Festjoch ridge was reached at 9.30 A.M. Thence the ridge was followed, as usual, to the summit, steps having to be cut up two rather long stretches of blue ice. The snow from the 'Gabel' to the top was in perfect order. The summit of the Dom was attained at 3.5 P.M., and a most wonderfully clear view obtained. The cold was hardly felt at all, owing to the entire absence of the wind. Starting on the return journey at 3.30 P.M., the Club hut was regained at 8.30, the last two hours being done by moonlight. A second night was spent there, and Zermatt regained next day.

THE LIBRARY.—The following additions have been made since October 15, 1893:—

- Barnard (George). Switzerland: Scenes and Incidents of Travel in the Bernese Oberland, &c., &c., drawn from nature by G. Barnard. Twenty-six full-page plates. Folio. London, n.d.
- Monson (Lord). Views in the Department of the Isère and the High Alps. Full-page plates. Atlas. Folio. London, 1840.
- Bonney (Rev. T. G.). Lake and Mountain Scenery from the Swiss Alps. Twenty four photographs from original oil-paintings by G. Closs and O. Froelicher, and forty-eight woodcuts. Text by Rev. T. G. Bonney. Imp. 4to. London, 1874.
- Lamy (J. P.). Choix de Vues en Suisse. Twenty-four coloured plates. Folio. Berne et Bâle, 1819.
- Chantre (Madame B.). A travers l'Arménie Russe. Maps and illustrations. Large 8vo. Paris, 1893.
- Whymper (Edward). Scrambles amongst the Alps in the Years 1860-69. Maps and illustrations. Fourth edition. 8vo. London, 1893. (Presented by the Author.)
- Forbes (Sir John). Sight-Seeing in Germany and the Tyrol in the Autumn of 1855. Map and illustrations. Small 8vo. London, 1856.
- Zeitschrift des Deutschen und Oesterreichischen Alpenvereins. Jahrgang 1893. Band xxiv. Berlin, 1893.
- Richter (Prof. Dr. E.). Die Erschliessung der Ostalpen. 16.-17. Heft. Berlin, 1893.
- Wundt (Theodor). Wanderungen in den Ampezzaner Dolomiten. Illustrated. Berlin, 1893.
- Bonney (Rev. T. G.). The Story of our Planet. Illustrated. 8vo. London, 1893.
- Dent (C. T.). Lose Blätter aus einem Kaukasischen Reisetagebuche. (Reprint from 'Oesterr. Alpen-Zeitung.') Illustrated. Pamphlet.

THE MEASUREMENTS OF ST. ELIAS AND OF ORIZABA.—The latest official information as to the height of Mount St. Elias was given in a paper read before the National Geographic Society of Washington by Dr. T. C. Mendenhall, and has been printed in the magazine of that Society. The results announced by Dr. Mendenhall are of much interest, because there is no doubt that the latest determination of the height and position of Mount St. Elias will be accepted as a very close approximation to the absolute truth.

Last year (1892) the Coast and Geodetic Survey sent J. E. McGrath

and J. H. Turner to the St. Elias region for the purpose of making thorough observations to determine the position and height of the great mountain. During the two years preceding these gentlemen had been engaged in determining the north-eastern boundary of Alaska along the 141st meridian. It was thought they might ascertain that the mountain summit was exactly on the boundary line between the United States and Canada, and it was desired to settle once for all the vexed question of the mountain's height. In 1874 Dr. Dall determined the height of St. Elias at 19,500 ft. In 1890 Mr. Kerr surprised everybody by declaring its altitude to be only 15,350 ft., and in 1891 Prof. Russell's determination was 18,099 ft.

The observations for position and altitude, occupying over two months, were numerous and very satisfactory. The methods were above criticism, the final results closely agreed, and the figures will be accepted by all geographers. The summit of St. Elias was determined to be in $60^{\circ} 17' 35''$ north latitude, and $140^{\circ} 55' 21.5''$ west longitude. The height of the mountain, as computed from trigonometrical measurements made at five different stations, varied from 18,000 to 18,017 ft., and the adopted mean is 18,010 ft.

St. Elias is thus found to be 89 ft. lower than Prof. Russell's figures indicated, 1,490 ft. lower than the computation of Dr. Dall, and 2,660 ft. higher than that of Mr. Kerr. The top of the mountain is nearly five miles inside of the Canadian boundary; and yet it is not given to the British lion to plant his foot on the highest summit of the continent.

In 1891 it seemed very probable that the peak of Orizaba, in Mexico, was a little higher than St. Elias. In 1892 Dr. J. T. Scoville, of Terre Haute, Ind., made trigonometrical observations of Orizaba, by which he determined its height at 18,314 ft. This result surprised the geographers, but the observations were of a character indicating a close approximation to accuracy, and the figures have since been confirmed by the measurements of Dr. C. A. Schott of our Coast and Geodetic Survey. Hereafter St. Elias must figure as the second highest mountain in North America, for the Mexican peak overtops it by about 300 ft.

MOVEMENT OF GLACIERS IN THE HIMALAYAS.—The following note on the movement of glaciers in the Himalayas, by Mr. R. Waller Senior, of the Indian Survey, is extracted from the Allahabad 'Pioneer' of September 20, 1890:—

'During the past two months, thanks to very bad weather, I have had opportunities of conducting a series of rigorous measurements, based on Tyndall's own methods, and give the results below. Three glaciers only were measured, and though the rate of movement of each was recorded during the short period of forty-eight hours, I think the result obtained may be taken as a fair average of the yearly motion.

'Of course some glaciers travel much faster than others, a good deal depending on the slope of the ice streams and on the height of the mountains that give them birth. For instance, the great Sonapani or Dugleh Glacier, which issues from enormous beds of névé lying at steep inclines and cradled among very high hills, where the snowfall is presumably heavy, runs down its valley much more rapidly than

the Shiti, opposite Sissu village, which for nearly its entire course is almost level. The upper portion of the Dugleh Glacier, however, would seem to move faster than the lower during certain seasons of the year, and this accounts for the huge tottering ridges and cones of ice forced up high above the normal level of the stream between the steady pressure of the descending mass above and the more sluggish advance of the lower and more level glacier. Again, the advance mid-stream, as will be seen from the table of measurements, is much more rapid than that of the sides; this fact is amply illustrated by almost every large glacier in Lahaul. The centre of the glacier is always fairly smooth and runs down either in undulating waves or wide expanses of perfectly level, clean ice, whereas the sides consist of tumbled masses and pinnacles of very dirty and distinctly *older* ice forced up into all sorts of fantastic shapes, split and resplit by a thousand crevasses, all curving downwards in the direction of the more rapidly moving centre.

The well-known, though not often visited Pandanlamo Glacier is one of the finest we have here, and though only three miles long forms a noble picture. Springing from enormous accumulations of névé at the base of a fringe of peaks above 20,000 feet high, it descends in great waves of pure blue-white ice for about two miles before it is lost under a coating of débris; a very thin veneer, however, for all along its course glistening walls and domes of ice hold themselves up out of the mass of rubbish. There is no marsh-like valley beyond this glacier, as in the case of the Sonapani and Shiti; the melted ice rushes out of a vast cave in a tumultuous brook which, dashing over half a mile of very steep descent, squeezes itself through a narrow slit in a rock and forms the beautiful fan-shaped waterfall, over 100 feet high, seen from the Sissu encamping ground.

Glaciers sometimes come down with a rush without giving any warning. Several cases have occurred in the memory of men now living, the most appalling of these catastrophes being in 1836, when the big Shigri fell into the Chandra River and caused a flood. In Switzerland the peasants can tell when a glacier means mischief by the disappearance of its ice cave. "The glacier is burying his nose," they say, and look out for squalls. In Lahaul whether the glaciers give any warning or not it is impossible to say; probably there is no one to heed the warning or read the signs; anyhow when a glacier falls the catastrophe is always an unexpected one. Some years ago, I am informed, an old man foretold the collapse of a huge glacier, and was of course laughed at for his pains. Nevertheless in a day or two down it came, crushing an entire village.

' Movement in 24 Hours—in Inches.

	Left Bank	Centre	Right Bank
Sonapani	2·5	12	3·5
Shiti	2·0	9	1·5
Pandanlamo	5·0	15	3·5
Mean	3·17	12·0	2·83
General mean, 6·00 inches.			

'The flank measurements were taken 30 yards from the extreme edge of the glacier. The Sonapani was measured in June, the Shiti and Pandanlam early in September; probably the movement of these latter might be more rapid in warmer weather, for frost has set in and to some extent bound up the snows. 'R. W. S.'

REVIEWS AND NOTICES.

The Story of our Planet. By T. G. Bonney, D.Sc., LL.D., F.R.S.
(London, Paris, and Melbourne: Cassell and Co. 1893.)

THE general plan of this work, the author tells us in the preface, is in its main features similar to that adopted in the 'Principles of Geology'; but a close adherence to the lines followed in that work has not been deemed needful, partly because many things can now be taken for granted which, at the time when he wrote, Sir C. Lyell was obliged to demonstrate completely, and also for the reason that during the twenty-one years which have elapsed since the appearance of the last edition of the 'Principles' fresh discoveries have been made and new theories enunciated which have widened the scope and area of investigation.

Throughout the present volume the author's aim has been to avoid as much as possible technicalities, to make the subject intelligible to the educated reader who has no special knowledge of the various branches of science involved, and to give him an insight into the methods of reasoning which are adopted in geology, and the general conclusions to which these have led.

The first part of the book is preliminary, and treats generally of the physical condition and geography of the earth, the action of air currents and ocean currents and the transfer of heat and cold, the relative depth and elevation of sea and land, the formation of glaciers and ice-sheets, and the different theories thereof. A remarkably simple explanation of the phenomena of tides leaves nothing to be desired in respect of terseness and lucidity. Exception may be taken to the inference of the existence of an extensive antarctic continent which is implied in several passages; for although it is true that the bed of the ocean rises considerably towards the southern polar region, the land which has been discovered is of small extent, and in the opinion of Sir J. D. Hooker, Professor Shaler, and Dr. Croll, there is a strong probability that the ice has accumulated on low discontinuous land, and in the shallow seas between the islands.

The sculpture and moulding of the earth's surface occupy the second part. Air and water are the chief tools; but their action is constructive as well as destructive. Rain and rivers not only carve out the surface of the land, but also transport the material to lower levels and finally to the sea, where the process of rock-making is constantly renewed. Both these agents, moreover, act chemically as well as mechanically, and dissolve lime from the rocks, which is carried away to be re-deposited, mostly by organic agency. But the mechanical effect attracts attention much more than the chemical, although in a

limestone country the latter is soon recognised in the numerous underground water-courses which often are revealed.

In connection with this branch of the subject it is natural that Professor Bonney should have much to say on ice as an abrading agent, and on the long-standing controversy, which has recently been revived, respecting the origin of lake basins. He gives a complete *résumé* of the arguments used by the late Sir A. Ramsay in favour of the hypothesis that the greater number of lakes occurring in districts which have undergone glaciation lie in rock basins hollowed out by the glaciers which at one time filled them. In particular, the lakes of Switzerland and North America, the Norwegian fiords, and the Scottish lochs are cited as examples of excavation by ice, and the fact is beyond dispute that all these districts have been intensely glaciated. While admitting that in some cases under favourable conditions a glacier is capable of making depressions on a small scale, Professor Bonney has from the first strenuously opposed this hypothesis. His reasons are too lengthy to quote, but they depend in great measure on the fact that the sections of valleys and lakes, as regards their sides and floors, present just the outline which would result from the ordinary action of sub-aërial denudation, and also on the further observation that in many places where, according to the advocates of the excavating hypothesis, the erosive force should have been at its maximum, no scooping out of the bed has resulted. The author's position has lately been much strengthened by the observations made by the American surveyors in the lakes of the United States and Canada, the floors of which prove to be somewhat complex valley systems to which the ice theory affords no explanation. Similar investigations in Switzerland have also been attended by a like result.

Another explanation of the origin of lakes has been put forward by the author. During the elevation of a mountain chain, suppose that a valley has been formed the direction of which is approximately at right angles to the trend of the strata forming the chain, which are, on the whole, parallel with it. At a later period differential movements of the parallel zones of rock may ensue, and as these are likely to occur in lines roughly parallel with the range, a zone of rock at some distance from the chain may be raised by folding, while a nearer zone may be slightly depressed. If these movements take place across the direction of the valley, a part of the sloping floor will be converted into a hollow and water will accumulate as the subsidence continues. This hypothesis has the merit of simplicity, and is reasonably consonant with such changes of level and gradual folding of the strata as are produced, not only during the primary elevation of a mountain mass, but also, in all probability, in its later stages. But it would be hasty to conclude that this is the only solution of the problem, although it may be accorded a favourable reception as a provisional explanation.

The last chapter of this section deals mainly with the action of organisms whose secretions form deposits which at a later stage become solid limestones. The foraminifera and coral polyps have been and are yet the most active agents in this work, and one of the former, a

Globigerina, plays now a most important part in rock-making, and by 'a never-ceasing rain' of its minute dead shells on the ocean floor forms a mud similar to that which formerly has been converted into chalk. The rival theories as to the formation of coral reefs are exhaustively discussed, but want of space forbids us to dwell thereon.

In the next part the author turns his attention to the changes which proceed from below the surface, commencing with the movements of the crust, and he describes the phenomena attending the elevation of masses of rock and the formation of mountain chains. The theory most in favour as to the origin of the latter, with the accompanying folding and fracture, is that which attributes their elevation to intense lateral pressure, and it has been greatly confirmed by numerous experiments made by Mr. H. M. Cadell. By exerting great pressure on several super-imposed layers of stratified material of varying hardness, folds and overthrusts have been produced resembling closely those observed in mountain chains, and among these is the so-called fan-structure.

In the chapter on volcanic action prominence is given to the eruption of Krakatoa and the still more recent catastrophe of Bandai-san in Japan. Both appear to have been caused by superheated steam, the latter being simply a gigantic boiler-explosion. The whole top and one side of the volcano (5,800 feet above the sea) were blown into the air in a lateral direction, and Mr. Norman, who visited the scene shortly after the explosion, maintains that an enormous mass of mud, caused by the mingling of the steam and *débris*, must have passed six miles through the air, and then have rushed along the ground for four miles in less than five minutes. The extreme violence of eruptions in recent times may seem at variance with the fact that the earth is gradually losing energy, and that the volcanic phenomena of the present era are generally not of the same frequency or extent as in former times. But it is pointed out, on the authority of Lord Kelvin, 'that a gradual loss of heat resulting in the thickening of the crust may cause the explosive phenomena to be, indeed, more unfrequent and localised, but more violent when they do occur—may produce, in short, the effect of screwing down a safety-valve.'

The geographical distribution of volcanoes is of the greatest significance, and it is pointed out that the chief volcanic regions either traverse or fringe the greater ocean basins, and that the thick deposits of sediment which are formed along the coast lines have an important influence on volcanic activity. The author believes that the source of heat is deeply seated, and he also gives reasons for the opinion that igneous rocks are not produced by the local melting of sedimentary strata, but represent the outer part of the magma of which the globe is composed.

On the 'Internal Changes in the Earth's Crust'—comprising, on the one hand, mechanical phenomena such as cleavage, foliation, faulting and jointing, and on the other, internal changes produced on rocks by the action of water, heat and pressure, either combined or separately—the author is unexpectedly brief. Water is undoubtedly the most potent agent in these alterations, and wherever water or air can penetrate, there chemical change is surely taking place.

The subject of 'Meteors' does not strike one at first as having a direct relation to the early history of the earth; nevertheless some interesting conclusions may be derived therefrom. All the constituents of meteorites, so far as they are known, are substances and elements which exist in the earth's crust. Iron enters largely into their composition, and meteors which consist chiefly of olivine correspond with peridotite, which is an igneous rock allied to serpentine. All these constituents may be regarded as representative of the deeper seated rather than of the superficial portion of the crust. Further, by the aid of the spectroscope it has been ascertained that all the elements which exist in the sun are likewise found in the earth; and results pointing in the same direction are obtained from the stars and even the nebulae. A community of origin of material is thus indicated. This question naturally leads up to the nebular hypothesis as applied to the early stages of development of the solar system.

Among other speculative subjects which are discussed in this most interesting chapter is that of the condition of the interior of the earth below the superficial crust. The average rate of increase of heat near the surface is about 1° F. for every 64 ft. of descent; but this increase goes on in diminishing ratio. According to the calculations of Lord Kelvin, who has assumed an increase of 1° F. for every 51 ft. near the surface, at a depth of about 80 miles the increase would be reduced to 1° F. in 141 ft., and at about double that distance it would not be more than 1° F. in 2,250 ft. In any case, at a depth of from 25 to 30 miles the temperature would be sufficient to fuse most rock. Increased pressure would raise the fusing-point, but not to a very great extent, as at a depth of 250 miles the density would have risen from 2.5 (at the surface) to only 3.1.

The question arises: Is the earth's interior liquid, or after a zone which is melted by the increasing temperature, does it again become solid through pressure, or is it solid throughout? The answer is unsatisfactory. Mathematicians and geologists are at issue on the question—the former inclining to regard the interior as solid, while the latter are in favour of its liquid condition. For the arguments on both sides, the inquirer is referred to Professor Bonney's admirable summary.

Passing over the next chapter, which deals with the succession of geological formations and their varying forms of life, we come to that on the Archæan rocks, a subject of keen discussion among geologists. These rocks, according to recent classification, comprise two distinct formations, the Huronian, certainly of sedimentary origin, sometimes becoming crystalline, and exhibiting a few obscure traces of life; and the Laurentian, an enormously thick series of gneisses, crystalline schists and some limestones, associated with igneous and intrusive rocks of later and uncertain date. In a few of the limestones is found the *Eozoon canadense*, claimed by some as an organism, but possibly of mineral origin. The Huronian formation is considerably the more recent of the two, and is probably separated from the Cambrian epoch by no great interval of time. In the lower part of the Laurentian series gneissoid rocks predominate; upwards the series

becomes more varied, and, on the whole, less coarsely crystalline. Professor Bonney is of opinion that these lower highly crystalline rocks, some of which were igneous and some undoubtedly sedimentary, were originally the first crust which was formed on the incandescent globe. He maintains that these Archæan schists differ altogether in structure from sediments which have been modified mainly by pressure, and that they have been exposed for a lengthened period to a rather high temperature. Water, no doubt, was present, and the rock was subject to pressure, but neither of these two conditions was essential, heat having been the primary factor. In the author's words: 'These schists must have been raised to a temperature above that which a rock attains by being depressed to a depth of ten or fifteen thousand feet below the earth's surface, because there is no difficulty in finding, for purposes of comparative study, Palæozoic rocks—if not any of later date—which have been buried beneath at least that thickness of sediment, and yet have returned to the surface practically unaltered.' And further:—'We seem to be forced to the conclusion that the environment necessary for changing an ordinary sediment into a crystalline schist existed generally only in the earliest ages, and but very rarely and locally, if ever, since Palæozoic time began.'

Probably, however, there was at that time a much more rapid increase of heat in descending below the surface than now exists. Lord Kelvin is cited to show, 'that though the heat of the interior after a comparatively short time would cease to produce any sensible effect upon the surface, the temperature at the end of one twenty-fifth of the whole time which has elapsed between the first crusting over of the globe and the present age would rise 1° F. for every 10 feet of descent.' For some time after the metamorphism of these Archæan rocks, 'foot after foot would be rather rapidly added to the interval corresponding with each rise of a degree of temperature, until, probably, before the world had advanced very far in the Primary era, the conditions had approached so near to those now existing that the depression of a mass of rock to a couple of miles below the surface brought it into a zone of temperature only slightly higher than would be found at the present time.' But it may be objected that the assumption of such a rapid cooling of the earth in the interval of time between the metamorphism of the Archæan rocks and the early part of the Palæozoic era, as would be implied by a diminution of the rate of increase of temperature from 1° F. in 10 ft. to 1° F. in 50 ft. to 60 ft., while since the latter era and down to present times the rate of increase is supposed to be practically stationary, requires more evidence than is yet before us. It is, indeed, probable that our estimate of the lapse of time between Archæan and early Palæozoic times has been hitherto much below reality; but on the other hand, to establish the author's proposition it would be necessary to prove that this period was materially greater than that which has elapsed between early Palæozoic times and the present.

In the 'Building of the British Isles,' while explaining the conditions of each geological formation, an attempt is made to give, as far as present evidence allows, some conception of the contemporary

distribution of land and water, and to indicate the source of the material of the new deposits. Even in some of the later formations this is a task of some difficulty, but in the earliest ages it becomes well-nigh impossible to give a rough approximation.

Only when we arrive at the Devonian and Carboniferous eras do we begin to obtain trustworthy data, and even then in any sketch of the physical geography of the time too many gaps remain which afford undue scope for the imagination. A good illustration of the method of reasoning employed is found in the deduction that in Carboniferous times, and afterwards, an important tract of continental land lay to the north, north-west, and probably west, of the British Isles. The character of the bulk of the sedimentary deposits of that period warrants the conclusion that they occupied the basin of a great delta into which were discharged the *débris* brought down by at least two great rivers from the north-west and west, which from the immense quantity of material transported could only have existed on continental land. Again, in Triassic times, there is strong evidence in the pebble beds and sandstones of the Bunter division that the components of these strata were deposited by streams flowing in the same general direction, and an investigation of the nature of the pebbles confirms this deduction, as many of them represent rocks which are now found nowhere but in the Torridon sandstones of the North-west of Scotland—which must, therefore, have had a much wider extension during that epoch, and probably formed part of the land stretching out far into what is now the Atlantic. On the configuration of the land during later periods, Professor Bonney enters into considerable detail, more especially with regard to the Pliocene and Post-Pliocene epochs. The subject of the Boulder clays gives occasion for a comprehensive *résumé* of the various theories as to their origin, but for these and the glacial phenomena which accompanied them the reader must be referred to the work itself.

On the subject of the 'Building of Europe' it must suffice to quote the author's conclusions 'that many of the European highlands have existed as physical features from very early times: that the present Mediterranean is a remnant—perhaps representative of the deepest parts—of a fairly persistent oceanic area, also of great antiquity and of wide extent: and that in the north-central region (including much of Russia) defined on the north and west by the crystalline masses of Scandinavia, Northern Scotland and Ireland, with possibly the extremity of Cornwall and Brittany, there was a constant struggle for mastery between sea and land, the former on the whole predominating. Further, it may be inferred that in this region the movements in a downward direction produced most conspicuous effects during the Lower Carboniferous, the Jurassic, and the Cretaceous times, while in Europe generally the earth's crust was most markedly folded and disturbed at the end of the Carboniferous, of the Eocene, and of the Miocene periods.'

Among the 'Theoretical Questions' which occupy the closing part of the book, that on the 'Permanence of Ocean Basins and Land Areas' has some relation to the two chapters just noticed. The general

drift of the discussion is to the effect that although what are now continents and oceans have been exposed to vicissitudes, the former having been at times invaded by water and the latter partially replaced by land, there is ground for the belief that there has been a general tendency to a constant condition; and that, on the whole, 'continents indicate regions over which land has dominated from very early days, and that the profounder depths of the ocean basins mark the centres of large areas which have been even more persistently submerged.' Though the other questions raised in this section, particularly that on 'Climatal Change,' are of the highest interest, we are compelled by want of space to abstain from noticing them.

The foregoing rather lengthy, but, considering the scope and importance of the work, hardly adequate notice will give some idea of the magnitude of the task undertaken by the author. That he has succeeded in the aim set forth in the preface admits of no doubt. The descriptive and explanatory portions of the book are remarkably clear, and the style is simple and attractive. It is possible that some of the conclusions on controverted questions may be assailed, and that Professor Bonney may incur the, perhaps not altogether uncongenial, duty of having to defend his position; but whatever may be the ultimate verdict on these points, the book must be regarded as a very suggestive and valuable addition to geological literature. J. E.

Annuaire du Club Alpin Français. Tome xix. 1892. (Paris: 1893.)

The new volume of this 'Annuaire' is perhaps a shade more Alpine than its predecessors, but it still contains articles (*e.g.* on journeys to the Sahara, to Bosnia and Transylvania, to Jerusalem and Cairo) which are fitted rather for a Geographical Journal than a special Alpine Year-book. There is no one article of capital importance in it. That for which it will doubtless be most generally consulted hereafter is the concluding paper of M. Ferrand's elaborate and painstaking series on the frontier ridge between the Mont Thabor and the Petit St. Bernard (just collected in a vol. of 266 8vo. pages, issued by Gratier, at Grenoble). He deals this year with the Rutor and its neighbours to the N. and S., and finds many unexplored corners to describe and visit. (A final supplement to this series is a paper by the same author in the current 'Annuaire de la Société des Touristes du Dauphiné' on the 'Louïe Blanche'). Another article on the Tarentaise is that narrating a careful examination of the range of the Pointes du Bouchet, at the S.E. corner of the Péclet group, by M. P. Lory, the worthy heir of a great name. I may be allowed to point out that M. Lory gives the name of Col du Bouchet to a pass N. of the point 3,267 m., whereas, as far back as 1878, I had given that name to a pass E. of the point 3,056 m.* These may well be distinguished as the S. and N. Cols du Bouchet respectively. M. Garçon narrates his conquest of the Grand Bec de Pralognan by the long-desired route up the W. face, which seems easy enough after all.

Dauphiné fares rather badly. One writer describes the well-known

* *Alpine Journal*, vol. ix. p. 103.

passes of the Cols du Pavé and de la Pilatte, his excuse being (it is a valid one for readers of the 'Annuaire') that neither has before been spoken of at length in the pages of the 'Annuaire.' The narrative of the first ascent of the highest point of the Pointe d'Argentière (near Alleverd), and an account of some small climbs near Villard de Lans, carry us to two of the outlying and less known regions of the Dauphiné Alps.

The Maritimes are the subject of a paper by M. Dujardin-Beaumetz, who profited by the fact that he was doing his military service on the frontier, near Soeipel, to explore some of the lower hills of the French bit of the Maritimes. Intending visitors to those parts should note his remarks as to the way in which that frontier is now guarded by soldiers and gendarmes, so that an unhappy stranger dare hardly leave the Tenda highroad, on pain of imprisonment. Things must be changed indeed since I was in those parts in 1879.

The Pyrenees fare little better than other divisions of the French Alps. Mr. Packe makes his début as the author of a paper in the 'Annuaire' with a description of a second visit to the Pic de Malibierne, twenty-seven years after his first ascent, and naturally compares matters as they were then and as they are now. MM. Schrader and de Margerie give us a useful bird's-eye view of the Pyrenees, accompanied by a very clear map of the whole chain, which (their names suffice to show this) is far more accurate than any hitherto published.

The chief article relating to the Mont Blanc chain has also to do with a map. This is not Herr Imfeld's, as we might have expected, but a proposal for an entirely new survey of that group, made by the MM. Vallot. They propose to issue a map in twelve sheets, on a scale of $\frac{1}{200000}$, based on a new triangulation of the chain. This will be on a larger scale than any of its predecessors, and should be extremely valuable, when ready. But, as the real work began in 1892 only, many years must elapse before it is in our hands, though the sheets are to be issued singly as completed. As a specimen of their intended map MM. Vallot give one of the Aiguilles Rouges, with a text, remarkable for its careful comparison of the names and positions assigned to the various points by the different maps. There is a very outspoken criticism (generally very unfavourable) of the maps issued by the French Ordnance Office, a criticism which a few years ago would certainly have not been allowed to appear in these pages. Most fortunately even French writers are beginning to grasp the fact that their official surveyors are by no means infallible, a truth which I and others have often pointed out, though receiving little thanks for our pains. M. Jansen reprints his account of his observatory on the summit of Mont Blanc from the 'Proceedings' of the 'Académie des Sciences,' and I have noticed very recently in the list of new publications the appearance of the first annual volume of the 'Annales de l'Observatoire Météorologique du Mont-Blanc' (Paris, G. Steinheil), a publication that would have amazed, and delighted, De Saussure. M. Durier gives a history of the great catastrophe which swept away St. Gervais les Bains. The narrative of the advance of the swollen

mud stream seems better done than the explanation of how it came about that the stream was so swollen.

A monograph on the subalpine range of the Bauges, near Chambéry, seems thorough, and may attract persons who like unfrequented corners of the Alps.

Other articles deal with mountains outside France. The Eiger, the Arolla peaks, and the Oberaarjoch all find a place, but need not be further alluded to in these pages. An account of the Spanish Sierra Nevada is more novel than one of the Ampezzo valley, or another of the Vosges and the Jura. A word may be added on M. Martel's fifth subterranean campaign. In the course of it he attained the greatest depth below the surface hitherto attained, at least in a direct line—163 mètres. These investigations read rather like climbing up side down, but certainly lead to queer and amusing adventures, so that the descriptions published by M. Martel and his comrade, M. Gaupillat, are always among the most readable articles in the successive volumes of the 'Annuaire.'

W. A. B. COOLIDGE.

THE WINTER EXHIBITION OF THE ALPINE CLUB.

I. PICTURES.

In quality as well as in quantity the 1893 Winter Exhibition was, perhaps, the best that has ever been gathered together. For this success the Club is indebted chiefly to Dr. W. A. Wills, on whom fell the chief labour of organising the show. The number of pictures sent, indeed, was so large that the excellence of many of the works was in danger of being overlooked, and, further, some of the defects incidental to the very nature of the exhibition were rendered more prominent. Before adverting further to these drawbacks and making suggestions for improvement, we may briefly review the works actually hung.

The variety of style and of treatment naturally became more apparent than ever in a collection so wide in its scope, and comprising works by amateurs as well as artists. Even allowing that the committee showed a wise discretion in accepting not only pictures of mountains but works of 'Alpine interest,' it was evident that the definition had been rather strained in some instances, notably by the inclusion of some works by Signor Segantini. Still, visitors were not likely to complain of having an opportunity of studying these remarkable pictures. Here the artist's claim to admission consisted in little more than the fact that he had chosen his subjects in mountainous countries. In nearly all of them he deliberately set himself difficult problems to solve in the matter of lighting, and overcame them with extreme skill. In the 'Interior of an Italian Studio' the mixture of lights was such as would have delighted the masters of the broader school of Dutch painters. In figures, as in his animal painting, Signor Segantini seemed to show the influence of that remarkable artist Bastien-Lepage; but the methods, the colour, and the treatment

were strikingly original. Exceptional or transient effects of light, however, such as were shown in these pictures, have the drawback that the spectator is unable to gauge their truth with any accuracy. As he is compelled to a great extent to accept the artist's rendering, he not unnaturally desires qualities of composition or drawing in addition; but in these respects the Italian painter's work left something to be desired. The paintings were strikingly bold, but not altogether satisfying.

Hung in a prominent position, and deservedly so, were three large works, all presenting remarkable contrast in style and method. The first of these, Mr. Alfred East's 'Fusiyama,' was an admirable and characteristic work, very harmonious and delicate in colour. There was no painter, we think, represented in the exhibition who would have a better chance of succeeding in the difficult task of adequately rendering the great mountains with their glaciers and snow-fields. Mr. East always shows a perfect sense of atmosphere and is never conventional. No mountain painter will ever make anything of high mountain subjects unless he can infuse some imagination while observing truth of form and modelling; and no painter has the chance of succeeding who does not understand skies. This last qualification Mr. East possesses in an eminent degree.

Admirable too was Mrs. Corbett's large painting of a view in the Apennines. In the treatment of the foreground, of the sky, and of the twilight mist, the example of Professor Costa was very easily to be traced; but this was no detriment. Here, again, the work was full of good feeling and admiration of mountain form. Unfortunately, the picture was too dark to be properly seen under the inadequate conditions of lighting.

Mr. Stott, of Oldham, whose work is always interesting, if sometimes astonishing, sent a large painting of the 'Alps by Night.' Here imagination had rather run riot, and impressionism in mountain painting was carried about as far as it well can be. Some of the rock forms were altogether impossible. Good passages of colour there were, but the picture could hardly be called a success from any point of view. The artist in endeavouring to catch the spirit of the mountains only succeeded in portraying their ghost. The work was inferior to the 'Jungfrau' exhibited two years ago.

Mr. Andrew MacCallum showed a large painting of the Matterhorn, entitled 'After a Blizzard.' The work suffered from including too much in the view. The foreground was subjected to a good deal of arrangement, and the topography in some parts was incomprehensible. It is dangerous to take liberties with the arrangement of so familiar a view. Still, it was a good example of what may be recognised as the poetic school of Alpine painting, a school by all means to be encouraged.

Perhaps the most remarkable work of the whole exhibition was an extremely solid and vigorous view by Professor Herkomer of Snowdon called 'Welsh Mountains.' This work was lent by Mr. J. S. Forbes. To those especially who remember Professor Herkomer's work seen a few years ago in one of the winter exhibitions, it was refreshing to

encounter so admirable a painting by one who understands mountains so well.

A painting of Mount Earnshaw, by Mrs. Kate Clark, of Auckland, was interesting as being the first important New Zealand picture that we have had in these exhibitions. It is to be hoped that this is an earnest that the New Zealand Alpine Club intends to further Art as efficiently as it encourages mountain exploration.

Mr. E. T. Compton, always a welcome exhibitor, is never more so than when he gives his art free play, and does not tie himself down by work designed solely for reproduction. Many of his water-colour drawings this year were quite in his happiest vein, but nothing was more interesting than his 'Evening on the Nabelhorn.' This was merely a study of rocks which at one time or another had fallen in picturesque confusion from a high rocky ridge. It was a scene that might be found almost anywhere, notably in Skye, but the work was finished with the utmost truth and vitality, and the lighting so adroitly managed as to give immediate interest to what might have seemed but a commonplace subject. If artists would make more studies such as this they would less seldom have to draw on their imagination with the result of putting in dull and conventional foregrounds.

Mr. J. MacWhirter contributed two small sketches, good in colour, and Mr. Arthur Severn a vigorous rendering of a storm on the Lake of Geneva.

Mons. Loppé exhibited no recent work, but was represented by some winter studies and a few paintings contributed from private collections. Of the latter, perhaps the most interesting was the 'Aiguille des Charmoz,' dated 1864. The blue depths of the crevasses were perfect in colour. Possibly the hand of time has dealt lovingly with the canvas, and softened down the tones, but still it is only sound workmanship that improves with age. A view of the crater of Etna showed that the veteran artist can catch the spirit of a scene in the mountains wherever he may be.

In water colours the exhibition was remarkably strong. Mr. A. W. Hunt's two beautifully delicate and finished drawings of Thun occupied most worthily places of honour.

Scarcely less admirable were two drawings by Mr. E. Wake Cook, one of the 'Uri Rothstock and the Entrance to the St. Gotthard Pass,' and the other 'A View on the Lake of Como.'

Of several good sketches by Mr. A. H. Hallam Murray, nothing was more charming than the drawing 'On the Waikoto River, New Zealand.'

Mr. Alfred Parson's study of 'Fusiyama' was a good and direct piece of work, painted with characteristic grace, and as successful in colour as any of the remarkable series of Japanese views made by this artist that we can call to mind.

A rare interest attached to Mr. Ruskin's beautifully accurate drawing of the 'Aiguille and Glaciers of the Blaitière.' This was the original study for Plate 31 in 'Modern Painters.' It was not merely the personality of the artist that lent the charm. Though only a pencil sketch, it made one feel at once that the man who could do it

understood the mountains so well as to justify any criticism he chose to pass on those who painted them.

Of several interesting works by Mr. B. J. M. Donne the most attractive was a 'Mont Blanc de Seilon.' Here the artist had deserted for once his familiar chalet on the mountain side and gone up into the higher Alps. The excursion was not wholly successful, as the character of the snow-slopes and the structure of the glacier were alike somewhat missed. The shape of the drawing was unfortunate. It was cut off too sharply at the top, as if from some uncertainty as to how to deal with the sky. Bits of sub-Alpine scenery may possibly pass when painted without any sky at all, but this is hardly permissible in the Upper Alps if the effect of height is to be given.

In works by the late Elijah Walton the exhibition was not so rich as usual. A drawing of the Lower Grindelwald Glacier, painted in his earlier manner, was extremely minute, scarcely less so than a remarkable Himalayan drawing by Mr. Edward Lear which hung close to it. The picture was marred by the cold, monotonous colour and the transparently artificial arrangement of the whole composition. Yet it had certain qualities which showed, not for the first time, how near Elijah Walton came to being one of the greatest of Alpine artists.

For absolute contrast of style it would be hard to point to two better examples than Mr. Stott's dreamy work and Mr. Alfred Williams's wrought-out studies of some of the great peaks. But Mr. Williams more than atoned for the semi-diagrammatic rendering in some of his drawings by an admirable sketch of 'Hallstadt,' one of the best drawings he has ever exhibited. Good throughout, it seemed to us, in the bold drawing of the rocky cliffs, in the water, and especially in the truth of the reflections.

Space forbids us to do more than mention good work by Mr. Colin Phillip, Miss Oliver, and Mr. Tristram Ellis, the latter of whom sent a sketch of Yalta, a study of a picturesque corner of Russia too little recognised by artists, where no difficulty would be experienced in sketching or making studies.

Mr. Charles Pilkington sent some studies made in the Campiglio district, which showed that he could draw as well as climb, and some interesting work was also exhibited by Lord and Lady Monkswell. We must not omit to mention the work of Mr. Albert Stevens, whose numerous contributions were notable for giving, as all Alpine studies should do, the 'plein air' effect as distinguished from the studied suppression of the Impressionist.

Naturally enough the Himalayan group was not neglected. Some good, if rather laboured, sketches were shown by Sir Michael Biddulph, several of which were effective enough and doubtless caught the character of the scenery. A drawing, entitled 'Where Glaciers Descend' from Nunga Purbat, was a little too ambitious in choice of subject. It afforded an illustration that a painter must understand snow and ice before he can hope to draw it, and that an attempt to faithfully transcribe a view when dealing with mountain scenery will never give the effect aimed at. But the chief interest in this department centred in Mr. A. D. MacCormick's sketches. The black and

white studies were excellent, at once graphic, strong, and varied, the effects being hinted at with the utmost skill and never unduly insisted on. Mr. MacCormick was at his best obviously when he had not the engraver in his mind's eye. For instance, the 'Rochester Crags, Balto-ro Valley,' was as direct and vigorous a sketch as could be desired, the effect being obtained by the simplest means. 'The First View of the Golden Throne' was, again, an admirable study. No less meritorious were the sketches in colour, of which those that struck us most were 'Looking Down Balto-ro Glacier,' 'From White Lily Camp,' and the 'Sketch at Abbottabad.' It is to be hoped, however, that the reproductions of Mr. MacCormick's sketches to illustrate Mr. Conway's book will be more successful than the two or three engravings shown. To draw a good illustration for a book and to draw an illustration that will engrave well are, of course, two widely different gifts. Still, the fault in this instance seemed to us to lie with the engraver. We can only trust that Mr. MacCormick will, on the whole, come triumphantly out of the ordeal. A revival of the 'one man' exhibitions, once so attractive at the Club Rooms, could not fail, in Mr. MacCormick's case, to prove popular.

Other excellent black and white work was shown by Mr. Joseph Pennell, but the drawings were unfortunately not framed and could not be properly seen. More justice could have been done to the artist if a few only had been selected and framed, so that they could be properly hung. Many of the studies, too, had been exhibited recently, and might with advantage have been withheld. The committee would do well to exclude all drawings that are not framed, for the more an unframed drawing is appreciated the more likely it is to be spoilt.

Although the pictures almost without exception bore their titles in the corner, complaints of the absence of a catalogue were very general. The time seems really now to have come when the preparation of a catalogue might be undertaken. This would involve sending in the works earlier, or requiring each exhibitor to furnish on a proper form the size and titles of the drawings he proposes to submit. It would hardly be worth while under the present conditions of the exhibition to undertake the labour of preparing a catalogue unless the collection were kept open for a very much longer period—say, at least a fortnight. But this innovation, it seems to us, may well be seriously considered. The change would have its drawbacks. It would certainly be necessary to hire a gallery for at least a week longer than the period during which the exhibition is kept open. It would be necessary also to charge for admission and for catalogues. Further, the new departure would necessarily involve a severance of the picture exhibition from the dinner, but this really would entail little sacrifice. Practically, those who come to the dinner do not spend more than a few minutes in looking at the pictures, and after the dinner it is usually too late to return to the gallery. The expense of the exhibition would probably be covered by the admissions and the sale of catalogues, and the latter would form a memento of the exhibition interesting to the visitor and invaluable to the reviewer. We hope to see the change undertaken next year, if only as an experi-

mental departure. For those who love a crush and the opportunity of meeting old friends over the pictures, the Private View Day will afford an admirable opportunity of undergoing such discomfort as is considered to be properly incidental to any fashionable function. As a further argument in favour of the change, which may not be without its influence, we may mention that in a gallery ladies' dresses can be seen to much better advantage than they are in the vaults of the *Hôtel Métropole*.

Very interesting questions were suggested by the present exhibition, and had time allowed when studying the pictures, or did space permit in writing of them, it might not have been without interest to consider in what respect Alpine painting has really progressed during the last year or two, and how near we are to the establishment of a real school of Alpine painters. One thing to our minds is quite certain, that the artists, who after all have a kind of a right to be considered a little, would welcome the change, and that some new departure would be altogether for the good of Alpine art. At present the results, excellent though they are, are in no way commensurate with the amount of labour expended on the organisation. Owing to the energy of the Club the scope of these exhibitions has extended immensely, and it is quite time for this fact to be recognised.

C. T. D.

II. PHOTOGRAPHS.

The exhibition of photographs this year was marked by a standard of considerable excellence. Most of the various groups of the Alps were well represented.

Zermatt, Chamonix, and Grindelwald were shown in their winter garb. Mr. H. Woolley's and Mr. C. T. Dent's enlargements were from views taken at Zermatt in mid-winter; whilst Captain Abney's series of lantern slides illustrated Chamonix and Grindelwald, and were, from a photographic as well as an artistic point of view, above criticism. Mr. C. T. Dent also exhibited an enlargement of the séracs of the Rosenlauri Glacier, a study of wonderful brilliancy and photographic detail.

One of the most interesting of the enlargements, which received much attention, was the Aiguille de Grépon, by Mr. A. Holmes, taken from the Charmoz. A considerable portion of the route up the northern arête could be seen, and the peculiar perpendicularity and alabbiness of the Chamonix Aiguille was splendidly illustrated. The first difficult part of the climb up this aiguille, which is partly hidden in Mr. Holmes's view, was supplied by a most interesting photograph by Miss Bristow, Mr. A. F. Mummery being represented wrestling with the worst part of the noted 'Grépon Crack;' a portion of this view is reproduced in the present number of the *Journal*. Another bromide enlargement by Mr. Holmes—Mont Blanc from the slopes of the Moine—was a particularly well-chosen subject, the sweep of the glaciers, the buttresses of Mont Maudit, and the black aiguilles making a very artistic picture.

Mrs. Main, as usual, sent a series of excellent views of the Ortler and Bernina group. Unfortunately the view of the traverse of the Pelmo and the ascent of the Ortler having been wrongly described, the unwary visitor was shown a steep couloir and a vast expanse of snow, and asked to believe the party of mountaineers who could be seen on the snow had just completed the traverse of the Pelmo, whilst on the other hand the views of the Ortler group were a set of very effective photographs of a rock traverse. Mrs. Main also sent a series of remarkable winter studies in the Engadine, which showed in a marvellous manner the wonderful beauty of the lower Alps at that season of the year.

Signor Sella's contributions this year were as excellent as his splendid photographs always are, the district represented being the Gross Glockner and the Tyrol. In this connection mention must also be made of Herr Issler's fine enlargement of a view amongst the Dolomites, kindly presented by him to the Club.

Of the aiguilles round the Monteners Mr. Prior sent several delightful views, and Mr. Brushfield exhibited two enlargements of the Fiescherhörner and the Cristallo, excellent examples of the higher Alps. The Piz Bernina was the subject of another fine enlargement by Mr. E. T. Garwood.

There were also a large number of artistic studies of cloud effects, some by Mr. H. Priestman and some by Mr. N. Neruda. The modern mountain photographer seems to be learning that the view of endless peaks taken on a perfectly clear day does not always produce the most beautiful photograph, but when the peaks are draped in mist, and vast masses of heaped up clouds hide the distance, effects may be seen which are far superior to those obtained when the day is brilliantly clear. A particularly picturesque photograph was one by Mr. W. M. Conway, taken from the foot of the Grivola, and representing the dawn behind the great range of the Pennine Alps.

Mr. Anderson sent some very characteristic photographs, taken in Iceland and showing the gaunt basaltic form of the hills in that island.

Perhaps the most beautiful photograph exhibited was that of D2, one of the Sikkim peaks. The exquisite combination of perfect mountain form, snow drapery, and veiling mist showed how peaks in the Himalayas, of only 22,000 feet, are second in beauty to none in the world.

The photographic exhibition was equal in every respect to those of former years, and proved how busy the camera had been in almost every section of the Alps. It was also especially interesting for the large number of excellent enlargements. Indeed, the future mountaineer will soon no longer need to wait for the summer in order to find new routes up a mountain. The perfection of some of the enlargements, coupled with the telephotographic views, will be all that is necessary, and in the winter evenings the ascent will be planned out in all its details.

As an illustration of this latest form of photography the not only excellent but also highly interesting views taken by Dr. W. A. Wills of the Aiguille Verte and other mountains show how much can be done in Alpine photography with the newly-invented telephotographic

lens of Mr. T. R. Dallmeyer. We should, however, have liked to see a few more photographs from the Caucasus, Norway, and Scotland. As there is a very flourishing Scotch mountaineering club surely some of the members might send a few specimens of the splendid effects so characteristic of the land of mist and finely-shaped hills. We regretted the absence of the beautiful atmospheric effects from Mr. Eccles which last year charmed so many people.

N. C.

PROCEEDINGS OF THE ALPINE CLUB.

THE ANNUAL GENERAL MEETING was held at St. Martin's Town Hall on Monday, December 18, at 8.30 P.M., Mr. Douglas W. Freshfield, *President*, in the chair, when the following candidates were balloted for and elected members of the Club:—Messrs. E. Aves, M. Black, H. C. Bowen, H. Downes, E. Mackenzie, H. Priestman, A. H. B. Reynardson, H. J. C. Runge, R. Williams, and J. J. Withers.

On the motion of Mr. C. E. MATHEWS, seconded by Mr. C. T. DENT, the *President*, Mr. Douglas W. Freshfield, was unanimously re-elected.

On the motion of Mr. H. G. WILLINK, seconded by Mr. M. CARTEIGHE, the Vice-Presidents, Messrs. W. M. Conway and H. Pasteur; the Hon. Secretary, Mr. J. H. Wicks; and the other members of the Committee who were eligible—viz. Messrs. G. Chater, G. H. Morse, Alfred Williams, J. A. Luttman-Johnson, H. Woolley, and Dr. W. A. Wills—were all unanimously re-elected.

On the motion of Mr. S. F. STILL, seconded by Mr. J. CURTIS LEMAN, Messrs. Henry Cockburn and G. P. Baker were unanimously elected new members of the Committee, in place of Messrs. T. H. Carson and P. W. Thomas, who retired by rotation.

The *PRESIDENT* then briefly reviewed the more interesting Alpine events of the year. Amongst travels undertaken by members outside the Alps, he mentioned the expedition to the Caucasus of Messrs. Woolley, Cockin, Solly, and Newmarch without guides; that of Mr. Cozens-Hardy to Montenegro, where he explored mountain districts hitherto unknown, and produced a map for which he had received the thanks of the Foreign Office; and the series of expeditions made by the Rev. Walter Weston in the highlands of Japan. With regard to glacier observations, he read a communication from the Indian Government, showing that it had directed copies of the Club's circular to be printed and circulated amongst its officers, with a request that the desired information should be collected; a similar satisfactory reply had been received from the Canadian Government; thus foundations had, he hoped, been laid for reports which would be of great scientific interest. He regretted to have to announce that Mr. A. J. Butler found his literary engagements were so heavy that he was unable to continue to edit the 'Alpine Journal.' The Committee had requested Mr. W. M. Conway to undertake the arduous duties of Editor. For the same reason Mr. Butler was unable to carry to completion the revised edition of Ball's 'Alpine Guide,' but he congratulated

lated the Club on the fact that the Rev. W. A. B. Coolidge had consented to edit the first two volumes, and fully expected to produce the first volume in the spring of 1895, and the second volume very shortly afterwards. He was sure that the unrivalled practical and literary knowledge which the Rev. W. A. B. Coolidge possessed of the Western and Central Alps made him the most competent member to complete the work in a manner that would do justice to Mr. Ball's memory. The third volume, dealing with the Eastern Alps, would be dealt with subsequently. He expressed a hope that some member might before long take in hand a Climber's Guide to the Caucasus, and that the Club would make a grant towards the publication of such a work. He next called the attention of members to Mr. Conway's map of the Karakoram Glaciers, which was hanging on the wall, together with the previous official map of the region he had surveyed, so that everyone might judge for himself of the extent and character of his work. The thanks of the Club were due to Mr. E. Whymper for presenting to the Club a copy of the new edition of his 'Scrambles amongst the Alps.' In conclusion, whilst congratulating the Club that no accident had happened to any member during the summer, he referred in sympathetic terms to the Club's losses through death, and in especial to the 'loss of one of whom we are all thinking at this moment, a name for ever connected with the Matterhorn and Weisshorn. John Tyndall was one of our earliest members, and lately came back to us as an honorary member. Elsewhere his fame will be celebrated as a natural philosopher and as a brilliant expositor of science, but here we look on him most of all as an enthusiastic climber and a friend. Tyndall was an eminently lovable man; whatever he did and wherever he was, he brought with him a spirit of energy and brightness. The Alps did not interest him only as a man of science, they appealed to the imagination and reverence which were among the fine qualities of his character. The mountains had had no more faithful worshipper from the day in 1856 when Sir Joseph Hooker put his first alpenstock into his hands at Interlaken. One of his fears was that a time might come when illness would prevent him visiting his Alpine home. In the sad circumstances of his death it might be permissible to remember that he spent his last summer, as he would have wished, among his beloved mountains. The Committee have requested me to convey to Mrs. Tyndall an expression of their sorrow at the loss of one of the most distinguished men the Club has numbered amongst its members and of their most sincere sympathy with herself.'

On the conclusion of his address Mr. F. O. SCHUSTER proposed, and Dr. CLAUDE WILSON seconded, the following resolution:—'That the best thanks of the Club be presented to Mr. A. J. Butler for his great services to the Club as Editor of the "Alpine Journal" during the period of four years.' This was carried by acclamation, and Mr. BUTLER returned thanks.

Dr. J. NORMAN COLLIE read a paper on a new ascent in the chain of Mont Blanc, which is printed in the present number. Dr. Collie illustrated his paper, not only by lantern slides, but by several admir-

able diagrams and excellent photographic enlargements, showing in a most clear manner the position of the mountain and the details of his route.

Mr. WICKS heartily congratulated Dr. Collie and his companions on their success; he with Mr. Morse and generally one other companion had made not less than seven attempts to climb this Aiguille. On the first occasion, in 1890, after some very bad weather, he started with Mr. Morse and a porter, intending simply to cross the Col du Géant to Courmayeur, but the day being a gloriously fine one they thought it a pity not to combine some peak with the pass, and in their innocence attacked it. They reached the final pinnacle (where Dr. Collie commenced to descend), but finding the walls of the chimney coated with ice they continued their journey to Courmayeur, thus probably making the first passage of the Col du Géant from the Moutenvers without either passing through the ice-fall or traversing the lower slopes of the Aiguille Noire. Two days later found them back again at the same spot, Mont Fréty being almost as good a starting-point as the Moutenvers. The final pinnacle is probably about one hundred feet above the point reached by them, and may be said to consist of three enormous slabs planted endways; the chimney between the two higher ones cannot be climbed in its lower portion, but a position some fifty feet up can be reached between the middle and lowest slab, when a very difficult traverse to the main chimney can be made, and a small ledge reached; beyond this, so far, no one has been. He stated that above this ledge there was thick, hard ice, and that the chimney was not wide enough to wield the axe so as to be able to cut up it. Several times he had been forced to return owing to bad weather, and although Dr. Collie's route had been often discussed, he and his companions always tired themselves first by endeavouring to climb the pinnacle direct, and so were disinclined to try it. On two occasions they attempted to climb straight up the face of the Aiguille, but on both were unfortunate in having misty days. They proved, however, that the nearest routes were the most impracticable, and that the arête on the extreme left (that nearest to the Glacier du Requin) was easy at first, and, though more difficult higher, gave the best chance of success. It was late in the day when they tried this arête, and they had to return when about one hundred feet below Dr. Collie's traverse. In conclusion he thought that, whatever might be the opinion as to the name, it would be a great pity to change Dent de Requin after it had appeared in the November Journal.

Dr. WILSON said that the mountain was one which had interested him for many years. The first attempt upon it had been made by Mr. C. H. Pasteur and himself some years ago, accompanied by a well-known Chamonix guide; they, however, lost so much time in the ice-fall that they abandoned the expedition, and never reached the rocks. Since then he had been three times on the peak, in each case in the company of Messrs. Wicks and Morse. The final rocks were certainly very formidable, and it was doubtful if they were possible. Perhaps the most interesting day he spent upon the peak was when they attempted to join Dr. Collie's route by climbing straight up the face.

This they failed to do, but they learned so much during the day as to feel pretty confident that the point which Dr. Collie referred to as the 'cocked hat' could be reached from below; from this point a traverse could almost certainly be effected. If this route proved possible, the peak could be traversed if ample spare rope were taken to descend the final rocks, and the expedition would be a very fine one. He congratulated Dr. Collie on the graphic manner in which he had expounded the topography of the district.

Mr. MUMMERY and Mr. SLINGSBY added a few words, the latter explaining that he had received very numerous suggestions as to the naming of this peak, but there were objections to all of them. Finally Dent de Requin was proposed; this seemed to him to be appropriate, and he had adopted it in the short record of the ascent which was given in the last number of this Journal (pp. 512-3).

The PRESIDENT said that of course names of mountains to be of real use must be adopted by the Government Survey, and published in their maps. He proposed a hearty vote of thanks to Dr. Collie, which was carried by acclamation.

THE ANNUAL EXHIBITION of Alpine paintings and photographs was held at the Whitehall Rooms during the afternoon of Tuesday, December 19, when the Bijou Orchestra played a selection of music, and throughout the following day. The display was exceptionally large and good; it attracted, as usual, a large attendance. For detailed notice see p. 78.

THE WINTER DINNER was held at the Whitehall Rooms on Tuesday, December 19, the chair being taken by Mr. Douglas W. Freshfield, President of the Club. Upwards of 260 members and guests were present, the latter including Viscount Cobham, the Dean of Westminster, Professor F. W. Maitland, Sir Charles Ruge-Price, Bart., Professor G. Forbes, Mr. Onslow Ford, A.R.A., Dr. Robertson, C.S.I., &c.

An unexpected but very popular toast was given, viz. that of Melchior Anderegg on his retiring from active service as a guide, after being known to members of the Club for at least thirty-eight years. This toast was proposed by Mr. LESLIE STEPHEN, and responded to by Mr. HORACE WALKER, SIR REGINALD CUST, Mr. F. C. GROVE, and Mr. C. E. MATHEWS.

Errata in Last Number.

- Page 510, line 24, for flank, very steep, a slope read flank, a very steep slope.
 " " " 3 from bottom, for 2,010 read 4,010.
 " 511, " 2, for 700 m. = 2,300 read 4,080 m. = 13,380.

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MOUNTAINEERING IN CENTRAL AFRICA, WITH AN
ATTEMPT ON MOUNT KENYA.

BY DR. J. W. GREGORY.

(Read before the Alpine Club, February 6, 1894.)

A FRENCH cynic once remarked that the only two essentials to happiness are a sound digestion and a hard heart. So long as mountain sickness is regarded as partially due to interference with the former, and Zanzibaris are the only means of transport, there are few things which illustrate the wisdom of this remark better than mountaineering near the snow-line in Central Africa. The food on the march is never of the choicest, and when water boils at 20° or more below normal, difficulties are introduced which are beyond the comprehension of an ordinary Zanzibari cook; while anyone given to weeping over the woes of others would simply wash himself away in sorrow for the sufferings his followers have to endure when exposed to the cold of the higher peaks.

The difficulties in the formation and provisioning of camps at high elevations in Equatorial Africa may long delay the ascent of the two mountains which we know to present serious obstacles in themselves: these are Mawenzi, the lower of the two peaks of Kilima Njaro, and the volcanic core which forms the summit of Kenya. As Mawenzi repelled the repeated attacks of Meyer and Purtscheller, the still higher Kenya is not likely to yield without a systematic siege.

When I left for the East Coast of Africa in November, 1892, I did not anticipate that I should be going near any snow-clad mountains, or even any that would present serious difficulties of ascent. I therefore took only a light ice-axe, for use on grass or talus slopes, and which made subsequent

work in step-cutting slow and laborious. The expedition to which I was attached left England for the purposes of exploration around Basso Narok (Lake Rudolph), the sources of the Juba and Central Somaliland; I had been allowed to join by the kind permission of the Trustees of the British Museum. The expedition, however, broke down on the Tana, and as after it was disbanded on the coast I had five months of my special leave of absence still unused, I resolved on a visit to the great East African Rift Valley, the plateau of Laikipia and Kenya; for in this region I hoped to be able to work out the problems which I had gone to study, as well as in the Basso Narok district.

Kenya was the most interesting mountain from an Alpine Club point of view that I was able to explore, but before reaching it, I made a number of other ascents which may perhaps be recorded here, as they had not been previously done by Europeans, and some certainly not by natives.

The first was Mbololo, the highest summit of the Ndi group in the Teita mountains. The ascent of this was made from a camp at Ndi, 130 miles from Mombasa. The camp is at the immediate foot of the mountain, and is situated at an elevation of 2,550 ft.; the altitude of the summit, which is crowned by a clump of trees with an undergrowth of the common English bracken, is 5,640 ft. The ascent, which is very easy, was made by the north crest.

The next opportunities for climbing were offered by a group of mountains for which there is no one name, but which I propose to call the Iveti Mountains; they ought to have a general name, as both topographically and geologically they form a definite mountain system. I here ascended three peaks in addition to that at Nzoai which had been previously done by the officers of the Railway Survey. The first is the bold pyramidal mountain marked on the maps as Kilungu Peak, but the real name of which is Etwa. Its altitude is 6,120 ft.; it was ascended by the south-east ridge, and the return was made down the south face.

The two next ascents were the mountains beside the pass of Kwathomi or Kwazomi. That to the east is known as Tetutha; the ascent is easy, and just below the summit of the ridge is a broad cattle track. The height is 6,050 ft., while the summit of the pass is 4,750 ft.

Iuni lies on the west of the pass and is a more interesting climb; especially as one can easily get some good crag work near the summit. The ascent, however, from the col which leads to the adjoining valley of Mbani, is a pleasant half-

hour's scramble up a steep slope and over easy rocks. The summit is 6,780 ft. in height.

Longonot is one of the largest and most perfect of the volcanoes in the East African Rift Valley. It is situated in latitude $0^{\circ} 54' S.$ and longitude $36^{\circ} 28' E.$, upon a ridge that here crosses the valley and separates the basin of Lake Naivasha from an old dry lake-basin to the south. Thomson, after a heavy climb, reached the rim of the crater on the south-east side, and found it there so narrow that he was able to sit astride with a leg on each side. He could not, however, reach the highest pinnacle on the west wall, which he estimated at 700 ft. higher; my calculations make it 750 ft. I made the ascent from a camp on the summit of the pass from the Kedong to Naivasha. I started, accompanied by two porters, at 8 o'clock; we skirted the south side of the marsh from which we obtained our water, and then crossed a series of lava terraces to the base of the cone; twenty minutes' scramble up this took us to the rim of the crater. This is here a broad smooth path, trodden literally into a cinder-track by herds of zebra which doubtless visit it in the dry season. The ascent of the pinnacle was in places troublesome, as we had to make several traverses across steep cliffs of ash to avoid teeth upon the crater wall between the pinnacle and the point where we had struck the rim. The higher parts of the crater, moreover, are densely covered with woody scrubs, through which we had to force our way. To reach the final tooth of the pinnacle we had to traverse a narrow wall of soft volcanic ash, which the morning's rain had made very slippery. In spite of my cutting steps, this was too much for the nerves of the Zanzibaris, and I gained the summit alone, two hours after reaching the crater rim. The summit is 9,350 ft. high, and the rim of the crater where I reached it 8,600 ft.

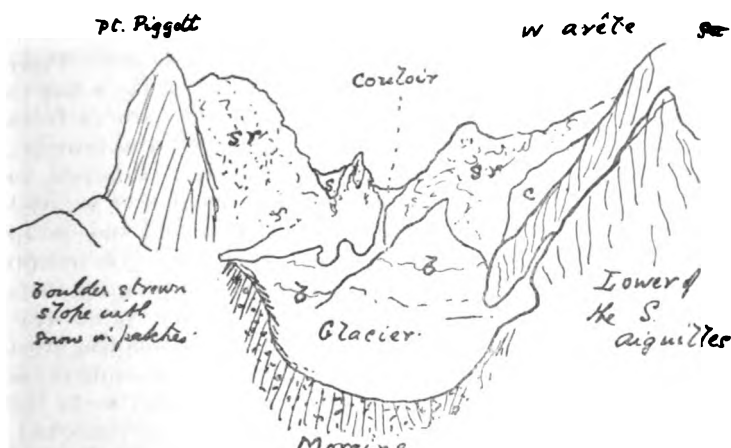
The next ascent was of a tabular peak that forms the most conspicuous object to the east of the camping ground of Kariandusi, at the south end of Lake Elmeteita: it is a lava-capped summit, rising to the height of 7,650 ft. As I cannot find any local name for it, I propose to refer to it in subsequent descriptions of its geological structure as Kilima Meza (Table Mountain), as that name will be readily recognised by porters. We reached the summit by a chimney in the west face of the lava cliff. The view across the barren steppes of the 'rift valley' to the fault-face on the western side, of the picturesque group of old craters at the south end of the lake, and the wooded valleys and rugged scarps

of the Dondole mountains, of which this peak is the most conspicuous member, well repays the ascent.

These peaks, however, are of little interest in comparison with Mount Kenya, the greatest, if not still the highest, of African mountains. It was first discovered by a missionary, Krapf, in 1843, when he saw it for a few minutes from the Wakamba settlement of Kitui, which is 90 miles to the S.E. He was at once told he was either a liar or a fool by some English geographical critics, and its existence was not finally accepted until Mr. Joseph Thomson saw it across the steppes of Laikipia in 1883. This explorer was then in command of an expedition fitted out by the Geographical Society, which included among its other objects a visit to Kenya. The Masai, however, were very troublesome, and before Thomson reached the foot of the mountain he had to abandon his camp and escape under cover of night. Four years later it was visited by Count Teleki, who ascended to the height of 13,800 ft., and has given us the only definite information we possess about the structure of the mountain. Unfortunately, however, Count Teleki was more accurate as a shot than as a topographer, for, according to him, the mountain is a well-preserved volcano, having a crater of from 4 to $4\frac{1}{2}$ kilometres in diameter, and from 200 to 300 metres deep, while the central and highest 'spitze' is only a tooth on the north wall of the crater. Moreover, from his collections and descriptions, it was concluded that the mountain was a dome of phonolite, and resemblances were discovered between it and the phonolite peaks of Central Europe. This was certainly not what was expected, and the position of Kenya in the African mountain system remained very uncertain. The subsequent expeditions sent out by the Imperial British East Africa Company, unfortunately, were unable to contribute anything materially to our knowledge of the mountain. Mr. Piggott first saw its eastern face early in 1889; the three Europeans of the Tana expedition, Captain Dundas, and Messrs. Bird Thompson and Hobley, attacked it from the south, but failed to penetrate the forest zone, and had to return at the height of 8,600 ft. Dr. Peters passed near it in 1889-90 with the German Emin Pasha Relief Expedition, but he did not set foot upon it. His companion, Lieutenant von Tiedemann, has given a sketch seen from the S.S.E. In 1892, Lieutenant von Höhnel, who had previously accompanied Count Teleki, but had then been detained by illness in camp at Ndoro during the latter's attempted ascent, made a second visit to the

district with Mr. Astor Chanler. The whole of the heavy expenses of this expedition, which was fitted out on a most extensive scale, was borne by Mr. Chanler. It was hoped that it would work out the topography of the N.E. side and possibly gain the summit. This expedition, however, has ended disastrously. Lieutenant von Höhnel was pounded into jelly by a wounded rhinoceros, and we have recently heard that all Mr. Chanler's porters have deserted, leaving him with only eighteen men in the district of Daicho.

This forms a complete record of previous visits to Kenya, and shows how limited our knowledge of it is in comparison with that of its great rival, Kilima Njaro. As this is near



KENYA FROM OLD MORAINES TO THE NORTH.*

s Snow. sr Steep rock cliffs with snow on ledges. c Corrie glacier. b Bergschrund.

the coast—in fact, is occasionally seen from the sea—as the road to it is easy, and the neighbouring tribes fairly friendly, it has been visited by more than a hundred Europeans, and carefully explored. So far, it was not known whether Kenya had a well-preserved crater or was a volcano in the last stages of decay, or whether there were any glaciers upon it; while the estimates of its height varied from 18,000 to 23,000 ft.

I therefore resolved to attempt to reach it, to settle these and other points in connection with the mountain; but I assured everyone on the coast that I had no intention of completing

* It must be observed that the couloir and Point Piggott are much further away than the moraine and rock-slopes of the S. aiguille.

the ascent, as I guessed from Peter's photograph that it was not likely to yield to anyone climbing alone, and I knew none of the Zanzibaris would venture upon the snow.

I first saw the peak from a point about 90 miles to the W.N.W.; but I was obliged then to go south into the country of the Wakikuyu to purchase food. Having obtained this, we marched northward on to the plateau of Laikipia till we reached the watershed between the basins of the Tana and the Nyiro, for here the steppes rise highest into the forest zone. There I left most of my men, and all the loads except my tent, collecting gear, and food; and having served out ten days' rations and packed up a few days' reserve, we started about 8 o'clock on the morning of June 24, 1893. My plan was to form a second camp above the forests, just on the limits of the zone in which firewood would be sufficiently abundant to supply the men; to form a third, a day's march above this, which could be kept supplied with stores from the lower camp; and finally, a fourth for myself and possibly one man, as near the snow-line as possible. I hoped to traverse the forests in two days at most, as it was evident that the men would suffer considerably from cold and damp during the passage through these. It took us, however, more than three days of very hard work, and judging from the experiences of Captain Dundas and his party, we were lucky to have got through so soon. The work was the most trying I have ever experienced. The forests consist of splendid trees, Junipers, *Podocarpus*, &c., which rise to the height of from 100 to 150 ft. At first they are unbranched, but when they have cleared the undergrowth they branch profusely, and the branches, together with the trailing and climbing plants that cross from tree to tree, form a dense canopy overhead. As the forest zone appears to be nearly always covered in mist, this roof is always kept saturated with moisture, in spite of being drained by the steady drip of rain that falls from it. The undergrowth is therefore kept moist, and accordingly is very dense. Things are at their worst in the bamboo zone, which occurs from the height of 8,000 to 10,000 ft. The bamboos are often 50 to 70 ft. in height, and 40 ft. is very common. They are packed together as closely as park railings, and as their stems are often 4 ins. in circumference, the labour of cutting a way through them is very severe. In places one can take advantage of the elephant tracks, but it is frequently necessary to leave these, and hew a way through the jungle. Fallen trees continually lie across the way. These are often

so rotten that when one steps upon them the bark gives way, and one is plunged to the waist in rotten slush or dust: in the latter case one gets out fairly quickly under the stimulating influence of the jaws of a swarm of ants. Progress was considerably delayed by the necessity of stopping every hour to light fires in order to warm the porters, who found an hour of this work at a time as much as they could stand. The cold was so severe that even then the hands of the man who carried my instrument-box were so numbed that he was unable unaided to release his hold of the handle.

The ascent was very slow as the gradient is low, and on the evening of the second day I was disappointed to find that we had only gained 1,700 ft. We were then upon a ridge, on either side of which we could hear the roar of a mountain torrent. On the third day we made a desperate effort to get out of the forests, but at nightfall we were still within them, and the bamboos were at their thickest. Early next day, however, my spirits were cheered by the discovery of some erratics, which I whacked at with my hammer, overjoyed by the change from hewing at bamboos. A little later we entered a clearing and saw the sun, our acquaintance with which we renewed with three hearty cheers. We had a few patches of forest yet to traverse, but we dashed through them for the open Alpine pasturages that we saw above. Having reached these, we rested for awhile, the men revelling in the sunshine, and I examining an old moraine, till some clouds rising ominously from the W. warned us to hasten on to camp. We were here at the foot of the bare rock-slope which can be recognised in the sketches of Von Höhnel and Hopley; it was identified by the former as the crater wall; and by the latter, who saw it from the S., as an east and west ridge. It is, however, a rock-slope bared by the icfall of the former sheet glacier that once covered the mountain. While scrambling up this the storm broke upon us, and we had to fight our way through a blizzard of sleet and hail. I had gone ahead to find out a camping ground, but was recalled by a signal shot, and found that the porters had collapsed and the headman been compelled to pitch camp on a frozen peat swamp. As soon as our shelter tents were up and fires lighted I went on again to find a better place for the second camp. When I returned I found that one of the porters had not come in, and though the askaris, whose duty it was to see that no one lagged behind, and my plucky headman, had all tried to go back to the rescue, they had been unable to face the

storm. I rushed back at once, and after an hour's search found the man half covered in snow, lying on his load, nearly frozen to death. A little brandy revived him, but he was too weak to stand, and I had to carry him up to camp, which, as he was a light weight, I was fortunately able to do. I told him next morning he was a fool to have sat shivering there, and that he ought to have left his load and come on when he could have done so. 'What! leave my load without my master's order to do so! How could I?' was the man's reproachful reply. Such is the stuff of which a good Zanzibari porter is made!

Next day my own tent, collecting gear, and some food were carried 1,700 ft. higher up, and there pitched amid some agglomerate crags on the crest of the ridge that separates two of the main valleys that run into this part of the mountain. The men, except four, returned to the lower camp. From this point I made excursions into the ridges of the south side of the mountain in order to get on to the line of Hopley's view and reconnoitre the central peak. The principal of these excursions was the ascent of a summit that forms a conspicuous landmark, and may be clearly recognised in the sketch made by Von Höhnel from Ndoro. I therefore name it after him—probably the most accomplished cartographer and draughtsman who ever visited Equatorial Africa. I may as well here briefly refer to the nomenclature proposed as far as is necessary for the present paper. The lake that lies in a cirque at the west foot of Mount Höhnel, and the valley that opens from it, are also named after Lieutenant von Höhnel. As the valley to the north of this is that in which Count Teleki reached his highest point, I name it, the tarns on its floor, and the ridge at its head, after this plucky Hungarian explorer. The main south-eastern valley I propose to name the Hopley Valley, as it is the one for which this geologist was making through the forests of the southern slopes. The lakes in this valley I name after his colleague, W. Bird Thompson, Esq. The main southern glacier is named the Lewis Glacier, after the late Professor Carvell Lewis.

On the attack on Mount Höhnel I took with me my favourite Zanzibari porter, Fundi Mabruk by name. We crossed the Höhnel Valley, up a cwm with some fine phonolite crags at its head, and then along the next valley to the north till we reached a col that leads over to Lake Höhnel. From this point we followed up the west ridge. This was at first easy walking, but we soon came to the steeper arête, which

was broken by a series of cliffs of lava. Fundi did not like the look of these, but after a little tempting he consented to be roped, and I went ahead up a chimney. Having taken my position, I had another little argument with Fundi, accompanying it by a few gentle pulls on the rope. Thus exhorted, he climbed up about 10 ft., but his foothold having once given way he was done, and I had to lower him to the bottom. No arguments would induce him to try it again. 'That is all very well for wajuxi (lizards) and Wazungu (white men), but Zanzibaris can't do that,' was his verdict. 'You'd better come back, master,' he sadly cried. 'I promised to follow you anywhere in Africa, but how can I when the path stands up on end?' But he would not come on, so there was nothing for it but to order 'Fungua' (Unrope), pull up the rope, and continue the climb alone. At several places vertical lava walls bar progress on the arête, but traverses were not difficult, and I finally gained the summit of the south-east arête, which I had reached by a traverse.

After examining the ridges around this peak, and considering the various lines of attack on the central summit, I commenced a descent to Lake Höhnel. The climbing here was at first rather difficult, as the face of the mountain consists of a series of almost vertical lava cliffs, separated by slopes of volcanic ash and talus. The snow on the ledges was in a very unstable condition, and rendered the traverses along them highly interesting. Moreover, as a heavy cloud had settled over the mountain, it was impossible to pick out the best way down, and I was frequently compelled to retrace my steps and strike out blindly in a fresh direction. I was therefore not sorry to reach the lower part of the cliff, where the slope was more gradual. The stones that I threw ahead gave warning of my approach to the next series of lava cliffs, while the snow here was only in patches, so the descent became more rapid. I boiled the thermometers upon the lake shore, sketched its outline, examined the glaciated rock barrier that supports it, and then hastened back to camp by the valley to the south of that named after Von Höhnel.

Next day I had a small shelter tent moved across to the north side of the west arête of Mount Höhnel, and there pitched under the shelter of some groundsel trees (*Senecio* n. sp.) in the valley in which Teleki reached his highest point. After pitching the tent I left a porter to collect firewood and light a fire, while I went on with Fundi to

explore a set of old terminal moraines that cross the valley like a series of railway embankments. Thence we ascended the old icefall just above the point where the valley bends abruptly to the N., in the hope of reaching the glaciers. Here, at the height of a little under 15,000 ft., I had a slight attack of unquestionable mountain sickness. As I did not like to confess this to Fundi, preferring he should be kept in absolute ignorance of the existence of such a complaint, I became absorbingly interested in the study of a coarse andesite erratic, one part of which happened to form a very comfortable seat. The usual afternoon snowstorm then threatened, and I was glad of this excuse to return to camp.

I was anxious for an early start next day, and so turned in at sunset, after having in vain tried to persuade Fundi to wear boots and leggings. He tried them on, but flatly refused to wear them; as he also declined to allow me to nail the soles of his feet. I think his hide would have held them.

I knew I should have to go for the snow alone. Our night's rest was disturbed by a furious storm, and at two in the morning a slip of the newly-fallen snow above our camp knocked the wall of turf and stones in upon the tent. As the door was blocked at the same time, we had to tear up the loosened pegs and pull down the tent before we could escape. The fire had been put out and our goods buried. As it was impossible to re-pitch the tent, there was nothing for it but to wrap ourselves up in our blankets and jump about to keep warm till the morning. As the temperature was 28° below freezing, and it was snowing steadily, our efforts in this direction were not rewarded with the success they deserved.

This meant a late and a breakfastless start next day, but as the storm had cleared, and there was no time to lose, I set off with Fundi at daybreak, though I did feel very 'cheap.' We soon reached the old icefall, and then, turning again to the E., crossed a long steep talus slope, scaled some lava crags, and gained the snout of the southern glacier. This is surrounded by a set of five small concentric terminal moraines; the last has been broken through by the glacier, so that this is now re-advancing. Here we lighted a fire and boiled the thermometers, obtaining data from which I have subsequently determined the altitude as 15,580 ft. Fundi here begged for permission to return, as, in the first place, he objected to touching the ice, and further complained that his head was aching, his stomach was very bad, he felt very sick, and his legs would not do what he told

them. It was obvious that he was suffering from mountain sickness, so I took up his share of the firewood, instruments, and the pegs which I had had cut to serve as 'pitons,' and let him go back. Before doing so, however, I fear I completely ruined any reputation for sanity that I might have had left by executing a Masai war-dance on the snout of the glacier, and then pelting Fundi with snowballs.

I had hoped to ascend by the right moraine of the glacier, but this was too risky, owing to falls of snow and rock that thundered down on to the glacier from the great rock-face of the larger of two great aiguilles. I was, therefore, compelled to stick to the left or south moraine, along which I kept till above the ice-fall of the glacier. The snowfield here ran away to the S., and I risked a traverse across it to the main south arête of the mountain. The snow was then in fairly good condition, and the crevasses were well marked by droop. Along the arête, however, things were not nearly so comfortable, and especially near some large hot-plates the ice was excessively rotten. By hitching the rope in a loop over rocks, and then pulling it up after me by a cord, I managed, however, to screw up my courage to the continuing-point. After this the arête became steeper and broken; step-cutting was necessary, and an occasional traverse to the west round the base of the séracs and of the 'gendarmes' that occasionally rose through the ice. At length the arête became corniced as the east face became almost vertical, and the wind swept the snow up the névé field and over the edge of the arête. The face of the rock-slope was swept by falls from the cornice, so that it would have been too risky to have attempted a traverse below it so late in the day; the snow on the E. was in too bad a condition to be traversed alone, so there was nothing for it but a return. I had long recognised the hopelessness of a single-handed ascent, but I did want to get up a few hundred feet higher so as to have been able to make a traverse on to the east arête, whence I hoped for a view of the north-eastern part of the mountain. If I could have passed the cornice I should, no doubt, have been able to do this.

The voice of prudence that urged return was on this occasion vigorously supported by the fact that the usual afternoon snow-storm was blowing up from the W., and that a more than usually Alpine appetite was reminding me that by this time my men would have dug out my breakfast.

The snow-storm having broken before I had got off the

arête, and hidden my footsteps, I did not care about crossing the glacier again, so I kept along the arête till I reached a col which leads from the left moraine of the glacier over to a broad tarn-strewn valley, which descends toward the S.E. Here I stopped for a few minutes to try to light a fire to boil my thermometers, and to build a small stone man of some blocks of coarse andesitic rhyolite. But the fire would not burn, and so I picked up my goods, ran down the moraine, and reached camp very exhausted two hours before sunset. The fact that I ordered 'Fannya jocola tiari' (Make food ready) as soon as I was within shouting distance of the camp, and settled down at once to as hearty a meal as I dared to make, seemed to relieve my men very considerably; but I could estimate from the anxious way in which they watched me their deep concern about my mental welfare.

Next day I had another attempt by the west arête, hoping that, as this was all crag work, I should be less handicapped by going alone. I ascended the ridge that forms the north wall of the Teleki Valley, and along this to a couple of tarns whose existence there I had previously suspected; they are on a col and have their outlets in different directions. A steep scramble over a snow and talus-strewn slope led to the west arête. The most striking feature here is a prominent rock pyramid, which I propose to name Point Piggott, after the Administrator of British East Africa. The south and west faces of these might have tempted a Mummy, but they did not tempt me, and I was able to tear myself away from their charms without much mental struggle; so I crossed to the north side in the expectation of finding this less precipitous than the others, and thus being able to work round to a col or, rather, brèche between Point Piggott and the final peak. If I could reach this I hoped to be able to gain the summit of at least the former. I was, however, stopped by some vertical cliffs, which it was hopeless to attempt to scale. I tried to turn them, also, to the N. by a traverse, which the loose snow made rather uncomfortable, though I had always plenty of hitching points for the rope. Progress was very slow, and from this side I could not see that the daily snow-storm was blowing up earlier than usual. My retreat was too late; the storm broke while I was still on the arête, and rendered some rocks I had skipped over in the morning quite impassable. I had to descend a gully on the N. side in order to try to reach some level snow lower down; this, however, was so pulverulent that I could not cross it, and

had to continue down the N. face, which, but for the rope, I could not have done. The result was, I missed the paper marks I had left in the morning, struck the wrong valley, and did not get back to camp till 3 hrs. after dark. Here the news was waiting me that my men at the lower camp were ill, and I had to descend next morning to doctor them up. Owing to the treachery of my cook I found the camp deserted, and only after some hours' hunt in a drenching storm of rain and hail did I succeed in tracking it to a place in a wood 1,400 ft. lower down. The cook, who had been taught writing in a mission school, had forged an order in my name to the headman to descend to a lower level. I found, however, that the men had been suffering so severely from mountain sickness, hæmorrhage of the lungs, and frost-bite, that I was bound to return at once to a climate more like that of the steaming atmosphere of the coast plain and Zanzibar.

In a day and a half's hard marching we reached our camp at Ndoro, and after a full day's rest there started on the return journey to the coast.

It may perhaps be advisable, in conclusion, to refer briefly to one or two points in connection with mountains which may be of general interest to mountaineers.

In the first place, as to mountain sickness. I was very careful never to refer to the existence of any such complaint to any of my men, but Fundi showed undoubted symptoms of it at the height of 15,400 ft.; he remarked several times afterwards of the funny feeling that came over him, but this, with the impossibility of boiling his beans, and the remarkable property that Kenya water had of turning solid at night, he attributed to the witchcraft that possessed the mountain. I had a slight touch of the complaint myself at the elevation of a little below 15,000 ft., but this was doubtless the result merely of over-fatigue and indigestion, arising from badly-cooked, coarse food. The only occasion on which I had previously experienced the complaint was in an ascent of Gray's Peak, which, though the highest mountain in the Rockies, only reaches to 14,300 ft. It arose on this occasion solely from lack of food, as, owing to the breakdown of our transport, my sister and I had a very long march, and 28 hrs. without food; she collapsed absolutely at 13,000 ft., and I felt rather bad during the last 300 ft. of the ascent. Climbing in the Rockies, however, I always found far more exhausting than in the Alps, a fact which is probably due to the excessive dryness of the air. The fact

that, though with much rougher conditions of life, I reached 3,000 ft. higher without inconvenience in the damper air of Kenya, may show that this factor is not without importance.

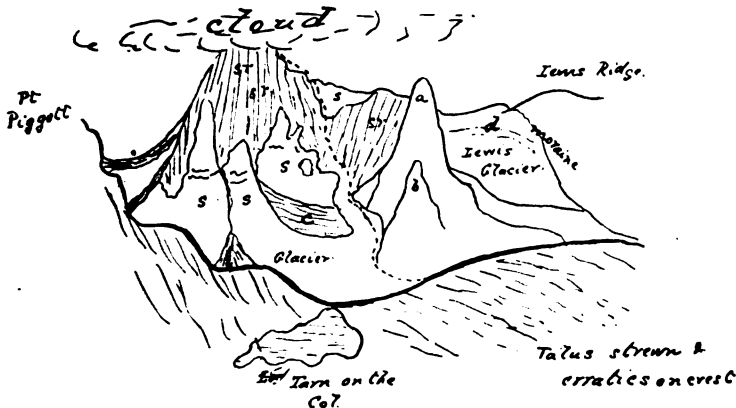
Snowcraft.—The conditions of both snow and ice are very different to those in the Alps. There is a much greater proportion of pulverulent snow, and this renders progress very slow, while the necessary beating it is a terribly fatiguing task. Both snow and ice are very treacherous, a fact which is doubtless due to the sudden and extreme variations in temperature; for, owing to the height, the nights are excessively sudden, and, in estimating the force of the midday sun, it must be remembered that the summit is only eight miles south of the equator. The result of the alternate freezing and thawing is the formation of layers of clear, hard, brittle ice with others that are soft, spongy, and friable; the snow may be hard and well crusted, and then half-an-hour's exposure to the sun renders it soft, sodden, and slippery. The conditions are not unlike those described by Whymper, from Ecuador; Güssfeldt, from Chili; and Meyer, from Kilima Njaro. There is not so much snow, of course, as Mr. Whymper met with, but there is more than Meyer found on Kilima Njaro, and what there is has to be treated with great care.

The climatic conditions doubtless, also, will explain the great irregularity of the snow-line—if I may be permitted to use this objectionable expression—though this is aided by the fact that the snow seems to require a lower gradient of rest. I had hoped to measure the rate of the glacier movement, and it was really for this object that I had provided boots and clothes for my man Fundi. I expect that the great diurnal range of temperature will give the glacier an unusually rapid motion.

As regards future ascents, unless someone has a good run of fine weather, I doubt whether a much higher point on the mountain will be reached than I gained, except by a well-equipped, full-sized party. Two men would be safer, but would probably be a little slower than one, except for occasional pieces where rope-work and step-cutting are required. In an interview, recently published in the 'Daily Graphic,' a man has stated that, as far as he could tell from a sketch that he had seen, Kenya was just like Mont Blanc. I cannot say that I was myself struck by the resemblance, and possibly the man had a sketch of Kibo in his mind. As is usually the case with the eroded cores of volcanic craters,

a zone of almost vertical cliffs renders the summit difficult of access.

I might point out that Mawenzi, the lower and older of the two peaks of Kilima Njaro, successfully resisted all the attacks of two such trained climbers as Ludwig Purtscheller and Hans Meyer, who only reached the height of 16,830 ft. Kenya is much higher than Mawenzi. The most remarkable thing about the two mountains is that at the elevation reached on Mawenzi Meyer found no snow, but there is plenty 1,400 ft. lower on Kenya; though this mountain is on the Equator, while Kilima Njaro is over 200 miles to the S. Meyer's visit was, of course, in the dry season, while I was there in the rains; the snow, moreover, occurs



KENYA FROM THE WEST.

a, b The two S. aiguilles. c Ice-cliff at end of one of the corrie glaciers. d Line of crevasses at ice-fall. s Snow.

much lower on the western slopes of Kilima Njaro than on Mawenzi.

I think that three or four climbers could gain the summit, and the accompanying sketch shows the route which I should have attempted if I had had a companion, but the wide stretch of snow-covered glacier to be crossed at the start rendered it impracticable. If an attempt should be made, a camp should be fitted up near the end of the middle glacier, and reserve stores placed on the rocks near its head, before the actual ascent. If the rocks above the glacier could be surmounted, it would doubtless be possible to reach the summit, though the climb would not be an easy one. The formation of these high camps would, however, be difficult,

as the Zanzibaris cannot be depended on above the forest zone, and only reliable men could be trusted to follow a leader through these.

As far as time goes, an expedition to Kenya might be managed from London in six months, giving one month on the mountain. The cost would be somewhat heavy, as it would be unsafe to go with less than forty armed men, and the local authorities would advise a much stronger force. The number quoted to me as the minimum was 100, while 150 were recommended; but having got through safely with forty, that is, at least, a possible number, though it leaves no room for accidents.

The honour of reaching the highest summit of German East Africa has been gained by Germans, and two climbers from that ubiquitous nation are now on their way to Kenya; they, however, have plenty of other work on their hands, as they are going to solve the social problem and accomplish a few other trifles on their way. If this paper should stimulate any members of the father of Alpine Clubs to scale the crags of the highest peak in our African dominions, my paper will have been amply repaid.

THE FIRST ASCENT OF THE MITTELHORN.

[By the courtesy of Mr. H. Cockburn we are enabled to reprint in these pages the following very interesting and important account of the first ascent of the Mittelhorn (the loftiest of the Wetterhörner), the existence of which Mr. Cockburn made known to students of Alpine history by his note in 'Alpine Journal,' xvi. p. 402. It appeared on pp. 1055-6 of the 'Athenæum,' No. 940, the number for November 1, 1845, and is due to the pen of Mr. Speer, the hero of the climb. From the article itself we learn that some allusion to this ascent had been already made in the 'Athenæum.' Mr. Cockburn informs us that a summary of the article given below is to be found in 'Chambers' Journal,' January 24, 1846. It may be added that a paraphrase of Mr. Speer's narrative is given on pp. 163-186 of a small compilation, entitled 'Alpine Adventure' (from 1881 onwards, 'Alpine Climbing'), and published by T. Nelson & Sons in various editions, dated 1878, 1881, and 1882. The ascent is mentioned by Herr G. Studer in his 'Panorama von Bern' (1850), p. 233; by the 4th edition (1851; *not* by the 3rd, 1846) of Murray's 'Handbook for Switzerland,' p. 78; by Mr. Wills, 'Wanderings among the High Alps,' 1st edition (1856), p. 271; and in 'Alpine Journal,' vol. viii., Appendix, p. 78. Some elucidations have been inserted (within square brackets) in the text by Mr. Coolidge, who has added at the end of the reprint a note on the various interesting questions of Alpine history raised by Mr. Speer's description of his adventures.]

Ascent of the Wetterhorn, or Peak of Tempests, in the Valley of Grindelwald, Canton of Berne.

(The Berne and Zürich journals lately announced, as we mentioned at the time, that the central peak of the Wetterhorn, one of the highest of the Oberland Alps, had been ascended by a young Englishman, the son of Dr. Speer, a feat heretofore unaccomplished, and not unattended with difficulties and danger. We have now the pleasure to publish an interesting personal narrative of that bold and hazardous adventure.)

The valley of Grindelwald, situated in the heart of the Bernese Oberland, may justly be considered the formidable rival to that celebrated spot, above which tower the mighty masses of the monarch of all European mountains. It is true the valley of Grindelwald cannot boast the presence of a Mont Blanc; it is, nevertheless, the chosen spot around which the giants of the Swiss Alps have, as if by one consent, grouped themselves. This valley is bounded, on its southern aspect, by three mountains, the loftiest (if we except the Finsteraarhorn) of the whole range; to the right, the *Klein Eiger*, or Great Giant, in the centre the *Mettenberg*, surmounted by the *Shreckhorn* (Peak of Terror), and on the left the three summits of the *Wetterhorn* (Peak of Tempests); the first of these (the *Eiger*) attains the height of 12,000 [13,022] ft.; the second, 13,291 [13,250] ft.; the last, 12,194 [12,166] ft. above the sea level. Seen from the village of Grindelwald, they present the appearance of stupendous walls of rock, rising almost vertically for thousands of feet: these vast black masses are surmounted by fields of snow and ice; which, in their turn, are crowned by the peaks themselves: whilst in the wide intervals which exist between the three mountains, the two seas of ice, known as the superior and inferior glacier of Grindelwald, stream downwards into the valley to the very verge of the pastures. Until of late years, the prevailing opinion existing in the vicinity was, that these summits were inaccessible; experience had however (in the case of one of them) proved the contrary; the *Shreckhorn*, or Peak of Terror, having been surmounted by three Swiss naturalists, with their guides,* after imminent danger and difficulty, leaving on the summit an undeniable

* [This is the ascent of the *Lauteraarhorn*, August 8, 1842, by MM. Desor, Girard, and Escher von der Linth, with Leuthold, Bannholzer, Madutz, and two other guides. See Desor's *Excursions*, vol. i. pp. 532-558.]

proof of their achievement in the shape of a flag-staff,* which I afterwards discovered through a telescope: nevertheless, by the guides and chamois hunters of Grindelwald, the exploit is not yet credited.

The untrodden summit of the central or great peak of the Wetterhorn had therefore been to me an object of ambition for months; it was not, however, until my arrival at Interlaken that I proceeded to obtain information as to the feasibility of my project. Among the resident guides there were but two really good mountaineers; by one of these I was informed that all attempts to scale the Wetterhorn from Grindelwald had proved fruitless, and that the only plan was to proceed to the Grimsel (situated at a height of 6,570 [6,149] ft.), on the southern slope of the great chain, and that there we should meet the most intrepid and adventurous mountaineers of the Bernese Oberland—the men by whom the invincible Jungfrau had been successfully conquered some years previous. Acting, therefore, on the advice of this guide, whom I immediately engaged, we started from Interlaken on Thursday, July 4, at six o'clock in the evening, arriving at Grindelwald at 10 P.M. I now had full opportunity of satisfying myself as regards the previous statement of the guide, which I found to be perfectly correct. We therefore left Grindelwald the following morning [July 5], proceeding across the Great Shiedeck, passing at the foot of the glaciers of Schwartzwald and Rosenlauri, &c., and arriving at Meyringen at eight in the evening. We again left at an early hour [July 6], continuing our course up the valley of the Aar, passing the villages of Im Grand [*i.e.* Im Grund, or Im Hof] and Guttanen, and the celebrated fall of the Aar at Handeck. Since our departure from Meyringen the ascent had been continual, as was now testified by the frequent occurrence of large patches of snow, and by the presence of a few immense avalanches, which impeded our course in no trifling degree. Vegetation was visibly decreasing as we approached the Grimsel, the Alpine rose alone flourishing in these wild regions, whilst the fallen masses of rock, a few blasted pines, and the roaring of innumerable torrents, bore melancholy testimony to the unbridled fury of the wintry elements—the whirlwind, the snow-storm, and the falling avalanche. On our arrival at the Grimsel, a consultation was held between the host [Zybach] (a hardy old mountaineer), myself, and three of

[* Desor, vol. i. p. 551.]

the guides, as to the proceedings to be adopted, and also as regards the probable result of the undertaking. This terminated satisfactorily; two of the boldest, J. Jaun and Caspar Alphanalp [Abplanalp], volunteered to accompany me, and, as both one and the other had trodden the summit of the Jungfrau,* I instantly placed all confidence in them; and leaving them in company with my former guide to prepare for our expedition, I retired early, knowing that the ensuing night would be spent necessarily on the glacier of the Aar—a locality not very favourable to repose. The morning [July 7] broke without a cloud, and I found the three mountaineers fully equipped with hatchets, ropes, crampons, long poles shod with iron, blue veils, &c., not forgetting provisions for two days, and the flag, which we fondly hoped should bear testimony of the forthcoming exploit. On leaving the Grimsel, our course lay among fallen rocks, up a desolate valley, bounded on the left by the Leidelhorn [Sidelhorn], and on the right by the Juchliberg [Juchlistock] and the Broniberg [Brunberg]. This valley (situated about 7,000 [6,135] ft. above the Mediterranean) appeared gradually to enlarge, and we perceived its further extremity to be closed from side to side by a wall of dingy-looking ice, rising vertically between 200 and 300 ft. in height; this was the termination of the glacier of the Aar. Having attained the summit of this wall, by scaling the rocks on its border, we perceived the vast glacier of the Aar itself spread out before us for many miles, and surrounded by the gigantic peaks of the Finsteraarhorn, Shreckhorn, Oberaarhorn, Vischerhorner, and Lauteraarhorn, the former rising to the height of 14,000 [14,026] ft., the remainder ranging between 11,000 and 13,000 ft. above the sea level. Following the course of the terminal moraine, we reached the pure unsullied surface of the glacier itself, which we now found thickly spread with crevasses, all running parallel with each other; the majority of these being filled with snow, considerable caution was necessary in sounding them with the poles, previous to trusting the body to so frail and deceptive a support. Proceeding thus along the centre of the glacier for 3 hrs., we arrived opposite the little hut, constructed for M. Agassiz,† in

* [The former made the ascent in 1841 with M. Desor's party (Desor, vol. i. pp. 359, 394); the latter in 1842, with Herr Gottlieb Studer (see his *Topogr. Mittheilungen*, p. 102).]

† See *Athenæum*, No. 717 [*i.e.* the Pavillon Dollfus].

order to enable him to carry out more fully his experiments on the increase and advance of the glaciers. Situated fully 300 ft. above the level of the ice, it is in a great measure sheltered from the fall of avalanches and from the effect of those hurricanes and snow-storms to which these elevated regions are so liable. The sun was now gradually declining, the innumerable ice-bound peaks and glaciers being lit up by its last rays, until the whole chain presented the appearance of burnished gold. This magnificent spectacle suddenly ceased, and every object resumed its ghastly bluish tinge, as the shades of night shut them out from our view, merely leaving the white outline of the nearer peaks discernible. We now attempted to obtain a few hours' sleep, after taking every precaution to guard against the severe cold; in this latter we partially succeeded. Sleep, however, was tardy in its approaches, the novelty of the situation being too exciting. Towards midnight, several vast avalanches fell, with the roar of the loudest thunder, on the opposite side of the glacier. This was quite sufficient to banish all drowsy sensations; we were soon, therefore, on foot, preparing in earnest for the anticipated 17 hrs. of successive climbing over snow and glacier [July 8]. The first point to be accomplished was, the descent to the surface of the glacier, into the recesses of which (owing to its disrupted condition) we found it necessary to penetrate, finding ourselves at the bottom of a well, round three sides of which walls of ice rose up almost vertically. Up these walls it was necessary to ascend, in order to effect our exit from our cold dismal prison. Jaun, our *guide chef*, commenced cutting out steps in the ice, and in a short time we all emerged from our retreat, and stood safely on the glacier of the Lauteraar, at its junction with that of the Finsteraar. The former descends from the Shreckhorn and Col de Lauteraar; the latter from the Finsteraarhorn and its attendant peaks. Our course was now directed across the glacier towards the Abschwung, along the base of which we cautiously proceeded, the ice at this early period being dangerously slippery. The doubtful crevasses were sounded, and the yawning ones avoided as far as possible; these at length (on our attaining an elevation of 9,000 ft.) ceased in a great degree, and the surface of the glacier appeared covered for miles in extent with a thick coat of unsullied and unbroken snow, whilst in front of us, and fully 3 hrs.' march distant, rose the Col de Lauteraar, 10,000 [10,355] ft. in height, hitherto con-

sidered impracticable. Its brilliant white crest being cut out in the strongest relief against the deep blue sky tempted us into the belief that it was close at hand ; we soon, however, became aware of our inability to calculate distances in regions where the vast size of the surrounding objects, combined with the peculiar light reflected from the snow and glaciers, baffle such attempt. For hours we continued surmounting long slopes of snow, sinking at every step half way to the knee, and as yet no visible decrease of distance appeared. At length we reached the first range of those great crevasses usually found at the foot of the steepest ascents : among these it was necessary to proceed with the utmost caution ; the whole party were lashed together, and we threaded our way through this labyrinth of blue and ghastly abysses to the very foot of the redoubted Col de Lauteraar, which now rose quasi-perpendicularly far above our heads for many hundreds of feet, whilst on its ridge we perceived a mass of overhanging snow, which from its threatening aspect caused us great uneasiness ; in fact, a more formidable or apparently inaccessible barrier could scarcely be witnessed : it was, nevertheless, necessary to surmount it, and the question now was, How is it to be done ? At our feet lay a large crevasse, on the opposite side of which the wall of snow rose immediately, not leaving the smallest space on which to place the foot. Our head guide, however, nothing daunted, by means of his long alpenstock, succeeded in excavating a hole in the snow, into which we might jump without much danger of falling into the yawning gulf below ; he first crossed, and extending his baton to assist the next comer, I seized the friendly aid and jumped ; the snow, however, gave way, and I remained suspended over the abyss, grasping with all my strength the extended pole ; from this perilous position I was instantly rescued, and the rest of the guides having crossed in safety, we found ourselves clinging to the wall of snow which constitutes the south aspect of the Col. The ascent now commenced in earnest, the first guide having been relieved by the second in command, who (hatchet in hand) assiduously dashed holes in the snow in which to place the hands and feet ; the steepness of the Col being such that the necessary inclination of the body forwards, which all ascents require, brought the chest and face in close contact with the snow, the excessive brilliancy of which, notwithstanding our blue glasses and veils, proved singularly annoying. In this critical position our progress upwards was of necessity very slow, the advance

of the foot from one step to the succeeding one being a matter of careful consideration, as a slip, the least inclination backwards, or even giddiness, must have inevitably proved fatal to one or other of the party. Thanks, however, to the efforts of the hardy mountaineers, the summit of the Col was at length attained, 5 hrs. after our departure from the night encampment. For some time previous our sphere of vision had necessarily been limited by the interposition of the Col de Lauteraar; its crest, however, being attained, we beheld a great portion of Switzerland stretched out like a map far below, whilst on either side rose the summits of those gigantic barriers which bound the Valley of Grindelwald. On the left, the great and little Shreckhorn and the Mettenberg, and on the right the object of our ambition, the three peaks of the Wetterhorner, the Wetterhorn, the Mittalhorn, and Rosenhorn: below us lay the fields of snow which descend from these summits and crown the superior glacier of Grindelwald.

It was now deemed necessary to descend a portion of the opposite side of the Col we had just surmounted, previous to arriving at the foot of the great peak, which appeared to rise in close proximity to the height of 2,150 [1,811] ft. above the plateau of snow on which we stood, and which in itself attained an elevation of 10,000 [10,355] ft. We now began our descent, which, although not so steep as our previous ascent, was perhaps more nervous; the precipices of ice and snow, together with the wide crevasses thickly spread at their feet, being constantly before the eyes. Great stress being laid on the ropes and hatchets, this descent was in turn safely accomplished, and we again began to ascend slope after slope of snow (at times threading our way with much difficulty among the gaping crevasses, all of which presented the appearance of the deepest azure), our course being directed towards the base of the superb central peak, known as the Mittalhorn [Mittelhorn], which now towered over our heads; apparently a huge pyramid of the purest ice and snow. To me it appeared so impossible to scale it, that I ventured to inquire of the guides whether they expected to attain the summit; to this they replied, that they assuredly did so. I, therefore, held my peace, thinking myself in right good company, and the south-western aspect of the Peak being deemed, to all appearance, the most practicable, we began the arduous task of scaling this virgin mountain. The ascent in itself strongly resembled that of the Col de Lauteraar described above; its dura-

tion, however, being longer, and the coating of ice and snow being likewise more dense, the steps hewn out with the hatchet required to be enlarged with the feet preparatory to changing our position. In this singular manner we slowly ascended, digging the left hand into the hole above our heads, left by the hatchet of the advancing guide, and gradually drawing up the foot into the next aperture; the body reclining full length on the snow between each succeeding step; in this truly delectable situation, our eyes were, every moment, greeted with the view of the vast precipices of ice stretching above and below; impressing constantly on our mind the idea that one false step might seal the fate of the whole party: connected as we were one to the other, such, in fact, might easily have been the case. We had now been three hours on the peak itself, and the guides confidently affirmed that in another hour (if no accident occurred) we should attain the summit; the banner was accordingly prepared, and after a few minutes' repose, taken by cautiously turning round and placing our backs against the snow, we stretched upwards once more, the guides singing national songs, and the utmost gaiety pervading the whole party at the prospect of so successful a result. The brilliant white summit of the peak appeared just above us, and when within 30 or 40 ft. of its apex, the *guide chef*, considerably thinking that his employer would naturally wish to be the first to tread this unconquered summit, reversed the ropes, and placing me first in the line, directed me to take the hatchet and cautiously cut the few remaining steps necessary. These injunctions I obeyed to the best of my abilities, and at 1 o'clock precisely the red banner fluttered on the summit of the central peak of the Wetterhorn.

We had thus, after three days' continual ascent from the level of the plain, attained a height of 12,154 [12,166] ft. Up to this period, our attention had been too much occupied in surmounting the opposing obstacles which lay in our route, to allow us to contemplate, with attention, the astonishing panorama, which gradually unfolded itself. The summit being under our feet, we had ample leisure to examine the relative position of the surrounding peaks, the greater portion of which appeared to lie far beneath us. To the N. we perceived the Faulhorn and the range of mountains skirting the Lake of Brienz; behind these the passage of the Brunig, together with the lakes of Lungerne and Lucerne, on the banks of which rise the pyramids of the

Righi and the Mont Pilate, the summits of which (the boast of so many tourists) appeared as mole-hills. Towards the E., the eye wanders over an interminable extent of snow-clad summits, extending to the utmost verge of the horizon, a perfect ocean of mountains. Turning to the S., however, we there perceive the monarchs of these Bernese Alps rising side by side, the Rosenhorn and the Berglistock raise their snow-clad crests in close proximity; separated from them by the Col de Lauteraar, we perceived the rugged Shreckhorn, aptly denominated the Peak of Terror, whilst the loftiest of the group, the Finsteraarhorn, appears peering among his companions. To the right of these two peaks the brilliant Vischerhoerner next came into view, beyond which we discover the three celebrated sister summits of the Eiger, the Mounch, and the Jungfrau; the whole group exceeding the height of 12,000 ft. At the base of these gigantic masses lies the Wengern Alp, apparently a mere undulation; whilst far below the outline of the village of Grindelwald may be faintly discerned, the river Lutchinen winding, like a silver thread, through the valley. On all sides of the peak on which we now stood (on the summit of which a dozen persons could scarcely assemble) we beheld vast glittering precipices; at the foot of these lie the plains of snow which contribute to the increase of the numerous glaciers, situated still lower, viz. to the left the superior glacier of Grindelwald and that of Lauteraar, to the right the glaciers of Gaudi, of Reufen [Renfen], and of Rosenlauri, out of which rose the peaks of the Wellhorn, the Losenhorn [Dossenhorn], and Engelhorner.

Many anxious looks were now cast in this direction; the guides having determined to reach Rosenlauri through this unexplored region. We had remained above twenty minutes on the summit, exposed to a violent wind and intense cold, although in the plain, on that day, the thermometer of Fahrenheit stood at 93° in the shade. The sudden appearance of a few fleecy clouds far below caused us some misgivings, we therefore (after firmly securing the flag-staff) commenced our descent on the opposite side of the peak to that by which we had ascended, in order to reach the plains of snow surmounting the great glacier of Rosenlauri. From the excessive steepness of this slope, and the absence of crevasses, it was deemed advisable to sit and slide down the snow, guiding our course with the poles. In this manner we descended with the greatest rapidity to the plateau. Here again great caution was required, many of the crevasses

being covered with a slight coating of fresh snow, incapable of sustaining the weight of the human body. After crossing this plateau we arrived at the foot of the Tosenhorn [Dossenhorn]. This is a lofty peak, situated at the junction of the glaciers of Rosenlauri and Reufen, which at this point become identified with the great slope of snow descending from the Wetterhorner. This region being a *terra incognita* like the preceding, our advance was slow and wavering; and on the descent of the Tosenhorn the difficulties appeared rather to increase than diminish: the loose rocks and stones covering the southern aspect of the peak, receding continually from under the feet, and falling in showers over the precipice; below which, at a fearful depth, we could discern the deep blue crevasses and bristling minarets of the glacier of Rosenlauri. Quitting the rocks, we again found ourselves on slopes of snow so vertical that for a long period of time it was necessary to descend backwards as if on a ladder—the hatchet being in full play. At the foot of one of these slopes, the snow broke suddenly away, leaving a crevasse, apparently about four yards in width, the opposite border of which was fully 20 ft. lower than that on which we stood; this at first sight seemed insurmountable, the guides themselves being bewildered, and all giving advice in one breath; we were at this time clinging to the slope of snow over the very verge of the blue gulph below. Jaun at length volunteered the hazardous experiment of clearing it at a bound—this he accordingly did, arriving safely on the inferior border. The ropes being detached, the remainder of the party mustered resolution, and desperation giving fresh courage, we all in turn came flying across the crevasse upon the smooth snow below. Our successful triumph over this alarming obstacle having greatly inspirited us, we prepared to cross a narrow slope of ice, on which our leader was diligently hacking a few steps; a sudden rumbling sound, however, arrested our attention—the rear guides drew the rest back with the ropes with violence, and the next moment an avalanche thundered down over the slope we had been preparing to cross, leaving the whole party petrified with horror at the narrowness of their escape. The clouds of fine snow in which we had been enveloped having subsided, we again descended, during 3 hrs., a succession of steep walls of ice and snow; reaching the glacier of Rosenlauri at 5 P.M. The passage of this glacier resembles in every respect that of the far-famed glacier de Bossons on the Mont Blanc, the crevasses being so numerous as to leave

mere ridges of ice interposed between them; and these ridges being the only means of progress, the eye was constantly exposed to the view of the surrounding gulphs of ice which at every step, appear ready to swallow up the unfortunate individual whose presence of mind should fail; whilst the pinnacles of ice rising over head, often totter upon their unsteady foundations. In our present fatigued condition, the passage of the glacier was indeed highly perilous; the extreme caution and courage of the guides, fortunately prevented the occurrence of any serious accident, and at 8 P.M. we bade a final adieu to those fields of snow and ice-bound peaks over which our course had been directed for 17 consecutive hours. All danger was now past, and the excitement having ceased, the tedious descent over rocks and fallen pines became insufferably fatiguing. The baths of Rosenlauri were still far below at our feet; whilst the sombre hue of the pine forests, stretching down into the valley, formed a striking contrast to the uninterrupted glare of so many previous hours. Night was now gradually throwing its veil over the surrounding objects; the glimmering of lights soon became visible, and at 9 P.M. we all arrived safely at the baths of Rosenlauri, where, for several hours, considerable excitement had prevailed—the flag fluttering on the summit of the peak having been discovered, by means of a powerful telescope. Four small black dots had likewise been noticed at an immense height on the otherwise unsullied snow, which dots having been likewise seen to change their position, the inhabitants of the valleys wisely concluded that another of their stupendous mountains was in a fair way of losing its former prestige of invincibility.

On the following morning [July 9] I took leave of the two intrepid chamois hunters, to whom, on several occasions, during the previous eventful day, I had owed my preservation. I was shortly afterwards informed that these poor fellows (though so hardy) were confined by an illness arising from the severity of their late exploit. For myself, I escaped with the usual consequences of so long an exposure to the snow in these elevated regions, viz. the loss of the skin of the face, together with inflammation of the eyes, and accompanied by my remaining guide, who was likewise in a very doleful condition we recrossed the Great Shiedeck, arriving at Interlaken the 10th of July.

We here learnt, for the first time, that two days previous to our ascent some Swiss gentlemen, indignant at the idea of allowing 'un Anglais' to be the first to scale their

virgin peak, had, in company of three chamois hunters, made another attempt from Grindelwald. To our gratification it proved a failure; the parties, having mistaken their locality, ascended a peak,* the summit of which had been first reached in 1844 by the same men † who had so ably assisted me in the ascent just described.

Paris, August 20th, 1845.

HISTORICAL NOTE.

BY W. A. B. COOLIDGE.

Mr. Speer's most interesting paper possesses great historical value, even though it is not possible to accept all his statements as in accordance with well-ascertained facts.

That his ascent of the Mittelhorn, the highest of the Wetterhörner, was the first, has never, so far as I know, been doubted by anyone, and his full narrative of his climb is therefore an original document of the greatest value to the Alpine historian. ‡

His claims, however, to the *first passage of the Lauteraar Sattel*, and to the *first exploration of the Rosenlauri glacier*, are opposed to well-authenticated historical facts.

Let us take the case of the *Lauteraar Sattel* first.

* [Herren Fankhauser and Roth, both of Bern, with three Grindelwald guides, on July 7, 1845—the day before Mr. Speer's expedition—climbed from the Glectstein cave to the ridge of the Wetterhorn, probably that between the Hasli Jungfrau and the Mittelhorn, and were then driven back. See G. Studer's *Panorama von Bern*, p. 233, and *Ueber Eis und Schnee*, i. p. 236.]

† [This is a mistake. The Hasli Jungfrau was, indeed, reached in 1844 by Jaun, but his companion was Michael Bannholzer, *not* Abplanalp. See Desor, ii. pp. 153-4.]

‡ I take this opportunity of completing the account of the Mittelhorn by a notice of the Mitteljoch, the pass between that peak and the Rosenhorn. Mr. Ball's *Alpine Guide*, 'Central Alps,' p. 124, is the authority for the statement that this pass was crossed, probably for the first time, by Mr. A. P. Whately in 1857. Mr. Whately has kindly communicated to me the following particulars of his expedition:—The exact date was August 24, 1857, and the guides were Winterberger and Johann Jaun, who were unacquainted with these regions. The party, therefore, took about 16 hrs.' actual walking from Rosenlauri to the Dollfus hut, crossing, most probably, the Lauteraar Sattel to gain the Lauteraar glacier, though possibly they crossed first the Berglijoch or the Rosenegg, and then the Gauli Pass. The former conjecture is the more probable, and in that case Mr. Whately's party was only two days later over the Lauteraar Sattel than Captain J. R. Campbell, Dr. Porges, and Herr Stern, whose traverse (*Alpine Journal*, i. pp. 60-2) is sometimes regarded as the first, though it will be shown presently that that claim is historically untenable.

Herr Gottlieb Studer tells us * that as early as 1831 he and Professor Hugi had the intention of crossing it, but that bad weather made them change their plans. As the broad opening of the pass was plainly seen from Agassiz's hut on the Unteraar glacier (the so-called 'Hôtel des Neuchâtelois') we are not surprised to find a view of it from the hut inserted in the account of the sojourn of 1840 in that rough shelter. † Nor does it astonish us to read that at the end of July or at the beginning of August (the limits are July 23 and August 8), 1842, one of Agassiz's party, M. Girard (who, a few days later, was one of the three travellers who made the first ascent of the Lauteraarhorn), with J. Berger (the chief of the workmen employed in making soundings of the glacier), was stirred up to pay a visit to the pass. This was apparently the first time it had been reached. The two adventurers seem to have found no very great difficulties, save a final ice slope, and only took 4 hrs. from the hut to the pass. They thought that the slopes on the Grindelwald side were rather less steep than those by which they had come up, yet decided that it would be rash to descend on that side. Desor, to whom we owe all these details, ‡ adds, no doubt on the authority of M. Girard, 'Aussi jamais cette descente n'a-t-elle été effectuée.' This visit is important as showing us that Agassiz's party were aware of a possible pass by this ridge. In the second series of Desor's 'Excursions' (published in 1845—the preface is dated May 1) we find the 'Col d. Lauteraar' (*sic*) marked on the map at the commencement of the volume. Later on he narrates how, on his way down from the first ascent of the Rosenhorn (August 28, 1844), two of his guides, Jaun and Bannholzer, offered to plant a flag on the virgin Hasli Jungfrau, and adds, 'Ils devaient en même temps s'assurer si, comme on avait prétendu jusqu'alors, il était réellement impossible d'atteindre le glacier de l'Aar par le Col de Lauteraar.' The two guides were thus sent on a double errand, and carried it out successfully on August 31, 1844, going from Rosenloui to the col between the Mittelhorn and the Hasli Jungfrau, making the first ascent of the latter peak, and then achieving the first traverse of the Lauteraar Sattel in order to regain the hut on the Unteraar glacier, whence the whole party had started on August 27. They took 12 hrs. from Rosenloui, and reported that there were no great difficulties, save in rounding the foot of the Berglistock, so that they clearly took the old route over the N.E. bit of the ridge of the col. Desor tells us all this in detail, § and it is worth notice that, in describing the view he had enjoyed from the Rosenhorn on August 28, he makes special mention || of the 'Col du Lauteraar,' which he and his guides had thus clearly examined on its hitherto unknown Grindelwald side. I lay stress on these small points because they go to prove that the passage of the Lauteraar Sattel was one of the climbs planned by the Desor party, and hence the fact that the

* *Berg- und Gletscherfahrten*, ii. p. 62.

† Desor's *Excursions*, i. p. 156, which was published in 1844, so that the drawing is, at any rate, earlier than that date.

‡ Vol. i. pp. 491, 531-2.

§ Vol. ii. pp. 146, 153-5.

|| P. 141.

guides made it alone does not detract from their credibility. It was the solution of a problem which had been carefully studied by Desor and his friends. For all these reasons it appears to me that the evidence in favour of the two guides is overwhelming, quite apart from their credibility, to be discussed later on. Barely a year after this expedition, Mr. Speer made his, in the course of which he undoubtedly accomplished the first traveller's passage of the Lauteraar Sattel. He says it was 'hitherto considered impracticable,' but we must bear in mind that his head guide was the very Jaun who had been over it a year before, and had been one of those who had studied it previously on both sides. We shall see later on what was the probable reason of his astonishing statement. On the occasion of the first traveller's ascent of the Haali Jungfrau on July 31, 1845, by MM. Agassiz, Vogt, and Bovet, with Jaun, Bannholzer, and two other guides who do not concern us for our present purpose, the party, making a late start from the Dollfus hut owing to doubtful weather, bivouacked the first night on the Lauteraar Sattel, achieved their ascent next day, and that evening came back over the same pass to the Unteraar glacier.* In other words, scarcely three weeks after Mr. Speer's passage, the pass was so well known that it was used as a bivouac, and recrossed in the afternoon. The 1845 party thus improved on their predecessors. Jaun was on all three expeditions, and I think all this makes it more and more certain that his passage on August 31, 1844, really took place. I, at any rate, am, personally, entirely convinced of this.

Thus, while Mr. Speer can claim only the first traveller's passage of the Lauteraar Sattel, Captain Campbell's party † are only entitled to the credit, such as it is, of having made the first recorded passage of the pass in its entire length, from Grindelwald to the Grimsel.

The discussion of Mr. Speer's ungrounded claim to this pass has taken me longer than will that of the even more ungrounded claim that on July 8, 1845, the *Rosenlauri glacier* was an 'unexplored region,' and 'a *terra incognita*.' It is sufficient to enumerate the recorded visits to all parts of this glacier before Speer ever went down it. In 1843, Desor, with a friend, M. Brunner, and his faithful guide Währen (who had just succeeded the lamented Leuthold as Desor's head guide), went from Rosenlauri to the Weit Sattel (the Urbach Sattel of the Siegfried map). It is expressly stated that the ascent was made by the glacier, and implied that natives had already reached this pass.‡ On August 28, 1844, the Rosenhorn party (including Jaun) descended from the S.E. foot of that peak to the base of the Dossenhorn and to the Weit Sattel, which was crossed to the Urbach valley.§ Desor says expressly ||: 'Tout l'espace entre les Wetterhörner et le pied du Tossenhorn était une *terra incognita*,' and this statement was then strictly accurate, though it was not when Mr. Speer came by, nearly a

* Studer, iv. p. 68, and Vogt's account in *S.A.C. Jahrbuch* xxvii. pp. 388-94.

† See the footnote on the Mitteljoch at the beginning of this 'Historical Note.'

‡ Desor, i. pp. 604-5.

§ *Ibid.* ii. pp. 148-51.

|| P. 149.

year later. Finally, Jaun and Bannholzer, on their ascent of the Haali Jungfrau, August 31, 1844, are distinctly stated by Desor* to have gone up the entire Rosenlauri glacier, from Rosenlauri to the opening between the desired peak and the Mittelhorn. Jaun, at least, had thus been certainly twice on the upper Rosenlauri glacier before he guided Mr. Speer down it on July 8, 1845, by the very route, doubtless, that he had taken on August 31, 1844. Thus, once more, I think, Mr. Speer's narrative has been proved to be contradicted by well-ascertained facts.

Let us, in conclusion, examine the qualifications of Mr. Speer as compared with those of his two guides.

Mr. Speer seems from his paper to have been an energetic young fellow, who, on hearing that there was an inaccessible peak somewhere about, at once started for it. Apart from his imperfect knowledge of German, as shown by his spelling of proper names (part of the blame may very likely belong to his printers), we find that he displays no acquaintance with Desor's books, one of which, at least, was published before his expedition. He had apparently no special topographical knowledge of the regions which he was visiting for the first time, though he seems to imply that he had done some climbing previously. It is odd that he never mentions the name of the Interlaken or Grindelwald guide, who accompanied him from Interlaken throughout his journey and back. Further, it seems to me that there are many little signs in his narrative which point to his having simply handed himself over to Jaun and Abplanalp, on their engaging to take him to the top of the peak he wished to conquer—*e.g.*, the name of Mittelhorn, given in 1843 by Desor,† which at that time could only have been got either from the guides or Desor's works. The latter is improbable, as he never mentions the name of Desor, whose monograph on the Wetterhorn group was then quite unique, and as Mr. Speer misspells the name Mittelhorn, it looks as if he had heard it from the guides. Again, notice what he says about his question to the guides as to whether they expected to reach the summit, seen by Mr. Speer for the first time, and startling him not a little; and remark how, on their assurance that they certainly expected to reach the summit, he allows that 'he held his peace, thinking himself in right good company.' All this makes me think that Mr. Speer was what would now be called a 'gymnast' or 'a peak hunter,' caring for naught else than to conquer his peak—a most laudable frame of mind, indeed, but one which scarcely entitles him to be treated as an authority of any great weight, save as to the actual details of his climb. It is really amusing to see how, as I have pointed out in my notes, he makes a mistake almost every time he condescends to speak of any of his predecessors or rivals. I do not, of course, blame Mr. Speer for not carefully getting up his subject, but I do think that his statements avail little against the wide experience of his two chief guides (we know nothing of the third who came with Mr. Speer from Interlaken).

Of these two guides, *Johannes Jaun*, of Meiringen (to be carefully distinguished from another guide, also called Johannes Jaun, of Imgrund

* Vol. ii. p. 154.

† Vol. i. p. 610.

or Imhof *), appears to have been the leader. In 1842 he took M. Desor up the Thierberg (between the Unteraar and the Oberaar glaciers), on which occasion Desor speaks † of him as 'jusqu'à un certain point le rival de Jacob'—i.e. Leuthold, the leading guide of the day. He also went with Desor that year up the Jungfrau (the fourth ascent), ‡ while, assuming the accounts in Desor to be true, Jaun was up the Rosenhorn and Hasli Jungfrau within three days (both first ascents), a capital training for the conquest, in 1845, with Mr. Speer, of the Mittelhorn, which he had thus seen and no doubt studied, guide fashion, from all sides. § *Kaspar Abplanalp* (to be carefully distinguished from his brother, Andreas, ¶ as well as from a Johannes of the same clan ¶¶) has also a good record, for in 1839 he went up to the Strahlegg from the Grimsel (a great feat in those early days), and in 1842 ascended the Jungfrau (fifth ascent), both with Herr Gottlieb Studer, who describes ** him as a hardy and skilful climber, as well as a cautious and reflective man. Jaun's credit, so far as regards the Hasli Jungfrau and Lauteraar Sattel, stands or falls with that of *Melchior Bannholzer*, of whom I must, therefore, say a few words, though he was not one of Mr. Speer's guides in 1845. He was one of the guides on the first ascent of the Lauteraarhorn in 1842, †† while in 1842 he had been the leader on the fifth recorded ascent of the Jungfrau, †‡ having made the fourth ascent in 1841 with M. Desor's party. In 1844 he climbed the Rosenhorn on August 28, came back on the 31st over the Hasli Jungfrau and Lauteraar Sattel, and on September 1 led a party of Americans over the Strahlegg. §§ In 1842 Studer describes him as a most daring and venturesome climber, ||| and narrates how he courageously rescued a cap which had fallen into the great bergschrund, ¶¶¶ while in 1844 Desor tells us *** that Bannholzer was the leader in an adventurous excursion down an ice-hole at night. I had almost forgotten to say that it was Bannholzer who, on the ascent of the Lauteraarhorn, was selected by the leader, Leuthold himself, to force a way over a bad bit on the arête, and who took a most thrilling leap in mid air, to induce the rest of his party to follow him. †††

I have entered into all these minute details about these three guides to prove that their narratives deserve complete credit, and that Mr. Speer's statements in contradiction to them must be attributed to his youth and inexperience. The only plausible argument against the guides is that they did not mention their previous passages of the Lauteraar Sattel and of the Rosenlauri glacier to Mr. Speer, and that

* See Desor, i. p. 359.

† Vol. i. p. 529.

‡ Desor, i. pp. 359, 394.

§ A striking instance of his devoted care to a wearied traveller on the descent from the Hasli Jungfrau, August 31, 1845, is narrated in Vogt's account, reprinted in *S.A.C.J.*, xxvii. p. 393.

¶ Desor, ii. p. 126; Studer, *Topogr. Mitth.* p. 102.

¶¶ Desor, i. pp. 359, 394.

** *Topogr. Mitth.* p. 102.

†† Desor, i. p. 536.

‡‡ Studer, *Topogr. Mitth.* pp. 102, 115, 117-8.

§§ Desor, ii. pp. 153-5. ||| P. 102. ¶¶ P. 127.

*** Vol. ii. p. 122.

††† Desor, i. p. 541; Studer, *Topogr. Mitth.* p. 102.

therefore it may be presumed that they did not really accomplish them. Mr. Speer, however, does not say that they did not tell him about their exploits, while he does mention with perfect belief the 1844 ascent of the Hasli Jungfrau by one of his guides, by a very natural mistake giving him as comrade on that expedition his companion of 1845 instead of his real companion, Bannholzer. This admission on Mr. Speer's part goes, I venture to think, a long way towards demolishing the always dangerous argument from silence. Another reason for either their omission to tell Mr. Speer, or for his forgetting what they had told him about the pass and glacier, is that for a long time passes and glaciers (especially the former) were not considered as anything but steps in the attainment of a summit, and so, in the early narratives, they are frequently slurred over in a fashion that seems very curious to us. I need only recall the first passages of the Beichgrat by the Meyer party of 1811, and of the Mönchjoch by Rohrdorf's party in 1828. One has to read each narrative very carefully to make out that the parties crossed a pass at all.

For all these reasons, therefore, I think that we may assert with great confidence that the expedition of the two guides on August 31, 1844, on which the whole matter really turns, is perfectly authentic, and that any expressions of Mr. Speer to the contrary are capable of easy explanation, without supposing that he meant to give the lie to his two guides, of whose general conduct during the Mittelhorn expedition he speaks in very complimentary terms.

Some minor points alone remain to be disposed of.

It is worth remembering that the passage of the Lauteraar Sattel by the two guides in 1844 is recognised as authentic by some important works dealing with Alpine history (in addition to those named in the course of this note)—*e.g.*, Herr Gottlieb Studer in 'Berg- und Gletscherfahrten,' ii. (1863), p. 61, and in his 'Ueber Eis und Schnee,' i. p. 161, and Mr. W. Longman in his 'Modern Mountaineering,' Appendix to vol. viii. of the 'Alpine Journal,' p. 76.

The statement made in 1857 at Grindelwald to Captain Campbell * that the Lauteraar Sattel 'had never been traversed' may be explained either by the jealousy between the Grindelwald men, who had not been on it, and the Meiringen men, who most certainly had been on it several times by the date mentioned, or—this, I fancy, is the 'real explanation—that it had never been traversed throughout from Grindelwald to the Grimsel. This latter contention is apparently quite accurate, but may very likely have been unconsciously given a wider meaning by travellers not well up in Alpine history. This would be not unlike a very common belief even nowadays, that Sir Alfred Wills in 1854 made the absolutely first ascent of the Hasli Jungfrau. Of course it was only the first complete ascent made from Grindelwald as a starting-place; and the hero of that famous climb never claimed any other merit for it or himself. †

* *Alpine Journal*, i. p. 60.

† See *Wanderings*, pp. 271, 302, with which compare Studer's *Ueber Eis und Schnee*, i. p. 237.

Mr. Ball's statements on this subject are unfortunately not as accurate as his statements generally are. He says* that, while the two guides were the first to cross the actual ridge of the pass, yet 'the possibility of reaching the pass from Grindelwald was not established till 1857.' He has clearly forgotten that as early as 1845 a party of travellers came up from Grindelwald to the Glectstein cave,† and that Mr. Wills and others had done the same before 1857. On the other hand, the two parties of 1844 and 1845 up the Hasli Jungfrau, and possibly others, had passed close to the Glectstein, on their way up the peak, but did not go down to Grindelwald. Thus it was very clear that the 'possibility of reaching the pass from Grindelwald' was established long before 1857, though no one had actually reached it from Grindelwald until that date. Of course I am only speaking of recorded passages; others may have taken place of which I have no knowledge, though I should be very much obliged to anyone who would communicate to me information regarding any such passages. On p. 120 Mr. Ball, by an unlucky misprint of 1843 for 1845, darkens and confuses matters very much. It is quite certain that Agassiz's ascent of the Hasli Jungfrau took place in 1845, not 1843.‡ In reality the two guides went up in 1844, and took up Agassiz and his friends in 1845. Mr. Ball clearly recognised the ascent by the two guides, though unluckily he postdated it, while antedating Agassiz's. A little below, too, it is of course in flat contradiction to what has just been said in his text to assert that there were doubts as to the accessibility of the Hasli Jungfrau till Sir Alfred Wills' ascent in 1854. Mr. Ball really means (as in the case of the Lauteraar Sattel) that it was the accessibility from Grindelwald that was doubtful, not the accessibility of a peak of which he had just mentioned two ascents. The latter statement would be absurd. After the words 'Wetterhorn proper' we must necessarily insert 'from Grindelwald.' Then the text becomes consistent and much more accurate, though still open to the objection that the Glectstein had been reached before 1854 from Grindelwald, and also practically by the parties coming from the Lauteraar Sattel on their way up the Hasli Jungfrau. In both cases the question of accessibility has been unfortunately mixed up with the entirely different one—Has the peak or pass in question been actually reached from this or that direction?

It may, perhaps, be of use to some of my readers to point out that Studer's, Desor's, and Vogt's narratives, often referred to in the above lines, may be found collected (with other articles) and reprinted from the original texts, in one volume, which forms vol. iv. (1864) of Dollfus-Ausset's 'Matériaux pour l'Etude des Glaciers,' and has also a separate title-page, 'Ascensions dans les Hautes Régions des Alpes.'

This note has become far longer than I expected when I began it,

* *Central Alps*, p. 118.

† See footnote (*) on p. 115 above.

‡ Studer, *Ueber Eis und Schnee*, iv. p. 68; and *S.A.C. Jahrbuch*, xxvii. pp. 388-94.

but I trust my readers will accept it as an earnest endeavour to clear away some deeply rooted but erroneous beliefs that still obscure the history of one of the finest mountain groups in the Bernese Oberland. I hope that a complicated set of events has now been set in its proper light, and that my successors, at least, will thank me for the minuteness with which I have tried to sweep away every cobweb from this dark corner of Alpine history.

NOTES FROM THE ADULA ALPS.

BY W. A. B. COOLIDGE.

THE disastrous fire at Grindelwald (August 18, 1892) had many unexpected consequences, but perhaps none was quite so singular as the following. The news reached us three days late at the distant village of Splügen, and as our leading guide, Christian Almer, jun., lost in the fire his house and all its contents, while I lost half my heavy luggage (left at the 'Bear' after a month spent there in May and June), our party broke up at once. Now we had been engaged for some weeks in the exploration of the Adula Alps for the purpose of a 'Climbers' Guide' for that district, and had pretty well completed our task save as regards the E. bit of that district, precisely that round Splügen. In writing my book in the winter of 1892-3 I felt very keenly the want of notes, based on personal experience, relating to that portion of the range. Hence I resolved to make up for this in the summer of 1893, and the following jottings are meant to help the readers of that work by completing the details there given. These jottings consist mainly of the notes made during a splendid week spent in the Adulas last August, to which I have added corrections of various slips made in the printed text, and some account of certain ascents made by some of my friends in 1893.

Let me first of all put right some minor matters.

A kind reviewer in the 'Rivista Mensile' of the Italian Alpine Club (No. for August, 1893, p. 255) has pointed out that the Cornera Alp (line 7 from the bottom of p. vii. of my 'Guide') is really in Graubünden (not, as stated, in Uri), while he also points out that I have wrongly inserted an accent on the final letter of the name 'Streghe' (p. 147), though in doing this I was but copying the Siegfried map, so that I err in good company. To these mistakes I may add some more which I found out for myself—pp. 137-8, for 'Annarossa' read 'Annarosa'; p. 138, line 8 from the bottom, insert 'S. A. C. J. ix.'; p. 60, line 12, after 'Theobald' insert 'i. p. 80.'; p. 133, line 6, for 'Madens' read 'Modens.' An ascent of the Badus on July 3 showed me that my account of Route 1 (p. 14) was open to improvement. For 'Oberalp road' read 'St. Gotthard road,' and in the next line for 'a small chapel' substitute 'some huts.' It is far better to climb the steep rocky slopes N. of the great gully leading up to the gap between the Badus and Piz Toma than to climb the gully itself, while after gaining the N. ridge of the peak the summit is best reached by

circling round by stones and snow on the N.W. face. Going very leisurely, we took 5 hrs. walking up from Andermatt, and 2 hrs. 40 min. down to the new inn at the W. end of the large lake on the Oberalp Pass, passing by the Toma tarn and the Milez huts. Let it be here set down that we found that inn clean and fairly good, but pretty dear, trout out of the lake being charged for (without previous notice), in addition to the price of the table d'hôte.

After escaping, on August 9, from Elm in Glarus (after a detention there owing to bad weather and the claims of my forthcoming 'Tödi Guidebook'), young Christian Almer and I climbed on August 11, in rather doubtful weather, the fine peak of the Ringelspitz (3,251 m. = 10,667 ft.) above the Calfeisen Valley. We took 6.35 up and 3.40 down, finding no difficulty (the passage from one of the two highest needles to the other is curious), though the peak enjoys a great local reputation. I mention it here as ours seemed, from the names in the book on the summit, to be the first ascent by an English party. In fine weather the view ought to be very extensive. Our starting-point was Flims, on the high road between Reichenau and Ilanz. The big inns there were quite full, but we were most hospitably entertained at the modest Hôtel Post, the bill being a marvel of cheapness. Next day we drove by Ilanz to Versam, at the entrance of the Safien Valley. Here we found a fair new inn, H. Signina. The road up from Ilanz passes through some beautiful forest scenery. Proceeding in a smaller carriage, we pursued our way up the very narrow and rugged Safien Valley, and were pleased to find a nice new inn (kept by Alexander Gredig, last house in the village) at the chief place in the valley, Safien Platz. On the 13th we went over to Splügen by the *Safierberg*, when I had the pleasant surprise of finding my description (pp. 135-6) quite correct, save that the distance from Platz to Thalkirch is $1\frac{1}{2}$ hr., not 2 hrs. I ought to warn travellers that though there is a sort of a char road as far as Thalkirch, the post-cart from Versam does not go beyond Platz, where it halts at Gredig's inn.

The next two days were spent in exploring the dolomite peaks of the Löchliberg range, of which I have given a full description in 'New Expeditions' (pp. 52-4). On August 16 we went up the *Tambohorn* (10,749 ft.), just opposite them, in order to admire our latest conquests. We took the route from the top of the Splügen Pass,* finding it perfectly easy, though the distance is greater than I imagined. It is better to skirt round the S. foot of the Lattenhorn than to cross the top, while the final rocks, though steep, have a zigzag path up them. The two cairns are built on the two ends of the summit ridge, a few minutes from each other. On our return we took Route 2 of my book, as I desired fuller particulars of it than I could find in the printed accounts. Retracing our steps to the depression between the peak and the Lattenhorn (40 min.), we descended by steep snow slopes, broken by rocky islands, to the level part of the Tambo glacier ($\frac{1}{2}$ hr.). Seen from the N. these slopes look much worse than

* See p. 167 of my 'Guide.'

they really are. Quitting this glacier, near a large green lake, not far from a great cairn on a green mound ($\frac{1}{2}$ hr.), we went past a second lake and down very stony slopes to the Tambo huts (40 min.), whence a stony path above the right bank of the Tambo torrent, and then a hot walk along the right bank of the Hinter Rhein, brought us back to the village of Splügen (1 hr. 10 min.). The *direct* descent from the top of the Tamboborn to the Tambo glacier by the snowy N.E. face would probably be possible, but the slopes are exceedingly steep.

On the 17th we had a most agreeable stroll across the *Bärenhorn* (9,620 ft.)* from Splügen to Vals Platz. The ascent was of the easiest kind, and only took us just under 3 hrs., leisurely walking (with knapsacks) from Splügen by way of the Safierberg, and the lower point 2,814 m. It seemed to me that the Swiss map was not quite accurate, as the point of junction of the three ridges is not 2,814 m., but a hump a little to the E. of it. The view was very fine, as always during that wonderful week. It was a surprise to find that the crag of the Valslerhorn, which stands up boldly on other sides, was easily accessible by shale slopes on the S.E. We descended to Vals Platz in 2 hrs. 35 min. by way of the Beim Bären Pass and the Tomül huts. The stream passing by those huts has many fine waterfalls in its upper course, and is beautifully clear spring water. The first bit of the path beyond the Tomül huts is very striking and quaint. At Vals we took up our old quarters at the Hôtel Albin (a good country inn), and heard much of the great new Kurhaus opened this year, a few minutes from the village, but little patronised as yet.

Next morning (August 18) we went up to that ideally placed Alpine village of Zervreila in $2\frac{1}{2}$ hrs., and, ascending the bold peak of the Zervreilerhorn,† spent the night at Tönz's (late Lorez's) little inn at the E. end of the village. The quarters there were simple, but clean, and food good, so that we were glad we had avoided Schmid's inn at the W. end of the village. In 1892 we had suffered much there, as we arrived on a feast day (August 15), and Tönz's house was shut up, so that we had to take refuge where we could.

Next day (August 19) we went over the *Piz Scharboden* ‡ to Vrin. It was an odd sensation for a disciple of old Father Placidus a Spescha, the earliest explorer of the district, to find oneself on a point which had probably not been visited since his ascent 100 years before. At Vrin we found that the Post Office, where we had lodged in 1892, had blossomed out into the Hôtel Post, with a Travellers' Book. It is a very clean, good, little inn, and the position of the village—on a high shelf above the Vrin Rhine—very agreeable. Thence we crossed (August 20) the *Diesrut Pass* to the Somvix valley. The Vrin side is made up of grass and shale slopes, and cows frequently go up to it. But they go down on the other side in a S.W. direction to the wide Greina plateau, by which Olivone is easily reached. We, on the other hand, were bound for the Vorder Rhein Valley, into which the pass leads topographically. But we soon found out that it was little used as a pass in that direction. After a short grassy descent, a *very* rough

* *Ibid.* p. 126. † *A. J.* vol. xvii. pp. 20-4. ‡ See 'New Expeditions,' p. 54.

and faint stony track led N. high above the right bank of the torrent, and gradually descended (a high traverse to the hut on the Fuorola de Ramosa route being avoided) to the miserable Fronscha hut (1 hr. 10 min.), whence more stones led down to the right bank of the Somvix torrent, which was crossed at the point marked 1,407 m. on the Swiss map (35 min.). An up and down path, traversing the stream several times, brought us through this narrow, deep-cut, and secluded glen to the small baths of Tenigerbad (1 hr. 10 min.). The heat all day had been most oppressive, and this, joined to the fact that we had climbed six peaks in the six preceding days, induced us to halt for the night at this quaint little place, whither foreigners rarely find their way. Tenigerbad is no longer the very primitive little place described by early visitors and figured in the 'S. A. C. Jahrbuch,' x. p. 152. The little chapel with its queer turret is still there, but the inn itself was entirely rebuilt in 1882, while in 1893 a new annexe had just been completed. I found everything *very* clean and the accommodation good, while the scale of prices may be estimated by the fact that the *pension* is only 4 francs. It is picturesquely situated in the midst of a fine forest, and far from any hamlet.

The following morning we jolted down in a sort of hay-cart to the Vorder Rhein Valley, after taking leave of the very friendly landlord and his wife. We were dragged up to Somvix, whence a less rude vehicle conveyed us to Disentis. Here we stayed several days to make the ascent of the Tödi by the Sandgrat ridge,* but the terrific heat forced us to drive up (on the afternoon of the 24th) to the Medels Valley on the Lukmanier route, a pass which we were told over and over again was nearly abandoned by travellers, though it has, I think, from our experiences in 1892 and 1893, many redeeming points. The Medels Valley forms one commune, of which the first hamlet, Curaglia (Hôtel Lukmanier), contains far more inhabitants than the village of Platta, higher up, which possesses, however, the old parish church. Just opposite the church is the very decent little Hôtel Post, which we made our head-quarters for two days. The top of the Tödi is just seen hence. The morning after our arrival a thick mist filled the valley, so that we did not start for *Piz Medel*. It cleared off too late, so that we had to content ourselves with a stroll through the woods on the W. side of the valley to a small lake beyond the Tegia Nova huts, in order to study our peak. Next day (August 26) we achieved the very easy ascent, taking only 5 hrs. up, and 2 hrs. 50 min. down. The route lies above Fuorns through the Buora glen nearly to the pass of the same name; then up the stones just W. of the Miez Glatsché ridge, and so by the upper bit of the Buora glacier and round snowfields S. of the point, 2,998 m., and of the Rifugi Camotsch to the N.E. ridge of the peak, by which the top is soon gained. The view was of course fine, and specially striking from the appearance of the hamlets of Campo and Ghirone immediately at our feet. We tried to identify the scene of the historic gliassade from the Camadra Pass made in June, 1865, by Messrs. Moore and Walker,†

* See 'Alpine Notes,' p. 56.

† *Alpine Journal*, vol. iii. p. 167.

but naturally at the end of a hot August there was much less snow than in June. Platta is by far the best starting-point for this ascent, as the Sura hut in the Plattas glen has long ceased to exist as even a rudimentary Club hut. We found the names of but one English party in the cairn (dating, I think, from 1885), while the most recent cards therein were dated 1888, since which time it would appear that no one has taken the trouble to make the ascent. On the morning of the 27th we went up in the diligence (simply a yellow two-horse carriage), to the great joy of the officials, who very rarely convey anything beyond the mails, to Santa Maria, close to the summit of the Lukmanier Pass. Here we got provisions, and started just before 9 A.M., to cross the mysterious *Bocca di Cadlimo* to Airolo. This is a pass which gave me a great deal of trouble when preparing my Adula 'Guidebook,' as I could get no clear account of it. In 1892, coming from Piz Blas to Santa Maria, we had descended the Cadlimo Valley on the E. side of the pass, but then, in ignorance of these parts, had made a great round towards the Uomo Pass before getting down on to the Lukmanier plateau. From below we saw what we believed * to be a short cut, and this we took in 1893. From Santa Maria we bore S.W. over grass slopes above the left bank of the Cadlimo or Medelser Rhein stream, and more or less by a cow track reached the Cassina la Bolla hut in 1 hr. 40 min. There is not the slightest difficulty in finding this way, which is by far the most direct. We proceeded up this desolate glen, my mind being full of the intricate history of the 'Mons Cadelinus.'† Keeping always on the left bank of the torrent, we passed the Stabbio di Mezzo hut in 40 min. from the Cassina hut, reached the shores of the Lisera lake in $\frac{1}{4}$ hr. more, and thence made our way over a wilderness of stones, past many small lakes, some of which only are indicated on the Swiss map, to the ridge of the pass (55 min., or $3\frac{1}{2}$ hrs. from Santa Maria), which lies much further back than one imagines. The view from the pass is one of absolute desolation, even by comparison with La Bérarde, or the Dévoluy. The topographical interest of the pass is the sole point in its favour. Near the pass we found bits of a track and some ruined cairns. We tried at first to descend to the right or N.W., but finding progress stopped by a great ravine, bore back to the left or S.W., keeping far to the left, and by many stones gaining the first basin or hollow. Bearing now to the right (N.W.) and crossing the stream, grassy slopes and bits of precipitous rocks brought us down to the second hollow or Pian Bornengo. At the further end of this we came to a stone hut (1 hr. 5 min. from the pass), soon after which a broad path was joined. This soon becomes smaller, and passes opposite to the Froda hut ($\frac{1}{4}$ hr.). Most of the upper huts in the Canaria glen are on the left bank of the torrent, but we followed the main path (often rough enough) which keeps throughout on the right bank, contrary to the indications of the Swiss map, adopted in my 'Guide.' The glen is very narrow and steep. We passed the Lower Pautan huts in 35 min., and after a stony descent in the full sun were thankful to turn the corner in order to leave our valley, and enter the hamlet of Valle ($\frac{3}{4}$ hr.), $\frac{1}{4}$ hr. beyond which is Airolo (2 hrs.

* See *Adula Alps*, p. 28.

† See my *Guide*, pp. vii.-viii.

55 min. from the Bocca). This pass is perhaps the shorter way from the Lukmanier to the St. Gotthard road, but it is far less picturesque than the round by the Uomo Pass, and the finely placed inn of Piora, at the S.W. end of the great Ritom lake.

Here our wanderings in the Adulas ended for 1893. They do not contain any very high or difficult summits, but abound in lovely bits of scenery; while the inhabitants, though unused to strangers, are well-to-do, and no more civilised than is usual in remote Alpine valleys. Hence the rare travellers who pass are sure of a hearty and genuine welcome, which carries one's mind back to the days when Grindelwald and Zermatt were the haunt of true lovers of mountains.

In June, my friend Herr Emil Huber, of Zürich (the chief explorer of the Selkirks in North America), made two most interesting new routes in the Adulas, of which he has been kind enough to send me notes, supplementing his brief account in 'Alpina,' No. 2, pp. 16, 17. Accompanied by the guide Josef Gamma, of Göschenen, he made (June 14) the ascent of the Pizzo Columbe,* direct by the steep rocks of the W. face, in $1\frac{1}{2}$ hr. from the Piano dei Porci, and descended by the N.E. side and the North Columbe Pass to the Piano in 1 hr. Both routes were new. Herr Huber has had the goodness to send me several beautiful photographs of this sharp little dolomitic peak, particularly one of our cairn, taken from the foot of the final rocky head. On June 17 the same party ascended the Piz Terri by the W. arête, and then, profiting by a hint of mine,† went down the S. arête (a new route) as far as the second deep gap, keeping either on the crest of the ridge or on its S.W. face. Thence they descended by steep slate slopes and a very steep snow gully on the E. face of this arête to a point about 2,400 m. high ($1\frac{1}{4}$ hr.), then turning S. and crossing the Vanescha Pass to Zervreila ($4\frac{1}{4}$ hrs.). Herr Huber has also most courteously sent me a photograph of the E. face of the Terri, with his route marked on it.

Dr. Darmstädter's detailed account of his important journey in the Adulas has now appeared in the 'Zeitschrift' of the German and Austrian Alpine Club, vol. xxiv. pp. 217-248.

I may mention, too, that in the 'S. A. C. Jahrbuch,' xxviii. pp. 353-5, will be found an account of an ascent of Piz Borel (2,875 m.±) from the Pian Bornengo Pass. This was made in 1891, and the great cairn on the summit was supposed to be due to the Federal surveyors. A coloured panorama from the top is given. In July, 1893, Dr. Colin Campbell, of Dundee, made a most careful exploration of the minor summits of the Badus range, besides an ascent of the Piz Ravetsch,§ by way of Piz Alv|| and Piz Borel, descending to the Cornera glacier and the Passo Vecchio. He has very kindly sent me full notes of his climbs, but I hope he will soon describe them himself in these pages.

These notes will, I trust, be of use to those intending to visit the Adulas, and may serve to show how much exploration remains still to be done in purely Swiss ranges. Other less important notes I reserve for a future new edition of my 'Guidebook.'

* The second. See *Adula Alps*, p. 34. † *Adula Alps*, p. 75.
 ‡ See *Adula Alps*, p. 16. § *Adula Alps*, p. 17. || P. 12.

CORRESPONDENCE.

THE LATE MR. F. DREW'S IDENTIFICATION AND SKETCH OF K₂.

To the Editor of the ALPINE JOURNAL.

SIR,—In the 'Alpine Journal' for February, 1894, is a letter respecting the height of K₂ Peak, by General J. T. Walker, R.E., C.B., late Surveyor-General of India, and the reply to it by Mr. W. M. Conway, who questions the accuracy of its height as deduced by the Kashmir Survey Triangulation. However, it is not that point I deal with in this communication; I wish more particularly to call attention to a woodcut in the work 'Jummoo and Kashmir Territories,' p. 370, by the late Mr. F. Drew, given as 'K₂, 28,265 ft., as seen from Turmik.' This Mr. Conway has reproduced to support his views regarding the form of the actual summit. Peak K₂ has no saddle between two distinct summits. I felt sure if it had such a form, the surveyors, who carried out the triangulation work, would have observed as usual both points. Such a feature would be most useful to the topographer, and facilitate the identification of his plane table points, which often show for only a few minutes amidst the clouds that surround them. I should certainly have noticed such a marked outline, but I have only two sketches of K₂ to assist my memory. The nearest view I got of it was from a point above the glacier about 17 miles distant, K₂ showing just above an intervening ridge, 11 miles across the glacier on its northern side. A copy of this sketch was published in the 'Illustrated London News,' February 27, 1892; it is a good reduced reproduction, but K₂ has been made far more pointed and needle-shaped than in the original. In neither of my sketches is there the slightest indication of two distinct summits as in the woodcut.

Mr. Drew writes thus:—'It is not easy to get a sight of this mountain; I once saw it from a distance of nearly 70 miles, standing up in the form given in the sketch, *clear above all the great ridges.*' The italics are mine. He does not give its bearing from where he saw it, and he says ridges, not ranges.

I would not recommend anyone to go to the Tormik Valley to get a fine view of K₂, and I am convinced that Mr. Drew was mistaken, and that he never saw that peak from the side of Tormik—*i.e.* from the westward. The peak which he did see, and which he made so good a sketch of, was K₁ (Masherbrum). From the neighbourhood of the Tormik Valley K₂ is not visible unless a peak of at least 18,000 or 19,000 ft. be ascended, and then if it came into view it would not show 'clear above all the great ridges,' but would lie beyond the great ranges of 20,000 ft. and upwards, and stand among a mass of snow-clad peaks of great altitude. From the summit of Mashalla (16,920 ft.), a principal station of the survey, further S. with a far more open ray, K₂ stands beyond, and among many lofty peaks and above heavily snow-clad slopes.

SKETCH MAP

to show

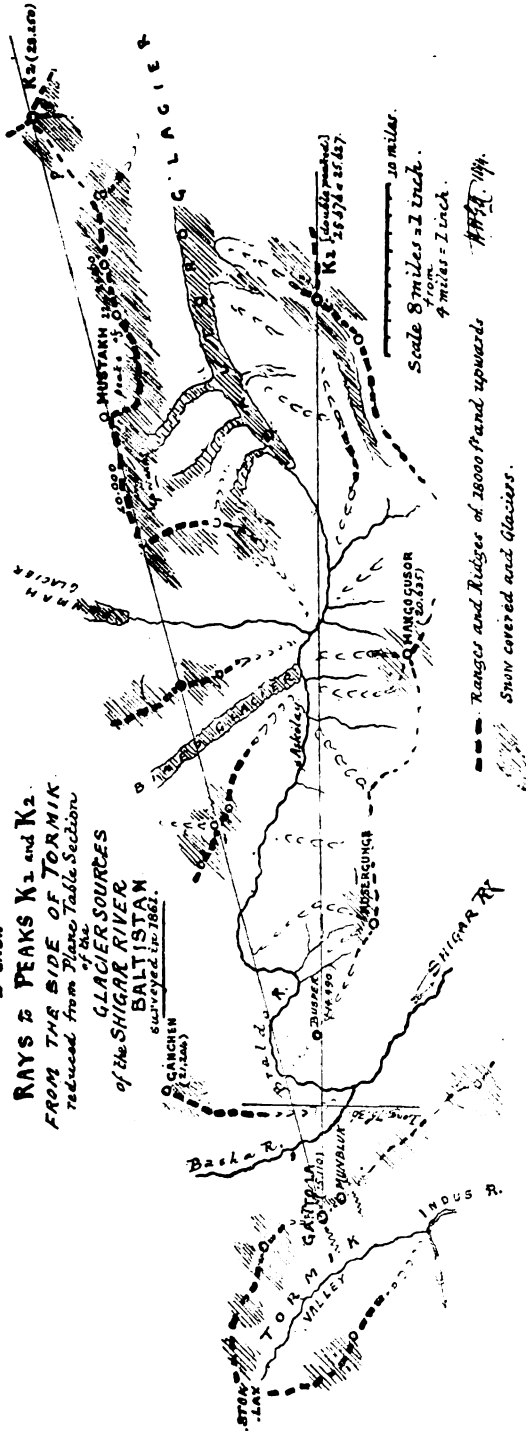
WAYS TO PEAKS K₁ and K₂

FROM THE SIDE OF TORMIK
reduced from Plane Table Section
of the

GLACIER SOURCES

of the SHIGAR RIVER

BALTIKISTAN
surveyed in 1862.



The ray from the side of the Tormik Valley to K_2 bears E.N.E. ; at about 25 miles distant it cuts the very high ridge, some 18,000 ft., which bounds the Biafo Glacier on the S.W. ; following the ray on at about 40 miles up to 50 miles, it lies upon the very lofty snowy mass west of the Mustakh Pass, and which is considerably over 20,000 ft. ; K_2 is 18 miles still further east of this, so that if visible from the highest peak near Tormik it could by no possibility present the appearance shown in Mr. Drew's sketch—viz. a very considerable snowy peak appearing above a flattish ridge quite bare of snow.

From Tormik, and very probably near the Ganto La, a pass Drew would cross into or out of that valley, when on one of his official tours, he would see K_1 , 55 miles away, precisely as depicted by him, and bearing due W., the only intervening ridge being that of Busper, 15,000 ft. and upwards, which has no snow on it at the northern end in the summer months. From the Ganto La the view up the Braldoh Valley is a grand one, and K_1 has a most striking appearance, and Mr. Drew might very easily have been misled as to his own position with respect to K_2 and its identity. In September, 1860, I ascended a peak called Munbluk, $1\frac{1}{2}$ mile S. of the Ganto La, and in the following year I crossed into the Tormik Valley by that pass. I think I should remember seeing K_2 and using it for fixing my position if it had been visible from that quarter of Baltistan.

Now, as to details, K_1 , or Masherbrum, has two well-defined points separated by a saddle. Both were fixed by the Kashmir Triangulation, being respectively 25,676 ft. and 25,627 ft., the lowest being to the S.W., whence the main ridge leads away in the same direction, agreeing so well with the woodcut. The dark, snowless, somewhat flat ridge rising higher to the S. can be no other than the Busper. The Trigonometrical Station is even indicated by the slight elevation on the left-hand side, the higher portion to the S. being Gurindo (*vide* Atlas Sheet). I must here call attention to the way this woodcut has been printed in the 'Alpine Journal.' It has been placed so crookedly that all the slopes are thrown out 8° to 9° from the position they are shown in Mr. Drew's work, this bringing down the higher mass on the S. (Gurindo) to the same level with the point on the N. (Busper Trigonometrical Station). Such an error as this so materially alters the original as to render it quite misleading.*

Until my attention was lately drawn to this woodcut, I had never looked at it critically, and noted the position on the map from whence it is said to have been taken. I have now laid off the rays on my plane table survey, a photograph copy of which, on the scale of the original, I fortunately possess. I cannot put my finger on any point west of K_2 where Drew, at 70 miles, could have obtained such a view as that given in his book. It is not clear to me why the question of K_2 having two summits has been raised at all. Where is its importance as bearing on the trigonometrical value of its height? Mr. Conway says, with reference to the point observed from his barome-

* Mr. Whymper, in an article on ascents in the Himalayas (*Leisure Hour*, January 1893, p. 193), illustrates it with a copy of this same woodcut of Mr. Drew's, and in this case Mr. Whymper's reproduction has been correctly set up.

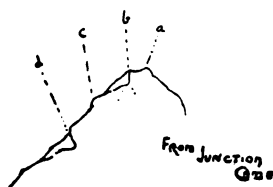
trical station on the Baltoro Glacier: 'It is just possible that a higher summit lurks behind what we saw.' If Mr. Conway did not see the highest point, and this was hidden, it follows that the angle of elevation would have been less than the one he actually observed, and the horizontal distance not being increased in the computation, it would bring out the height of K_2 even lower than what he assigns to it, viz. 528 ft. less than the trigonometrical, which General Walker points out was the mean of 'independent observations from nine of ten stations of the principal series'—in fact, few peaks have been so satisfactorily determined.*

The fact of a higher invisible point would not improve the computation, and his error must lie either in the observed angles or the barometrical record, perhaps both combined.

H. H. GODWIN-AUSTEN, Lt.-Col.,
Late Deputy-Superintendent, Survey of India.

Shalford House, Guildford, March, 1894.

Limits of space and the fact that the question under discussion is of small interest to European climbers necessitate brevity in my reply to the above letter. Colonel Godwin-Austen says that, ' K_2 has no saddle between two distinct summits.' I assert that it has—firstly, because I have seen them repeatedly, having had better opportunities of so doing than Colonel Godwin-Austen or any other person living; secondly, because the two summits appear on photographs now lying before me. The fact that the Indian Survey does not show them proves nothing; the map makes no pretence to detailed accuracy of that sort. The outlines here given show the blunt head of the mountain and its two points. I regret that they are not accompanied by another outline from Captain Younghusband's sketch, which wholly confirms them, if a photograph can be said to need confirmation. If Colonel Godwin-Austen's sketch does not show two summits, it is either because they were end on towards him when he took it or because his outline was not quite accurate. The north summit is the point of junction of the N. and E. arêtes; the south summit is the point of junction of the W. and S.W. arêtes. Their existence is as certain to any person who has been on the upper part of the Baltoro Glacier as is that of the nose on a man's face.



* *Vide* his letter since published in 'The Geographical Journal' for April, 1894, p. 339.

Tormik, it should be observed, is a valley some 14 miles long by 6 miles wide. Drew does not say from what part of the valley he saw K_2 . If it had been from the Ganto La he would not have said it was from Tormik. The peak in Drew's sketch is almost certainly K_2 and not Masherbrum. The S. ridge agrees in all details with the S. ridge of K_2 . I have marked the corresponding points with letters; and the agreement at the point d is practically conclusive. If Colonel Godwin-Austen's map of the S. side of Masherbrum is correct, that peak's S.W. ridge does not correspond in any detail with the ridge on the right in Drew's sketch. The N. face of Masherbrum is wholly and entirely different from the N. face of the mountain in Drew's sketch, as I pointed out in the February 'Alpine Journal.'

The part of K_2 shown in Drew's sketch is not more than the top 5,000 ft. of the mountain. This might be easily visible from parts of Tormik, clear over the top of anything along the ray in Colonel Godwin-Austen's sketch map.

Masherbrum (ticketed K_1 in the G.T.S. map) has a blunt top, which is not a curved snow-ridge like the top of K_2 , but a sharp rock-crest, as nearly as possible straight. The second point, or S.W. shoulder, seen from the S., would be foreshortened into a peak; but it is less of a peak and more a true shoulder than the lower peak of K_2 .

The flattish ridge in the foreground of Drew's sketch is evidently quite close at hand and by no possibility 16 miles away. So broad a piece of ridge would include many more points and irregularities in all parts of the Karakoram, and especially looking along the strike of the strata. If the map is correct the Busper ridge differs greatly from the one in the sketch.

I have the authority of the printers for saying that the block of Drew's sketch (the same that was used in Drew's volume) was printed straight in the 'Alpine Journal.' It looks to me as though it were crooked in the book. Mr. Whympers's reproduction of it was, of course, a photograph from the book.

The error, if any, in my observed angles was less than $1'$, for the angles were taken, face right and face left, twice over, with entire agreement. The barometric measurement of the height of the base is of course liable to error, and no one can assert positively that an altitude thus deduced is accurate; neither can any man be certain of the accuracy of an altitude measured through a refracting medium of unknown index. Since, however, the 9 several values for the height of K_2 have been published in the 'Geographical Journal' (it is unnecessary to reprint them here) it seems probable, as I said in my former letter, that the height deduced from them is closely approximate to the truth. I am glad of it; for the altitude of Pioneer Peak is thereby raised to 23,000 ft.

In conclusion I should like to add one word to my former letter. I have been informed indirectly that search has been made in the Indian Survey Office, and that no trace has been found of any letter from me applying for assistance. Seeing that several of my *registered* letters to England never arrived, this fact is not remarkable, but it disposes of any discourtesy I may have thought the Survey guilty of towards me when I was in India.

W. M. CONWAY.

ACCIDENT.

ON October 21, 1893, two Genevese travellers slept at the inn at Sixt, and started next morning (Sunday) at 5 A.M. to ascend the Vaudru (Les Avaudrues), on the northern side of the Fer à Cheval valley. They took no guides, as M. Eugène Sessely (a member of the Geneva section of the S.A.C.) had previously made the ascent of the mountain. They arrived safely at the summit by the ordinary route, and would have returned the same way, but M. Sessely was anxious to descend the steep south face of the mountain directly on to the chalets of Salvadon. This face consists of a series of steep banquettes of grass separated by walls of rock some 15 to 20 ft. high, and is extremely slippery and dangerous. His friend, M. König, was unwilling to accompany him, and returned by the ordinary route to Sixt; not meeting M. Sessely there, he concluded that he had preceded him to Samoëns and Geneva, and so made haste to follow him. Finding at Geneva that M. Sessely had not arrived, he returned to Sixt next day; and, as nothing was there known of the missing man, a search was instituted, and the guide Raffet and a peasant on Tuesday morning saw his body on one of the steep slopes of grass and stone on the precipitous S. face of the Vaudru. The body was finally recovered and brought down to Sixt on Wednesday.

It appears that on leaving his friend M. Sessely had at once climbed down the first little rock wall, *throwing his axe and knapsack in front of him*. He descended for some distance over similar ground, presumably repeating the manoeuvre, until at last he found himself unable to advance or retire, having jumped down a vertical face too steep or too high to reascend.

He remained some time on this banquette and wrote a pencil letter, which was found on his body, in which he asked pardon of his mother for the sorrow he was likely to cause her, and hoped that his friend had safely arrived at Sixt. He then apparently attempted to jump down the last wall; but the distance was greater than he imagined, and he fell, rolling a considerable distance over the stones. This fall proved fatal. His watch stopped at 12 (midnight?)

Exactly how long he remained on the face of the mountain before his last fall it is impossible to say, as his body was found on Tuesday and he parted from his friend on the Sunday. It seems likely that he may have descended to the last banquette on the first day, and remained there until rendered desperate by hunger and thirst.

His body was brought down to Sixt and buried.

This is a kind of unnecessary accident which, there seems some reason to fear, may become more frequent in subalpine districts, where the means of communication with the neighbouring towns are annually being improved. One result of the facilities given by the road railways in Savoy for reaching spots such as Sixt is that persons who have little or no experience in mountaineering avail themselves of a short Saturday to Monday holiday to make ascents which are much more difficult and dangerous than they imagine. Under such cir-

cumstances an accident is sure sooner or later to happen. It is perfectly extraordinary how indifferently many of the tourists are provided with the usual mountaineering appliances, such as nailed boots, ropes, and ice axes. Only two summers ago a party of young Genevese clerks made a Sunday ascent of the Buet. Their chief food apparently consisted of bottles of wine, and in descending they were not as cautious as they might have been. One of the party slipped on a steep snow slope, and falling a considerable distance hurt one leg so severely that it was thought to be broken. His companions helped him along for an hour or two, until the party arrived at the upland sheep pastures of the Beaux Prés, where finding a shepherd—half-witted by-the-bye and unable to speak any known language—they left him, and went on to Sixt and Geneva. The only thing they did for him was to give him his return ticket from Samoëns to Geneva. He had no money and no food. The shepherd did what he could for him, but the injured man lay out all night in the open air with only a sheepskin to cover him. Next morning a man from the cantine at Les Fonds, who had been casually told by his companions that their disabled comrade was on the mountain-side, went up to the Beaux Prés and found him there. By this time it was evident that his leg, though badly bruised (his boot had been torn off his foot in his fall), was not broken, and so with help he reached Les Fonds, and later on got back to Sixt; and so 'all's well that ends well.' The whole proceeding is an excellent example of the unnecessary danger which inexperienced people are apt to incur who venture upon mountains which look to them easy, and indeed are easy for the practised mountaineer. All the ordinary dangers of climbing are increased tenfold when the traveller has no idea how to protect himself against bad weather, or how to provide himself with the necessary food and clothing suitable for the work he is going to undertake, and yet thinks he can safely dispense with the services of a guide.

After all, this man was more suitably equipped as a mountaineer than another traveller who four or five years ago attempted to ascend the Buet in *carpet slippers* without nails. He came to grief long before he had reached the end of the path, and escaped with a bad scraping and a sprained ankle, and very lucky he might consider himself.

A few examples of this kind make one alive to the exceeding danger of this form of mountaineering.

ALPINE NOTES.

A CAUCASIAN CLIMBER'S GUIDE.—Mr. Douglas Freshfield, with the assistance of Mr. Mummery, Mr. Woolley, and other recent travellers in the Caucasus, has in preparation a Climber's Guide to the portion of the Caucasian chain between Kasbek and Elbruz. It will contain a complete table of routes from England, with time tables, cost, and a selec-

tion of routes to the mountain centres from the chief towns on both sides of the chain, as well as such details as to the topography of each district and the expeditions already accomplished as can be collected from mountaineering journals. Four district maps will be given, and probably a few outlines from Signor V. Sella's panoramas. As two of the maps, originally produced for the Geographical Society, have been taken off the stone, the edition will be necessarily limited to 150 copies. It is hoped to issue the book in the spring of 1895.

OBERSTORF, IN THE ALGÄU.—Only three hours' rail from the Lake of Constance, and accessible also by fine passes from the Vorarlberg, the district round Oberstdorf deserves more attention from English tourists and mountaineers than it has hitherto received. The village itself is now better provided with accommodation than formerly, and this summer the charmingly-situated and well-conducted Pension Rubihaus will be considerably enlarged and improved. In the side valleys, which branch like a fan to the southward, several chalet inns and no less than five Club huts facilitate excursions and ascents in the groups of Dolomite peaks forming the watershed between the Iller and the Lech. There is much more climbing here than might be expected where none of the peaks reaches 9,000 ft.

The extraordinarily steep slopes of the Höffatz and the Schneck and the remarkable obelisk of the Trettachspitze, the Wilden, and the peaks of the Hornbach chain afford amusement even to first-rate cragsmen.

To the geologist the district offers manifold attractions, and at the same time owes no small part of the charm of its scenery to the alternation of its Dolomite and Jurassic crags with extensive beds of Algäu slate and flysch, which are everywhere clothed with the rich pastures that make Algäu famous for its dairy produce.

An admirable little guide to the district, by Professor Thürling (proprietor of the Rubihaus) is published by Lampart, of Augsburg.

E. T. C.

THE S.W. FACE OF THE TÖDI.—Since writing my note on the ascent of the Tödi by the W. arête (see 'A. J.' xvii. pp. 56–60) I have come across some small bits of evidence which clear up two points as to which I was then in doubt. Both refer to the S.W. slope of the mountain between the Ruseinlücke and the W. arête.

1. It seems pretty certain that the *two hunters*, who, in 1824, made the first ascent of the highest peak of the Tödi, mounted by the S.W. face. It is expressly stated by one of them that they mounted direct from the Bleisasverdas Glacier at the foot of this face ('S. A. C. Jahrbuch,' i. p. 63). It is improbable that they would have gone from this glacier up the very difficult gully leading to the Ruseinlücke, and had they gone by the W. arête it would have been natural to state this definitely. There is too indirect evidence that they went up this face. Father Placidus expressly states ('S. A. C. Jahrbuch,' xvi. p. 498) that from the same Rusein hut he climbed up to the right of the line taken by the two hunters. Now it is generally allowed

that on this occasion the Father and his servant reached the gap later called the Porta de Spescha, and this would agree very well with the statement that they mounted to the right of the hunters' route. It is further to be noted that the hunters never came to the spot attained by the Father, for he states distinctly that he only rejoined them at the Rusein hut, though from his highest point he had seen them climb up the final peak. All these indications agree, and so I think it is extremely probable that the hunters made the first ascent of the Tödi by way of the S.W. face.

2. In my former note (p. 60) I was puzzled by the route taken by *Herr Hauser's party* in 1869. The description seemed to point to the S.W. face, but he stated so clearly that he reached the Ruseinlücke that I felt bound to accept his definite statement. I have since come across a note by Herr Hauser ('N. A. P.' iv. pp. 112-13), which explains the whole matter. His Ruseinpforte is not identical with the Ruseinlücke. The former is to the N. of the Piz de Dor (formerly called Bleisaverdas), and is under 100 mètres below Piz Rusein; the latter is to the S. of the Piz de Dor, and about 240 mètres below Piz Rusein. Herr Hauser's party thus, as I originally supposed, mounted the S.W. face to a notch on the S. arête high above the true Ruseinlücke.

W. A. B. COOLIDGE.

NEW INN ABOVE SAAS.—Zurbriggen, the keeper of the Monte Moro Hotel at Saas Grund, will open, on July 1, a new inn on the Trift Alp, near the foot of the Laquinhorn, and at an altitude of about 8,800 feet. The situation commands a superb view of the Mischabelhörner and the Fee Glaciers.

ATTEMPT ON THE ECRINS DIRECT FROM THE GLACIER NOIR.—Through the courtesy of M. A. Reynier, of Grenoble, we are enabled to lay before the readers of the 'Alpine Journal' an authentic account of a very daring, though unfortunately unsuccessful, attempt made by that gentleman in 1893 to attain the summit of the Ecrins direct from the Glacier Noir. The party consisted of M. Reynier, of the guide Maximin Gaspard, and of the porter, Joseph Turc. They bivouacked on the left bank of the Glacier Noir, just at the foot of the Barre Noire, and started thence, at 3 A.M., on August 9, 1893. Mounting first the medial moraine of the glacier descending from the Barre Noire, then that glacier till it became too steep, they bore W. and gained the rocks on its right bank (1½ hr.). Going up these to the upper end of the glacier, and then over a small snowfield (stretching to the W.), they gained the foot of a gully, swept by a waterfall, and climbed up this gully to the upper glacier (1 hr. 5 mins.). This glacier was mounted in a N.W. direction, leaving the gully running up to Dr. Güssfeldt's Brèche des Ecrins to the right. At the upper end of the glacier a steep and lofty gully (overhanging at the summit) was scaled with great difficulty to a notch (2 hrs.). This notch is between the main S. wall of the Ecrins and the head of a secondary rib of rock which here abuts on that wall. The direct route towards the N.W. is here cut by a great perpendicular wall. The party were therefore forced to the N.E., and clambered up a long, winding shelf or ledge in the rocks. This becomes narrower as it mounts, and is

-exposed to falling stones, while the rocks of the ledge are rotten, specially in its upper portion. Twice it bears N.W. towards the summit of the Ecrins, but in either case is cut by the same great wall already encountered at the notch below. A long gully, with a last overhanging bit, led to the crest of the E. arête of the Ecrins at 2.50 p.m. (about 5 hrs. from the notch), 9 hrs. 20 mins., without halts, having been consumed from the bivouac. A cairn was built on the arête, and the descent made by the usual route down the N. face to the Col des Ecrins, La Bérarde being gained at 9 p.m. The height of the point attained on the E. arête is estimated at *about* 80 mètres (265 ft.) below the summit of the Ecrins, and about 50 mètres (164 ft.) above the bergschrund at the base of the N. face of the peak. It is on a level with the central part of the 'Couloir Whymper' (about 4,030 m.). The interest of this bold attempt lies in the fact that it is the first attempt made to scale the true S. face of the Ecrins. Dr. Güssfeldt, in 1881, took a more N.E. course, and only gained the depression (about 3,750 mètres, or 350 mètres below the summit of the Ecrins) between the Barre Noire and the Ecrins, this point being a considerable distance below the bergschrund at the foot of the N. face of the peak (about 3,970 mètres). On the other hand, the usual route up the Ecrins from the Col des Avalanches lies up the S.W. bit of the S. face. The whole of M. Reynier's route can be followed on No. 522 of the collection of photographs published by Signor Sella, but the upper bit of the route is better seen (though much foreshortened) on No. 507 of the same collection. No. 507 is taken from the Pic Coolidge, and No. 522 from the Pelvoux.

TO THE GEMMI BY THE GRIMMI.—In June, 1893, I found myself once more bound from Grindelwald to the Gemmi. Many a time had I been up the always beautiful Kander valley, so that I now looked out for some variation. I happened to remember a mysterious pass called the Grimmi, and, as a little training was necessary before starting serious mountain-climbing, I resolved to go in search of this pass. I was all the more tempted to do so because, save a few very vague descriptions in the guide-books, I could find no account of this passage except in Latrobe's 'The Alpenstock' (2nd edition, 1839, pp. 223-5).

Hence it was that on the evening of June 9 young Christian Almer and I took up our last year's quarters at the hospitable Krone at Erlenbach, in the Lower Simmenthal. In 1892 we had made the ascent of the Stockhorn thence, and as Erlenbach was Latrobe's favourite starting-point, so it was a natural one for us, about to follow in his tracks.

Next morning we set off on our three months' round from Grindelwald at 7.15 a.m. only, as I was still poorly and wished to take things quietly the first few days. We crossed the Simme by the bridge just under the village, and then followed a pleasant path through woods and meadows which led us round a shoulder to the picturesque hamlet of Diemtigen (40 min.), the principal village in the long valley of the same name which we were to follow to our pass. Beyond, the *char* road descended through more woods in order to cross the valley stream to the Horben inn (35 min.), but soon recrossed it, and, passing through

a gorge, emerged not far from Wampflen (25 min.). This brought us to the middle basin, or reach, of the valley—a fertile green hollow strewn with houses. Passing by Riedli (Hôtel Helvetia), we walked across the hollow, crossed the Narrenbach (50 min.), then the Filderich torrent. A sharp ascent led up to the hamlet of Thiermatten (Hôtel Helvetia) (35 min.), where the *char* road comes to an end. We had now gained the upper basin of the Diemtigen valley, called Schwenden. Our pass, or rather the ridge over which it lay, rose in front of us. Crossing the Filderich once more before Wartannen (20 min.), we mounted the green chalet-dotted promontory of Egg (long seen from afar) to the Lower Nidegg huts (40 min.). Here, like Latrobe, we soon began to suffer from the numberless cow paths branching off in various directions. We chose the wrong one, and had a steep climb towards the Stieren Grimmi huts, but before reaching them we found out our mistake, descended to the wooded Nidegg gorge, and regained the right path on its left bank some way beyond the Upper Nidegg huts (40 min.). A very steep, zigzag path now led up through woods to the Kuh Grimmi huts, 1,741 m. (40 min.), where we called a halt for dinner. Already the great heat, which was the characteristic of the summer of 1893, had much affected me, and I was really glad to rest awhile and look down on the Schwenden basin, whence we had come. From these huts we mounted leisurely over many green knolls (leaving the huts marked 1,841 m. on our left) and by a small snow slope (no doubt later non-existent) at last reached the Grimmi Pass (50 min.) in $6\frac{1}{4}$ hrs. slow going from Erlenbach. There is a hut on the crest of the pass, which is marked 2,025 m. (6,644 ft.) on the Swiss map. The view looking back was wild and striking, while on the other side the green glen of Fermel lay at our feet. The Albristhorn and Gsür made a great show, considering their height.

We descended by a path which soon led through a band of woods to the level of the Fermel glen. We had intended going on to Matten, and so up to An der Lenk, but, as I was tired with my first walk, Christian suggested that we should try to find quarters in the Fermel glen itself. A man whom we met informed us that the schoolmaster received into his house the few strangers who passed this way. We at once obtained precise directions, and in an easy hour from the pass reached the small hamlet (the chief in the valley) of Ziel, where we were most hospitably taken in at once by the schoolmaster, Herr D. Spöri. We found him a most pleasant companion, and he recalled to my mind what I had read of his fellow-instructor Kehrli at Giessbach in the old days. Rarely stirring from his valley, so that Grindelwald was to him a strange country, he was a most enthusiastic botanist. At the moment of our arrival his son had just come over from Adelboden (where he combines the functions of schoolmaster and guide) with a plant new to his father, whom we found engrossed in turning over his Latin botanical books in order to identify it. Altogether I carried away the next morning the most pleasant recollections of our night at Fermel and of our delightful old host.

On the 11th we went up to the head of the Fermel glen, and mounted by grass slopes and snow to the Fermelkrinden Pass

(2,854 m., 3 hrs.). Hence we followed the E. arête of the Albristhorn (2,764 m.)—then so laden with snow that it took us all but 2 hrs. up—to the summit of that peak, which ought in less cloudy weather to command a very fine view, as it is the monarch of the Niesen range. Returning to the pass in 35 min., we went down by stones and grass till near the Furggi hut (25 min.). Leaving the easier but more roundabout path to the S.W., we took the track to the S.E. It proved very rough and stony, traversing many deep ravines, so that we were very glad to reach the pretty Stiegelschwand hollow (50 min.). A pleasant walk of $\frac{3}{4}$ hr. led us round a shoulder to Adelboden, which is not seen till one is quite close to it. The Hôtel Wildstrubel (the larger and more modern of the two inns) was not yet open, so we had to go, as in 1892, to the Adler. Frau Hari was everything that could be desired as a hostess in an unpretending fashion, but her charges were distinctly not low, and I am not the only person to complain of this, I believe.

Some years before intense heat and fresh snow (in June) had compelled Almer and myself, coming from Schwarenbach, to content ourselves with the southernmost of the three peaks of the Wildstrubel, which is 2 mètres (6½ ft.) lower than the E. and highest. Hence the latter had to be done. We added Johannes Pieren, the best guide of Adelboden (we were very well satisfied with him in all respects), to our party, and we all went up on the afternoon of June 12 to sleep at the Engstligen Alp huts (2¼ hrs. by the steep but quaint path called the Geissweg). We were much surprised to find a *penion* of some size being built above the right bank of the torrent, on the edge of the cliffs looking down towards Adelboden, each plank coming up singly on a man's back. It will be a very convenient halting-place between Schwarenbach and An der Lenk, and will save the traveller the descent to Adelboden. June 13 was a very fine day, and we got up our peak all right (4¾ hrs. in very deep snow under a hot sun), climbing straight up the N.W. face, without making the usual round by the Ammertten Pass. On the way I became more than ever convinced that Herr Wäber* is right in holding, against Mr. Ball,† that it is highly improbable that there ever was an old pass, called Strubeleck, between the E. summit of the Wildstrubel and the Steghorn to the E.

From the summit we had the first of many fine views during the summer, but on the descent we all, and I especially, suffered so much from heat and from the absence of a breeze in the Lümmern valley that we were half dead with thirst and weariness (it was the first climb of the season for all of us) when we reached (2 hrs. 25 min. from the peak) the Hôtel Wildstrubel, on the crest of the Gemmi. The hotel had been much enlarged since I last passed by, and had, luckily for us, been opened for the season the day before.

And this is how we went by the Grimmli to the Gemmi.

W. A. B. COOLIDGE.

DENT DU REQUIN.—The name of the peak should be thus written.

* *S. A. C. Jahrbuch*, xxv. pp. 535-45.

† *Central Alps*, p. 47.

and not *Dent de Requin*, as in the February number of the 'Alpine Journal.'

ROCKY MOUNTAIN SICKNESS.—The allusion by Dr. Gregory to this in his paper on Mount Kenya, confirming the experiences of Professor Bryce and myself, has awakened some interest; and as I only touched briefly upon this subject in my paper on 'Mountaineering in Southern Colorado'* I venture to state my sensations a little more in detail. I was staying principally in the Valley of Trout Lake, at an elevation of 9,700 ft. above sea-level. On most days I had to ascend an additional 1,000 ft. on the San Bernardo Mountain, and the act of mounting these invariably made itself felt in a quickening of the pulsation of the heart, breathlessness, and certainly some muscular weakness, but at no time did I suffer from headache, nausea, giddiness, or feverishness. I noticed that my companions, natives of the place, in nearly every instance suffered more than I did, although acclimatised by residence. Indeed, surprise was expressed by them that I was able to make the ascent with comparatively so little inconvenience.

I experienced the *most* unpleasant sensations during my expedition to the foot of the Lizard's Head. Here, at a height of from 12,000 ft. to 13,500 ft., I suffered from the symptoms above described in a very marked degree, and, indeed, lost the power of exertion to such an extent that I was glad to return without attempting to reach the summit of Sunshine Mountain. I found that I could go barely twenty paces without pausing to take breath, and to have prolonged the expedition to its bitter end would have been for me a physical impossibility. I was almost giving out entirely as it was!

On this occasion my companion, Mr. Douglass, a resident at San Bernardo, was less affected than I was, but he too was quite ready to turn back when I gave the word.

My appetite in the Rockies was never much impaired, but I certainly did not experience that same readiness for meal-time which always besets me in the Alps.

I dismiss the suggestion that I was out of condition. I am seldom that to any great extent, and certainly was not in the Rockies, and that condition had little to do with it is proved by the fact of the natives suffering in the same way.

My sensations at first very much surprised me, for in the Alps I had never cause to complain of inability to 'go,' and had never, even at much greater altitudes, experienced anything quite like them.

I think Mr. Conway's theory that a very dry is more favourable to mountain sickness than a moist climate, is quite likely to be the true one, and it is a fact that in our ascent of Mount Wilson (14,309 ft.), where we were overtaken by a storm, we both suffered rather less than on Sunshine Mountain when it was fine and hot.

Few mountain districts can be freer from moisture than the Colorado Rockies. Except for storms, the weather is usually perfect, and on neither of the two occasions on which I visited those parts did I experience a single wet day.

* *Alpine Journal*, vol. xv. p. 480.

Gray's Peak, where Dr. Gregory underwent similar sensations, is some 400 miles north of the San Juan district, where I was staying.

PERCY W. THOMAS.

THE SUSTENSPITZ (2,931 m. = 9,617 ft.).—Messrs. E. F. M. Benecke and H. V. Reade, leaving Stein at 6 A.M. on July 30, 1893, reached the Sustenspitz, by way of the Susten Pass and N.E. arête, in 3 hrs. After an hour spent in a vain attempt to see something of the surrounding country, they left in a snowstorm, intending to descend by the N.W. arête, but in the darkness got too far to the left, and descended the W. face instead, by gullies and rock-ribs, and finally grass slopes, to the middle of the lower ice-fall of the Steinengletscher. The rocks, and still more the grass, were very slippery; but, though the face is decidedly steep, it would present no difficulty under ordinary circumstances. The glacier, however, is thoroughly bad, and in places impassable, it being necessary more than once to creep under the ice between glacier and mountain, which is a damp and cheerless proceeding at best. The descent to Stein took 6 hrs., of which $1\frac{1}{2}$ hr. were spent on the glacier.

THE LAUTHOR.—This pass seems to have hitherto enjoyed a rather evil reputation, both for danger and also for the great length of time required to cross it. In the latter respect, at any rate, it seems to have been maligned. On August 26, 1893, Messrs. E. F. M. Benecke and H. V. Reade, with Fritz Graf and C. Schlunegger, of Lauterbrunnen, left the Roththal hut at 3.20 A.M., and cut up the couloir to the point where it divides (well marked on the Siegfried map), which they reached 3 hrs. after the start. Here they took to the rocks between the two branches of the couloir, and followed them in 3 hrs. 40 min. to the top of the pass. These rocks are very loose till just below the top, but, except for one piece about 5 mètres in height, present no particular difficulties. From the pass the party made straight for the Ober Mönchjoch, which they reached with ease in a little over 2 hrs. The whole expedition (including halts) from the Roththal hut to the Bergli took rather less than 12 hrs. As for the danger, no stones fell while the party were in the couloir (*i.e.* till 10.40 A.M.), except such as they brought down themselves, though there were signs here and there of where things come. Perhaps nothing much happens till the afternoon, as the whole mountain face is due west. For this same reason, however, it may be remarked that the climb is a most terribly cold one.

WHERE IS THE MONS JUBET?—In the list of Addenda and Corrigenda to the 'Lepontine Alps' volume of the 'Climbers' Guides,' which I issued at the end of my 'Adula Alps,' in the same series, in the spring of 1893, I asked this question (p. 186). I was in despair of solving the puzzle, and so appealed for outside aid. My appeal brought me a most interesting communication from Dr. Dübi, the present editor of the 'S.A.C. Jahrbuch,' which called my attention to several points I had overlooked. Thanks to this courteous act, and by the help of one or two small facts I have since lighted on, I am now in a position to give some sort of answer to my own query. Dr. Dübi must not be held responsible for all the following conclusions, though I think he would accept by far the greater portion of them.

The Mons Jubet appears first on the oldest known map of Switzerland, and the neighbouring regions, that of Conrad Türost, 1495-7 (facsimile edition issued in 1884, with vol. vi. of the series entitled 'Quellen zur Schweizergeschichte'), and next on Aegidius Tschudi's map of Switzerland, 1560 (facsimile edition issued in 1883). On both the mountain occupies about the same place, viz., S. of Münster in the Upper Rhone Valley, E. of the Doveria or Simplon Valley (Val di Vedro), W. of the Tosa Valley, and its upper part, the Formazza (or Pommat) valley. It is placed rather to the N.W. of the Formazza valley, while it is due W. (on Türost's map) of the 'Valldösch' or 'Valldossz' huts, which are clearly the Val Dolgia huts, on the Swiss side of the San Giacomo Pass. Stumpff in his Chronicle (p. 283b. of the 1548 edition) describes Pommat or Formazza as lying close to the Mons Jubet ('gleich neben dem Gebirg Jubet'). These are the three primary authorities, and, did we hear nothing more of our peak, all would have been well. At this point I unfortunately allowed myself, before Dr. Dübi set me right again, to be led astray by a remark of Simler's. In speaking of these parts,* he first mentions, on the authority of Sebastian Münster,† the fact that the mountain out of which the Rhone flows was formerly called 'Juberus' (in addition to other names), but now 'Furca.' He then adds, out of his own head apparently, that there is, close to Juberus, another mountain, the source of the Elma stream (in the Gehren valley), sometimes considered one of the sources of the Rhone, and that this mountain was named 'Jubet.' Further, he suggests that possibly this latter mountain is identical with that called 'Jovet' by the historian Paulus Jovius. Now Simler probably compared the two names Juberus and Jubet in order to get support for his derivation of the former name from that of the Juberi or Viberi, the ancient inhabitants of the Upper Vallais. But in doing this, while rightly, like the two old maps and Stumpff (p. 339), distinguishing the Furka (mentioned by all three) from the Mons Jubet, likewise mentioned by all three of our primary authorities, he falls into a great mistake as to the Jovet of Jovius. We have only to turn to the 'Historiæ Sui Temporis' of that celebrated Renaissance historian (who died 1552) (p. 236 of the 1550 edition, book xv.) to see that he is speaking of the two St. Bernard passes—Mons Jovis or the Great St. Bernard, and Jovettus, or the Little St. Bernard.‡ Hence Simler's conjecture is entirely wrong as to the Jovettus.

We arrive then at the following result with regard to these three very similar names:

1. 'Juberus' is the old name of the Furka.
2. 'Mons Jubet' is a mountain near Pommat or Formazza.
3. 'Jovettus' is simply the Little St. Bernard.

These names disentangled, we can return to my original question—

* *Descriptio Valesiæ*, p. 34 of the 1633 edition.

† *Cosmographia Universalis*, p. 332 of the 1550 edition.

‡ Vaaccarone's *Le Vie delle Alpi Occidentali*, p. 43, says that the latter pass bore from 1500 onwards the name of Mont Jovet, to distinguish it from the Mont Joux, its better known neighbour.

Where is the Mons Jubet? Mentioned only by the two old maps, and Stumpff, who all place it near Formazza, it is Simler alone who transports it more to the East, to the head of the Gehren valley. Now it happens that, overhanging Formazza on the W., is a very conspicuous peak, which is not merely the highest point, off the main range, between the Rhone, Tosa, and Ticino valleys, but still bears the name of Monte Giove (Mons Jovis). The Sardinian map calls it also 'Cima Rossa,' but the newer Italian survey drops this name, preserving the former only. I went up it on August 31, 1893, and found that it was in a very commanding position (see 'New Expeditions,' p. 49). The resemblance of the names Mons Jubet and Monte Giove may be purely accidental, but as the one peak stands in pretty much the position assigned to the other by early map-makers, and a careful chronicler like Stumpff, I cannot resist the conclusion that both names really belong to the same peak. Mons Jubet is, therefore, in my opinion, the present Monte Giove (3,010 mètres = 9,876 feet).

W. A. B. COOLIDGE.

REVIEWS AND NOTICES.

The Range of the Tödi. By W. A. B. Coolidge.
(London: T. Fisher Unwin. 1894.)

This is the volume of the 'Climbers' Guides' for 1894. It is the complement of the Lepontine and Adula volumes, the three, taken together, describing all the mountainous district which lies S. of the Rhone and Reuss Valleys, and between the Simplon and Splügen Passes. The Tödi volume deals with the great N.E. spur which starts from the Oberalp Pass and runs as far as Ragaz. Its S. limit is the Vorder Rhein Valley, while the Schächenthal, the Klausen Pass, a line drawn from Linththal town to Elm over the Kärpfstock, and then over the Foo Pass, and so down the Weisstannen Valley to Mels, indicate its N. boundary. It thus describes the ranges around the Maderanerthal, the Tödi and its neighbours, the great mountain circle which shuts in the head of the Elm Valley, as well as the ridges (little known to English travellers) on either side of the Calfeisen, or Upper Tamina, glen. As bits of these districts were explored by Father Placidus and other early travellers there has been considerable difficulty in ascertaining quite certainly which peaks exactly were ascended by these climbers. The history of, and all the numerous routes up, the Tödi are worked out in great detail. Besides the usual information as to maps, inns, Club huts, and printed books consulted, this volume has two special features. One is an investigation of the history of the topographical terms Crispalt and Vepcha Mons; the other is a sketch of the German-speaking Vallaisan colony (now no longer existing) in the Calfeisen glen.

A short statement at the end of the preface mentions the forthcoming volumes of the 'Climbers' Guides.' In 1895 it is hoped to publish part or the whole of Mr. Norman Neruda's 'Guide

to the Dolomites,' and in 1896 my own 'Guide to the Bernese Oberland.' The Guides for the Engadine (taking in all the ranges from the Splügen Pass to the Austrian frontier), and for the Tarentaise and Maurienne are in active preparation. There will then remain only the following (all more or less in preparation) to complete the account of the whole of the Western and Central Alps—Sustenhorn-Titlis-Dammastock group, Monte Viso district, and the Maritime Alps, with possibly a volume on the Wildstrubel-Diablerets and Dent du Midi-Buet groups.

W. A. B. COOLIDGE.

Geologia della Provincia di Torino. Da Dr. Martino Baretta.
(Torino: F. Casanova, 1893.)

This important work consists of a large-sized 8vo. volume and an atlas in folio, the former containing nearly 750 pages of text, the latter 15 double plates of maps and sections in colours. The text is divided into three parts, the first dealing with topography, the second with descriptive geology, and the third with economic geology. Evidently the work is the fruit of immense labour and research, and often indicates that difficult questions have been studied, not only in the library, but also in the field. The first part contains a minute description of the topography and orography of that portion of Northern Italy which falls within the province of Turin. It is not less studded with facts than a track in a Piedmontese valley with stones, which makes travelling a little laborious in the one case as in the other. Nevertheless this part of the book will be most valuable for purposes of reference. The second part gives a very full account of the geology of the district. The province, as is well known, consists of two very distinct regions, the one practically all mountains, the other all plains, the latter being the product of the former. Dr. Baretta gives an excellent sketch of the character and relations of the various rocks which make up the mountain region. He distinguishes these—rightly, as we think—into the following groups:—(1) Central gneiss and its associates. These form rudely elliptical masses, and are five in number. (2) The newer crystalline formations, of which a large part of the mountain region consists. These two rock groups are regarded by Dr. Baretta as belonging to the Archæan era, the latter being the more modern. This clear recognition of the pre-Palæozoic age of the major part of the Alpine crystalline masses will do much to dissipate the clouds which have been long hanging over these difficult but highly interesting rocks, and the student of Alpine geology will find Dr. Baretta's sections most valuable and suggestive. Possibly as time goes on certain details of his work may have to be modified. The age of some of the protogines, such as that of Mont Blanc, and of some of the augen-gneisses cannot be regarded as established, and certain of them may prove to be rather more recent than he supposes. Still we are convinced that representatives of the earlier as well as of the later Archæans occur in the Alps, and that he is right in referring the crystalline rocks in general to the pre-Palæozoic era. (3) Palæozoic formations. These are limited in extent and representative of the Carboniferous and (occasionally) the Permian periods. (4) Mesozoic formations, in-

cluding the Trias and some part of the Jurassic system. (5) Tertiary formations. These are developed in the hilly district near Turin, where the Eocene, Oligocene, Miocene, and Pliocene systems are represented. A little of the last occurs between Ivrea and Cuornè. (6) Post-tertiary deposits, including some preglacial gravels, &c., the moraines and beds of glacial age, and the post-glacial alluvium, gravel, and débris. The careful descriptions, maps, and sections make this one of the most interesting sections of the book. The last part of the work deals with economic questions, such as mines, forests, agriculture, and roads. The book, in short, is a complete memoir on the geology, orography, and physical history of a large and important district in the Alpine and sub-Alpine region, and will long remain a most valuable work of reference.

T. G. B.

Die Entwicklung der Probstei Interlaken im XIII. Jahrhundert. Von E. Tatarinoff. (Schaffhausen: Joh. Bachmann. 1892). 8vo. pp. vi. and 193. Price, 3 francs.

In the 'Alpine Journal' we are concerned with the higher regions of the Alps only, but this expression includes the mountain valleys, as well as the peaks which tower above them, and the passes which lead from one valley to another. Hence this work on the history of the house of Austin Canons at Interlaken should receive a warm welcome from everyone interested in the history of the Alpine valleys of the Bernese Oberland.

In form it is a dissertation presented to the University of Zürich for the degree of doctor by the author, a Swiss of Russian extraction, and it is ostensibly devoted mainly to the advowsons held by the convent in or before the first quarter of the fourteenth century. In fact it contains far more, and is really a history of the house from its foundation, about 1133, to the election of the Duke of Austria as its 'protector' in 1318, a continuation to the dissolution of the convent in 1528 being promised by the author. As it owned the advowsons of Grindelwald and of Gsteig (the mother church of Lauterbrunnen) from the twelfth century onwards, and acquired that of Hasli in 1272, it is obvious that practically the whole of the early history of these valleys is sketched in this most interesting and well-executed book. It is most curious to trace out (for instance) the slow but steady growth of the power and possessions of the Canons in the valley of Grindelwald. It was not till the purchase of the Mettenberg Alp in 1246 from its lord that the convent became the largest owner in the valley. In 1252 it bought the Wergisthal pastures, the limits being given in minute detail, and including mentions of the Kalli, the Boneren, the Kl. Scheidegg, and the 'Mons Egere.' As Herr Wäber, in his most important paper on the history of the names of the great Oberland peaks,* has pointed out, this is the first known mention of the name of a great Oberland peak. In 1302 the convent bought Itramen, and finally in 1323 it acquired all the rights of its 'protector' in the valley, of which henceforth it was the sole lord. These details help one to realise the true meaning of the term 'alps' before it was applied to summits, for

* *S.A.C. Jahrbuch*, xxviii. pp. 235-63.

pastures are far more necessary to Alpine valleys than icy peaks. It is, again, very curious to read of the purchase of the Sefinen pastures, above the Lauterbrunnen valley, in 1240, and of the long struggle about them which ensued, or of Gimmelwald, near Mürren, in 1244, or of the sale of the Wengern Alp in 1318 to the Duke of Austria, who later gave it to the convent. Like Grindelwald, Lauterbrunnen passed in 1323 entirely into the possession of the convent, though it was not till 1487 that the church of St. Andrew 'ad fontes limpidos' was built, and the parish of Lauterbrunnen separated from that of Gsteig.

There are numberless other interesting points on which I should like to dwell, *e.g.* the relations of the convent to its 'protectors,' and to the rising town of Bern, the story of the nunnery at Interlaken and the sad tales about the bad bread and gowns the Canons gave the sisters, the foundation (1279) of the town of Unterseen at the very gates of the convent and the precautions the Canons took to preserve their rights on the Bödéli, the gradual advance of the Austrian power in the Oberland, &c. But these matters can be best studied in Herr Tatarinoff's excellent monograph, which I commend to the attention of all who delight in the Oberland. Genealogical tables of the local dynasties and an appendix of original documents complete a really fascinating work. Its great drawback is that it has no index, a defect which it is to be hoped the author may make good in the promised second part of his study, to which I for one am looking forward with the greatest impatience.

W. A. B. COOLIDGE.

Wanderungen in den Ampezzaner Dolomiten. Von Theodor Wundt. (Berlin: Raimund Mitscher. s. d.)

This book, which is issued by the Berlin Section of the German and Austrian Alpine Club, is designed on lines similar to those of the same author's 'Besteigung des Cimone della Pala,' noticed in these pages a year since. It contains accounts of ascents of a number of the peaks in the neighbourhood of Cortina d'Ampezzo, and is lavishly illustrated with reproductions of the author's photographs.

A companion volume of this kind must inevitably challenge comparison; and it is high, but merited, praise of the present book to say that, on the whole, it is worthy of its predecessor.

The illustrations are certainly the most important part of the work; and, though a few of them are indifferent, the great majority are very good, and some, notably plates 11 and 24 ('Cadini del Neve' and 'Tofana') are of superlative beauty. It is interesting to note, by the way, that the negatives were taken on the much-abused Eastman film.

A number of the plates illustrate climbers at work, but these are, perhaps, of less interest than some of those in Herr Wundt's previous book, and there appears at times to be a tendency to sacrifice truth to effect. See, for instance, plate 7, where a member of the party is represented descending the chimney on the Kleine Zinne face-out, a method which the enterprising lady in question would, no doubt, be the first to scout. As studies of the anatomy of the peaks many of the plates are beyond all praise, and are heartily to be commended to the perusal of those who are disposed to under-rate the difficulties of Dolomite climbing.

It is not possible to speak in equally high terms of the text. Herr Wundt is such an admirable artist, such a keen climber and good sportsman, and we have so much to thank him for, that it is disagreeable to criticise his literary style; but it must be confessed that he has become terribly 'subjective,' that his perpetual analyses of his sensations are irritating, and that, to put it frankly, he gushes incoherently, and that not once only, or twice, but over and over again. All climbers know the feelings of awe and exaltation that the mountains inspire, but attempts to communicate those feelings by words are doomed to failure, and Herr Wundt succeeds worse than many of his predecessors.

By far the most interesting chapter, and one of permanent historical value, deals with the career of Michel Innerkofler, the most famous guide of this region, who was killed on the Cristallo Glacier in 1888. Michel must have been an exceptionally fine cragsman, and the lamentable manner of his death adds, if possible, to one's regret for his loss, for it seems almost incredible that one of the finest guides the Eastern Alps have produced should have come to grief over a straightforward crevasse which those accustomed to serious ice work would hardly consider a grave difficulty. This chapter also contains some admirably told anecdotes in Tyrolese patois, which will afford an excellent test of the reader's linguistic attainments.

The book, as a whole, is undoubtedly a success, and it is to be hoped that it is only the second of a long series. A. F. DE F.

Zeitschrift des Deutschen und Oesterreichischen Alpenvereins.

This volume (the twenty-fourth, 1893) has been issued to the members unusually late on account of delay in the completion of a map of a part of the Oetzthal Alps. Its contents are about equally divided between practical articles connected with the Alps and descriptions of mountaineering expeditions. Professor Schindler describes the agricultural conditions and methods on the north and south sides of the Brenner Pass. Herr E. Brückner writes on the influence of the snow-covering on the climate of the Alps; Herr E. Glück on Roman and pre-Roman cultivation in the Bavarian Alps. Dr. R. Schäfer contributes an article on Alpine geology intended specially for persons not acquainted with the subject. Herr Gustav Bancalari writes on human habitations and their development in the Eastern Alps. Dr. M. Höfler contributes an ancient Upper Bavarian calendar containing many curious medical receipts. Herr S. Simon, in an amusing article entitled 'Alpine Chatter of a Surveyor,' compares the growth of an Alpenverein to that of a human being: in the beginning, mountain-climbing only for amusement (Bergsport); later, interesting and practical results sought to be obtained from it in almost every branch of science. In the former he adduces some remarkable performances of Herr Rüeggsegger, of Thun, a clerk in an office, who used on a holiday to take the following walk: By S. side of the lake to Lauterbrunnen, cross both Scheideck Passes to Meiringen, to Lungern on the Brünig Pass, and thence over the Brienzergrat to Interlaken, and home by N. side of the Lake of Thun. Estimated distance 120 miles in 24 hours!

Sometimes he used to get the pastor of a village to certify the time of his arrival, so that there should be no doubt of his having been there. Dr. Ludwig Darmstädter gives an account of his excursions in the district between the Lukmanier and the Splügen and Bernardino Passes. This was the 'Excursions Gebiet' of the Swiss Alpine Club in 1872, but owing to bad weather little was done in it, and since that time, partly owing to bad accommodation and partly to want of good guides, it had been very little visited, so that Herr Darmstädter with his guides, Joh. and Jos. Stabeler, of Taufers, found plenty of virgin peaks. The work was made easier by his having with him a tent and a supply of tinned provisions. The strangest experience they had was on the ridge between the Vernokhorn and Plattenberg, where they had no foothold, and had to work along holding on the narrow edge by their hands. The slight ups and downs of the ridge were very troublesome to pass, and this traverse lasted three quarters of an hour! The tour was completed by an ascent of the Rheinwaldhorn by a new route from the Guarnajo Alp on the S.W. The ascent to the Bresciana Glacier was difficult. Herr Ludwig Purtscheller describes two visits to the Maritime Alps in 1890 and 1892. He was, as usual, without guides. On the Rocca Rossa he had a narrow escape in a thunderstorm. He was everywhere well received by the inhabitants, and complains only of the too frequent attentions of the *doganieri*, who sometimes even pursued him up a mountain.

Herr Gustav Becker describes the successive attempts to climb the Aiguille du Géant, which was finally made accessible by the so-called 'mining' operations of J. J. Maquignaz in 1881. He himself made the ascent on August 5, 1892, with Simon Fankhauser (Zillertal). This is the second time that a tourist has made the ascent with only one guide. Lieutenant Otto Jäger describes his experiences in the Wetterstein Gebirge when employed on the Ordnance survey. Dr. Theodor Petersen, on August 5, 1892, made the first ascent of the Schwabenkopf (3,408 mètres = 10,181 ft.) between the Pitzthal and Kaunserthal. Dr. Guido Eugene Lammer, one of the boldest and rashest of guideless climbers, describes an ascent of the Gross Venediger by the N.W. face. He prefaces this by an account of the attempt made by the Archduke John in 1828. On August 24, 1891, after several snowy days, he started from the Kürsinger Hut. He gives no times. It was only after a dangerous and almost desperate passage that he reached the highest point to feel that return either by the line of ascent or by N.W. ridge or by W.S.W. ridge was impossible in the state of the snow, and the only possible route was by crossing the "Gwächte" to the Vorgipfel. He had already been four times on one or other of these summits, but had never passed from one to the other. This passage is sometimes made across the steep face towards the Dorfer Kees, but the new snow lying a foot thick made this impossible. Over the 'Gwächte' he must go. The passage lasted forty-five minutes, but he had become years older. Many times as he sank in the soft snow he gave himself up for lost, and with a hoarse shout of joy he joined the track of a party who had ascended the Vorgipfel the same day. Should he live to a hundred years old he will never think of that passage without a shudder. It

must be admitted that Dr. Lammer has a fine capacity for getting into dangerous situations unnecessarily.

Herr Anton Heilmann describes a series of tours between the Spitzkofel (Lienz) and the Kellerwand (Plecken Pass). Herr Hans Wödl gives us another chapter on the part of the Niederen Tauern between the Predigtstuhl and the line of railway between Admont and Leoben. Professor E. Richter describes the variations of the glaciers in the Eastern Alps, between 1888 and 1892. Herr F. Seeland adds another chapter (XIII.) to his studies of the Pasterze Glacier. Herr K. R. Koch describes an attempt to construct an artificial glacier by the use of a kind of pitch (*Kolophon-Pech*), whose plasticity varies with the temperature. The map, whose production delayed the delivery of the volume, is a sheet (section Weisskugel) of the map of the Oetzthal and Stubai Alps. It is on a scale of 1 to 50,000, and has been executed by the chartographer S. Simon (Interlaken), mentioned above. The rocks are coloured brown, the contour lines on the glaciers are blue, elsewhere brown; the light comes from the N.W., but the shadows are never made deep enough to impair the clearness of the names.

PROCEEDINGS OF THE ALPINE CLUB.

A GENERAL MEETING of the Club was held at the Club Rooms on the evening of Tuesday, February 6, Mr. DOUGLAS W. FRESHFIELD, *President*, in the chair.

The following candidates were balloted for and elected members of the Club: Walter Barrow, Rev. Colin Campbell, William Pickford, Q.C., Claud Schuster, Alfred H. Tubby, Henry Dunn Waugh, Arthur Henry Worthington.

The PRESIDENT announced that Mrs. Tyndall intended to publish a biography of the late Professor Tyndall, and she hoped that any members of the Club who possessed any of his letters relating to Alpine subjects would send them to her; and also that any members who had been with him in the Alps would inform her of any incidents which might be of general interest.

The Hon. Secretary and Treasurer presented the accounts for the year 1893, which were unanimously passed.

Dr. J. W. GREGORY read a paper entitled 'Mountaineering in East Equatorial Africa, and a Partial Ascent of Mount Kenya.'

Mr. W. M. CONWAY asked whether Fundi's belief in the bewitching power of mountains was common to Africans generally, as he had met with a somewhat similar superstition in the Himalayas. What Dr. Gregory had said as to the difference of the effects of diminished pressure on Kenya and in the Rocky Mountains he considered was of great interest. He remembered that Mr. Percy Thomas experienced ill effects in the latter at lower altitudes than in Switzerland. This was also confirmed by Mr. Bryce, so that now there were three independent observers of this fact. Some people thought that in the dry air of Tibet and the Karakorams the ill effects of diminished

pressure are felt at lower altitudes than in damper Sikkim. The wonderful loyalty of Dr. Gregory's Zanzibari porters to their loads contrasted very favourably with the carelessness and dishonesty of Asiatic coolies.

Mr. PERCY THOMAS said that he certainly experienced in the Rocky Mountains a quickening of the heart in ascending ordinary slopes which he had never felt in the Alps; this, he thought, was very likely to be due to the dryness of the air. Miners who worked at considerable elevations had to go regularly to the valleys for relief.

The PRESIDENT said that passes in Sikkim—about 20,000 ft. above sea-level—were without difficulty crossed by natives, and that in the last war British soldiers used to run races at an elevation of 17,000 ft. With regard to the superstition as to spirits or witches inhabiting the heights, he thought that in all countries it was believed that places uninhabitable by men were inhabited by beings beyond our ken. Addison mentioned the prevalence in Switzerland of supposed witchcraft, and the records of Chamonix testified to the frequent sufferings of victims accused of this imaginary crime. He proposed a vote of thanks to Dr. Gregory for his interesting paper, which had opened a field more entirely novel—the Snows of Africa—than any that had been read to the Club for many years. The vote was carried by acclamation, and the proceedings terminated.

A GENERAL MEETING of the Club was held at the Club Rooms on the evening of Tuesday, March 6, Mr. DOUGLAS W. FRESHFIELD, *President*, in the chair.

Mr. Hugh Cecil Robinson was balloted for and elected a member of the Club.

The PRESIDENT, referring to the paper of the evening, drew the attention of members to the two maps of Suanetia he exhibited, which were of interest historically, as the one showed what Alpine explorers made out the glaciers to be without the aid of surveyors, whilst the other showed the result of the last Russian survey. In the main features they corresponded closely with one another, and were both absolutely different to the Five Verst map, reproduced in Reclus' 'Géographie Universelle.'

Mr. G. A. SOLLY read a paper entitled 'Suanetia in 1893,' after which Mr. H. Woolley exhibited an interesting collection of his own lantern slides illustrating the district, which were further supplemented by others shown by the President.

Mr. NEWMARCH said he shared Mr. Solly's affection for the S. aspect of Ushba, and thought it would be a rash prediction to say that it would not be ascended from that side. Probably the eastern route they had attempted to follow was the easier. It was his first experience of climbing in the Caucasus, and the pleasure of the expedition, as a whole, had fully come up to his expectations.

The PRESIDENT said he wished to emphasise two main points, alluded to in the paper which had been read. Firstly, that within seven days from London it was now possible to reach a mountain village from which to start climbing. Secondly, that a six weeks' expedition to

the Caucasus without guides need not cost more than from 60*l.* to 80*l.* Every guide employed would entail on the party an additional expense of 100*l.* Consequently the Caucasus was quite within the reach of anyone who could afford a six weeks' tour in Switzerland. He would strongly advise mountaineers visiting the Caucasus to reconnoitre carefully before attacking the great peaks. The most instructive views were obtained by going up, not a shoulder, but a height some distance off. If there was too little time for that he would advise that before leaving England the panoramic photographs of Signor Sella should be carefully studied, and copies taken for use on the expedition. In conclusion he proposed a vote of thanks to Mr. Solly for his paper, and to Mr. Woolley for his photographs with which he had illustrated it, and enabled everyone to understand the story they had heard.

A GENERAL MEETING of the Club was held at the Club Rooms on the evening of Tuesday, April 3, Mr. Douglas W. Freshfield, *President*, in the chair.

Mr. H. G. WILLINK read a paper entitled 'Alpine Distress Signals,' embodying the report of a sub-committee consisting of Mr. C. T. Dent, Capt. E. D. Law, Mr. F. O. Schuster, and Mr. H. G. Willink. This sub-committee was appointed to consider the advisability of recommending for universal adoption by Alpine clubs some form of signal for use in case of emergency arising on mountain expeditions.

Mr. ELLIS CARR suggested that for attracting attention a column of smoke by day or coloured fire by night might be useful.

Capt. LAW pointed out that, though the apparatus necessary for making certain forms of signals could not be carried on an expedition, they might be kept in readiness in huts. The real advantage of the system proposed was that no form of apparatus was absolutely essential, as in fine weather the distress signal might be made by means of a hat or coat by day, or by means of a lantern by night. Fireworks or coloured lights he considered were bad, as they might get damp or freeze, which would cause them to burn intermittently or explosively. Where a hut was in view of a hotel it would be interesting to practise signalling (not, of course, distress signals) at some fixed hour. The ten-seconds method he thought would in practice be a very simple one. A small shaving-glass, such as could be bought for 2*d.*, would make a good heliograph. In using the 'Morse' system in the Alps, it would be better to have flags coloured dark-blue, orange-yellow, or red, instead of the white and light-blue used in the Army, as in certain states of the weather the latter would show out badly against sky or snow.

Sir JAMES RAMSAY complimented the sub-committee on the very simple method they had devised; the idea of a ten-seconds flash or sound signal struck him as being remarkably suitable and happy.

Mr. A. J. BUTLER said that the inside of a sardine-box could be used in case of necessity for making a flash signal. The whole system, however, he considered could only be applied to a very few popular places. In ninety-nine cases out of a hundred no human habi-

tation could be seen from a hut, and the signal in such cases would, of course, be useless.

Mr. C. T. DENT felt a great interest in the matter. He had suggested in the Badminton volume on Mountaineering that some form of distress signal should be agreed upon. The idea had met with general approval in foreign papers. Most mountaineers could recall to memory instances where such a system would have been of great practical use. The particular form of signal was not of importance: the main point of the report was that anything might be used to make it. He fully believed that in certain instances it would be of very great use, and that if the idea were put before the principal foreign clubs it would be generally adopted, and if adopted it would be of invaluable service. It would not interfere with any known signal. It was perfectly simple, though, of course, if not well done, it was not so likely to be seen and understood as if it were carefully done. If ever one party were by its use saved from the positive scandal of leaving another party in distress on a mountain, as happened on the Matterhorn, then the adoption of the system would be justified a thousand times over. It might also prevent one person leaving an only companion for the purpose of obtaining aid and returning to find that all aid was useless.

Mr. HASKETT-SMITH hoped Mr. Willink would explain why the answering signal should be the same as the distress signal. It was quite possible to conceive that the former might be mistaken for the latter in some cases.

The PRESIDENT thought that Mr. Dent was quite right in the view he took that many catastrophes might be prevented by the use of the signal. There were two questions to decide—the form of the signal, and the method of securing its adoption. The guides especially would have to be taught to understand it thoroughly. The notion of the average guide would be, in the first instance, to take off his coat and wave it, or to use the common lantern, and the signal recommended could be made in this manner. He considered that the Club was much indebted to Mr. Dent for initiating the inquiry, and to Mr. Willink and the other members of the sub-committee for the report and paper which had been read.

Mr. WILLINK thanked the Club for the manner in which they had received the sub-committee's report. He agreed that it would be preferable to make a difference between the original distress signal and the answer to it. The simplest plan would be to make the latter consist of twenty-seconds intervals instead of ten-seconds. He undertook that this alteration should appear in the report and in the paper as printed.

The PRESIDENT proposed that the Club should authorise the committee to communicate with the various foreign Alpine Clubs, asking them to co-operate with the view of securing at the earliest moment possible the introduction of a universal system of signalling as recommended by the sub-committee.

This was unanimously agreed to, and after a vote of thanks to Mr. Willink for his paper, and to the other members of the sub-committee for their services, the proceedings terminated.

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NEW ZEALAND CLIMBING, 1892 AND 1893.

BY G. E. MANNERING.

AT the request of the Editor I send from New Zealand this short paper. It will be my endeavour to condense the accounts of climbing and mountain exploration which have been given by members of the New Zealand Alpine Club, and others, during the past two seasons; and it will also be my aim to describe briefly the methods of approach to the mountain districts in question, for the benefit of intending travellers.

Beginning with the southern portion of the range, the Wakatipu district first claims our attention, the ascents worthy of mention being those of Mount Earnslaw and The Remarkables. The former (a fine glaciated peak) was first ascended in 1889 by Harry Birley, a guide residing at the head of Lake Wakatipu, who accomplished his task single-handed, and appears to have broken the majority of the mountain commandments in the achievement. In February, 1892, Mr. and Mrs. Malcolm Ross, Mr. Kennett Ross, with Harry Birley and D. McConachy, set out from the head of Lake Wakatipu (which is easily accessible by rail and steamer—two days from Dunedin) to attempt the second ascent. On the first night out, camp was pitched on the bush-line, at about 4,000 ft., and, in dubious weather, the party climbed on the day following, at 7 A.M., over easy rocks for 3 hours to good snow-slopes, which led by noon to the ice plateau under the final peak. Here glazed rocks gave some trouble, and Mrs. Ross and McConachy returned. Difficult rocks and heavy mists were met with higher up, till, when 300 ft. below the summit, Birley was

seized with a fainting fit and could proceed no further. Leaving him in a safe place the Ross brothers continued, arriving at the summit (9,200 ft.) at 3.30. The view to the N.W. was very fine, embracing the Western Ocean and Mount Aspiring (9,600 ft.). Mists obscured the greater part of the panorama. The descent to the camp at 4,000 ft. was accomplished by 7 P.M.—12 hours out.

In March, 1893, the mountain was again ascended by Messrs. Herbert Jones and Clive, with Harry Birley. The first-named gentleman gave most thrilling accounts of their adventures. The party spent an unhappy night out in a snowstorm, during the descent, eventually reaching the Glenorchy Hotel, at the head of the lake, after an absence of 63 hours. The view from the summit is described by Mr. Herbert Jones as being very comprehensive and magnificent.

In April, 1893, two Glenorchy residents (Messrs. James Wilson and Joseph Leary) made the ascent, and in doing so deviated from the usual route up the Birley glacier, so avoiding long spells of step-cutting, and returned to Glenorchy in 44 hours. Evidently the mountain is easy under favourable conditions, though there are times when glazed rocks make the ascent impracticable.

The Remarkables (situated at the lower end of the lake) are a peculiar jagged and rotten mass of rocks whose culminating point is a triple cone 7,688 ft. in height. The ascent of this final cap of rock was accomplished for the first time in February, 1892, by Messrs. Malcolm and Kennett Ross, with Harry Birley, since which time several Queens-town residents have followed their route to the summit. The view is described as very fine, extending from Aorangi (Mount Cook, 12,349 ft.) to Stewart Island.

Working our way northwards we now come to the mountaineering centre of New Zealand *par excellence*, the Tasman District. Here are situated the highest peaks and the largest glaciers. Thanks to the enterprise of 'The Hermitage Company,' aided by government subsidies for the construction of roads, tracks, bridges, and the 'Ball' hut, the mountaineer now finds himself able to get to his much-desired snow-line without the labour of heavy 'swagging' and precarious river-crossing, and can enjoy a comparative immunity from those dreadful curse-inspiring struggles through Alpine 'scrub' which many of us in New Zealand know so well.

Most of the Alpine climbing in New Zealand has been done in this district, but though no less than nine attempts

to scale Aorangi and a similar number to climb Mount De la Bêche have been made, their actual summits remain yet untrodden—indeed, the only first-class peak (and that can only be called first-class under certain conditions) that has been topped is the Hochstetter Dome, situated at the extreme head of the Tasman Glacier.

In January, 1892, Messrs. A. P. Harper and H. Montgomerie-Hamilton, from 'The Refuge' (a bivouac at the foot of Mount De la Bêche), made an excursion to Mount Darwin, which they ascended to 7,100 ft., when Mr. Hamilton was attacked with a faintness which necessitated their return.



RUDOLF GLACIER, MT. DE LA BÊCHE, AND THE HEAD OF THE TASMAN GLACIER, FROM THE LOWER HOCHSTETTER GLACIER.

(Photographed by Burton Brothers, of Dunedin.)

A day or two afterwards the same party tried Mount De la Bêche, and after proceeding up the Kron Prinz Rudolf Glacier for some distance took the snow slopes on their right, which, alternating with good rocks, brought them out on the main ridge at 8,500 ft. at 11 A.M. Shortly after this, under the main peak (10,058 ft.), Mr. Hamilton was again attacked, and the party returned. Returning to the Refuge some days subsequently with John Adamson (then acting as a guide at the Hermitage), Mr. Harper made two subsequent trials, but was brought up in the first instance by a fierce nor'-wester, and on the second by Adamson being attacked

with violent cramp in his loins and stomach, and, curiously enough, the point reached (about 9,000 ft.) was the same in each instance.

Mr. Harper secured a number of valuable photographs on this occasion.

In January, 1893, Mr. Malcolm Ross essayed to ascend De la Bêche in company with Messrs. Fyfe, Gibbs, and Adamson, and following Mr. Harper's route, succeeded in ascending a little closer to the main peak than Harper's highest, but here a gap in the ridge prevented further progress, together with the fact that Fyfe was quite worn out—he having done an unusual amount of swagging in the preliminary part of the expedition.

In December, 1893, Messrs. Malcolm Ross, Gibbs, and Wilson again essayed the task, only to meet with defeat. They found the upper portions of the Rudolf Glacier very much broken up, and were unable to reach the base of the peak proper, so turned their attention to the saddle immediately south of it, which lies between the heads of the Rudolf Glacier on the eastern, and the Franz Josef on the western side. Their efforts to reach it were futile, owing to the maze of covered crevasses which barred the way.

Both Messrs. Harper and Ross have secured many fine photographs from this route on De la Bêche.

In February, 1893, Messrs. Burton Bros., of Dunedin, photographers, sent an operator to the Hermitage, who made several extended tours of the Tasman, Hooker, and Mueller Glaciers, and secured some hundreds of fine negatives, varying in size from stereos to 18 by 15—a magnificent collection of Alpine pictures.

The Ball Pass (7,426 ft.), connecting the Tasman and Hooker Glaciers, was during this season crossed by several parties.

In November, 1893, in company with my sister, Mrs. Westland, and Messrs. M. J. Dixon and T. C. Fyfe, I revisited the Hermitage for the sixth time, and made what is for me the fifth attempt to climb Aorangi.

Dixon and Fyfe preceded me by one day to the Ball hut (14 miles from the Hermitage), and I followed with the ladies and a pack-horse (which can now be taken right to the Ball hut along a fairly good track). Our plans were as follows:—Dixon and Fyfe were to go up to the bivouac (7,000 ft.) on the Haast Ridge (called by Green in his book 'Tasman Spur'), taking provisions and two pairs of Norwegian snow-shoes, and return to the Ball hut to meet me;

then we were to take more provisions, &c., up to the bivouac on the next day, and start for the final climb at midnight. On my arrival at the Ball hut, however, there was no sign of Dixon and Fyfe, and, as they did not appear next morning, we began to be anxious on their account, which led me, at 10 A.M., to start for the bivouac with a swag of some 35 lbs. in weight. Leaving the ladies out on the clear ice of the Hochstetter, two hours later, with full directions as to finding their way back to the hut, I made my way across the final hummocks below the Hochstetter icefall, and came shortly afterwards upon traces of the lost men, which I followed up carefully towards the bivouac, now immediately above me about 3,000 ft. As time wore on my anxiety increased the more as the tracks now and then led over bad places in the rocks, and I feared continually that I should suddenly come upon two mangled corpses. Added to this, the swag was telling, and I was without the kindly assistance of the rope. I shouted continually, and at last, as I was rising into the mist, and knew I could not be very far below the bivouac (though it was after an absence of three years, I seemed to recognise every rock), I heard a reply from above.

Then followed an abortive attempt at conversation at full lung power, which ended in neither party understanding the other. So I sat down and waited for the lost sheep to come down. After an hour's continual waiting, the monotony of which was varied by more shouting on my part, I suddenly heard a faint reply far, far below, and, making for the nearest couloir, went down with a mild avalanche and came across Dixon and Fyfe, as merry as sandboys, and anything but mangled corpses. If I had possessed a gun I should have shot them on the spot. Dixon had misunderstood our plans, and was making for the hut 24 hrs. late by my time, but 'up to contract' by his.

We reached the hut some 3 hrs. later, much to the relief of the ladies, and on the following day (Dixon having kept us awake half the night knocking up another pair of snow-shoes out of an old packing-case) we were off once more for the bivouac at 7,000 ft.

We foolishly struck a new route up, and paid the penalty for it by arriving 2 hrs. later than we should have done, owing to the avalanche state of the snow from about 6,000 ft. and upwards. On one occasion, in crossing a small glacier (which we call the 'Bivouac' Glacier), we started an avalanche, which swept about half its surface, and, filling an enormous crevasse, passed hissing onward and over to

the couloirs below. The snow was in a very bad state, and we were not sorry to wriggle into our blanket bags at the bivouac, and, by the aid of a kerosene oil lamp, get a pannikin of hot soup. Snow came on for a short time, but before 12 the night was frosty and fine.

By 1 A.M. we were off, and keeping mostly on the rocks in the bright moonlight we made good progress towards what is known as the 'Plateau,' situate 1,500 ft. above the bivouac. Alternately on rocks and snow (now hard frozen), we passed the 'Ladies' Foot,' where, in 1883, Dr. von Lendenfeld spent a miserable night, and we tackled the steep snow slopes above this point leading on to the plateau. The top of these slopes is awkward, the rocks shelving down at about the same angle as the snow, and below you, in case of a slip, are the crevasses of the Freshfield Glacier, gaping wide. Dixon and Fyfe had been up here two days previously, and left the snow-shoes, or 'skis,' on the plateau. It was at this point that von Lendenfeld was beaten by crevasses in 1883. It is always a bad place. Once on the plateau we breathed more freely, and soon after this daylight began to show up in the east, and before long old Aorangi had a rosy hat on, and Tasman followed suit. I made many exposures here with a $\frac{1}{4}$ -plate hand-camera by Shew & Co., using an Eastman roll-holder, with most satisfactory results. I have observed that Captain Abney does not think much of these very flexible films, but for mountain work in New Zealand, where dark rooms are unknown, and where we want sometimes to take forty pictures a day, and where time and weight have to be considered, glass plates and cut films are a long way behind an Eastman holder, and results fully justify their use; for 80 per cent. of my negatives print exceedingly well, and, indeed, with many of them it is impossible to tell from prints whether they are glass or films.

It was now 4 A.M. Before us, as we faced towards the Linda Glacier (S.W.), rose up what I suppose is one of the most magnificent scenes of mountain glory in the New Zealand Alps. The rocky mass of Aorangi, clothed here and there with enormous rooflike glaciers seamed with avalanche streaks, rose in stupendous grandeur, presenting a face of unparalleled magnificence. A little to our right hoary Tasman stood boldly out, clad thickly with coat upon coat of overlapping hanging glaciers, glistening in the morning sunlight, and beginning already to shed his daily avalanches on to the plateau. Behind us, a little to our left, we could

look round and see the maze of crevasses which appears at the top of the Hochstetter icefall, above which we now were, and away beyond this the peaks of the Malte Brun and Liebig ranges, and further still the bold rocky mass of Mount Jukes appeared against a glorious crimson sunrise.

The snow was in splendid order for walking, so after Dixon had given us an exhibition of 'skilöbning' (sitting down hard and unintentionally several times) we made a sledge of the 'ski' and put them as fourth man on the rope. We reached the junction of the Linda Glacier with the plateau close under the rocks of the N.E. arête of Aorangi



AORANGI, FROM THE HOCHSTETTER PLATEAU (7,500 feet).

(Photographed by G. E. Mannering.)

on the left and the avalanche slopes from the Silberhorn of Tasman on the right at 5 A.M., and here we left the snowshoes and began the ascent up the Linda. Crevasses were the order of the day, and before long we were crawling over bridges, and zigzagging across, first to one side and then to the other, for some of the larger crevasses extended right across, and many had but one bridge left. To go on to the slopes on either hand was quite impossible. The sun now began to torture us, and beating down with relentless power, the rays were reflected from beneath and from both sides, and seemed to fry the very skin of our faces and hands into a

half-cooked state. Indeed, the agony of the burning was terrible. At 8 A.M. we had reached the turn in the Linda, whence, looking upwards to our left, the well-known peak of Aorangi stood up some 3,000 ft. above us. We could see well the route by which Mr. Green with Herr Emil Boss and Ulrich Kauffmann had climbed in 1882, and which Dixon and I followed in 1890; but there was no getting at the foot of it from the Linda, for the rest of the glacier was in an utterly chaotic state, being broken up into huge blocks, acres in size, tilted into dreadful confusion, with crevasses in all directions. So different was the state of things in comparison to that in which Dixon and I had found them in 1890, that we could not—except for the attendant peaks—recognise it as the same glacier.

By 8.30 we began to feel that our chance of success was going fast, and for my part I may say that I was almost exhausted physically—‘played out,’ as we say in the Colonies. In addition to this we were constantly speculating upon our chances of getting down safely off the plateau again, for the avalanches were pouring down in all directions, and we had unpleasant recollections of those steep slopes just below the plateau. Our only chance of success lay in stopping where we were till nightfall, and then making our way further—if indeed such were possible in the face of such a fearfully confused state of the glacier. But to stay for another eight hours or more in the broiling sun, in a place not safe from the inroad of avalanches from Tasman, was more than we were prepared to endure; so we once more turned tail on old Aorangi and acknowledged ourselves beaten.

Many of the snow bridges we had crossed coming up were now in a dangerous state, and we all experienced the cheerful sensation of going through up to the armpits now and again, in spite of our crawling propensities. (We were fast becoming quadrupeds.) On one occasion two of us were in at the same time—in different crevasses, luckily.

On reaching the snow-shoes again we were not long in finding their usefulness, and instead of sinking in up to the knees at every stride, we were soon sliding along—(no doubt it would have amused Nansen to see us)—in gay style. Small crevasses were negotiated with impunity, but one avalanche from Tasman (now on our left) struck terror into our comparatively danger-hardened hearts, for it came straight for us, but luckily spent its energy on the flat snowfield before reaching our line of march.

The sun- and snow-burning was something terrible. Fyfe and Dixon, though their faces were well plastered with lanoline and protected with handkerchiefs, notwithstanding that their calling keeps them always in the open air, suffered little less than I (whose occupation is sedentary). Whenever we halted we would wrap our heads and hands in our coats, and try every conceivable device for protection, but to little purpose. It was weeks before I recovered from the effects.

We left the 'ski' on the edge of the plateau, and began the descent of the rocks. And horrid work it was; for the rocks were very hot and very difficult, and we had to let the axes down with the spare rope every now and again. Sometimes we found the rocks too bad to get down, and we were forced on to the snow slopes, but we always first started avalanches with stones and went down in their tracks. Eventually we reached the bivouac, and after an hour's rest went down the lower couloirs (avalanches and all), and reached the Ball hut at nightfall.

The Tasman district is easily approached by rail (one day) and coach (two days) from Christ Church or Dunedin, whilst to visit the Godley (the next district under notice) one requires to branch off at Lake Tekapo. There is however no accommodation in the latter part, and camping is necessary.

The Godley district is situated next to the north from the Tasman, on the eastern side of the range. Two large glaciers (the Classen and the Godley) are here situated, and their respective waters form the Godley River, which, emptying into Lake Tekapo, flows out in the Tekapo River, and forms the most northerly affluent of the Waitaki River, just as the Tasman system forms the middle tributary as the waters emerge from Lake Pukaki.

In February, 1892, I visited the Godley Glacier in company with Mr. M. H. Lean and James Annan, the latter a shepherd, who has accompanied me in various glacier excursions. We walked up the Godley Glacier from the terminal, 7 miles, to the Sealy Pass (5,800 ft.), which we crossed for the first time, and made our way down towards the west coast. On getting off the Scone Creek Glacier on the western side of the pass an unfortunate accident occurred to Mr. Lean, who fell a distance of about 80 to 100 ft. down the steep terminal face, but was saved from a horrible fate by landing on his swag, on a block of ice at the bottom. Luckily the 'billy' was also on the back of his swag, and this was crushed flat, taking most of the concussion. As it was, his right shoulder was dislocated, and his face and hands badly cut. This

accident crippled the party, which, coupled with bad weather, made a return to civilisation exceedingly difficult. We reached Lily Bank Station some days later, after a terrible journey, the record of which would occupy too much space. The scenery of the Godley is exceedingly fine, and the *Mer de Glace* of the glacier very extensive and clean. None of the peaks have been ascended.

The same year, in March, two parties visited the glacier and crossed the Sealy Pass, viz. Messrs. Guthrie, Annan, and Jones, and Messrs. Pringle (two) and Blythe, the last-named party reaching civilisation on the western side.

In April of the same season the Sealy Pass was again visited by Mr. and Mrs. C. H. Inglis and Miss Ainger, with Maurice Hannigan, a shepherd, and again by Mr. and Mrs. Smithson and party with Maurice Hannigan.

The Rukaia district next claims our attention, and is situated still further northward, on the eastern side of the range. Here the Arrowsmith Range is the predominating *massif*, though the Ramsay and Lyell Glaciers are further westward and drain mountains which, though inferior in height to Arrowsmith (9,171 ft.), contain larger névé fields and are more heavily glaciated. This portion of the country is more difficult of access, and there is no accommodation in the vicinity of the higher mountains; one can but impose upon the hospitality of the run-holders up to a certain point, and onwards from there camping is a necessity.

In March, 1893, in company with Messrs. C. H. Inglis and M. H. Lean, I visited Mount Arrowsmith, leaving the train at Ashburton, and driving 60 miles to Lake Heron Station. From there we walked up the Cameron River and camped at the terminal of the glacier of the same name, immediately under the highest peak of the mountain. From this point we started for the ascent at 2 A.M., travelling by moonlight over the lower portion of the glacier for 2 hrs., after which we ascended the screes ('shale slopes' we call them in this country) on our left, and came out on a saddle at 7,400 ft. situate on a subsidiary ridge between the heads of the Douglas and Cameron Glaciers, which fill the two principal depressions in this part of the range. At this point the sun rose, and a glorious sunrise it was. No wind, never a cloud in the sky, and a temperature that was just delightful. We unlimbered our two cameras and fired away in all directions, and the Eastman films on this occasion also proved their adaptability to the work. Sunrise at 7,400 ft. augured well for the ascent of a mountain of 9,171 ft., but we little

dreamt of the task near at hand, for, on moving upwards, we soon found the rocks would not go any further, and we were forced, after climbing 700 ft. or so, to take to a hard ice slope on our left, and we commenced to carve a 'crystal stairway' in what proved to be some of the hardest ice I ever put an axe into. A long dry summer had effectually removed all névé and gone down into the 'bed rock' of the



THE UPPER ROCKS OF MOUNT ARROWSMITH.

(Photographed by C. H. Inglis.)

ice, and, to cut a long story short, we spent 3 hrs. and 40 m. cutting our way up less than 300 ft. It took from 20 to 30 blows with the pick to hew a step, and we cut about 250 before we reached the desired skyline above, at 12.40 P.M.

Here we rested and photographed for an hour. As we looked westward, below us lay the head of the Cameron Glacier, some 2,000 ft. down, from the opposite side of

which the battlements of the main peak rose in awful precipices—such rocks, wonderful faces of red sandstone, broken at their summits into jagged aiguilles not at all unlike, in some respects, those of Chamonix, only on a smaller scale. On our left continued upwards our rocky ridge, leading towards the highest part of the mountain. For a long way it seemed to promise glorious rock-climbing, but the highest parts were shut out from view. Unfortunately we were under the necessity of reaching Lake Heron again that night, so we had to consider the question of time, and to go further meant that we should never reach our respective places of business in time to avert 'getting the sack' or some such dire calamity; so back we had to turn for home, leaving the top rocks still untrodden. Half an hour sufficed to see us safely down our steps, and then the pace soon became a clinker, and we reached camp at 4 P.M., 14 hrs. from the start. But our day's work was not over yet, and at 5 we were off again, following the pack-horse down for four solid hours at a pace that only a homeward-bound New Zealand pack-horse can walk, and reaching Lake Heron station at 9 P.M.—19 hrs.' hard going. The next day we drove 60 miles to catch the train at Ashburton.

This range promises some of the finest rock-climbing, and may be fairly called 'first-class.' I have never been amongst such fantastic rocks. Rugged grandeur dominates everywhere, and the climbing is simply magnificent on the upper ridges. There is nothing on the Mount Cook route to compare with the rock-work here; even the rugged north-eastern arête, between the Linda and Hochstetter Glaciers, though perhaps larger as a mass of rocks, is not by any means its equal in fantastic outline.

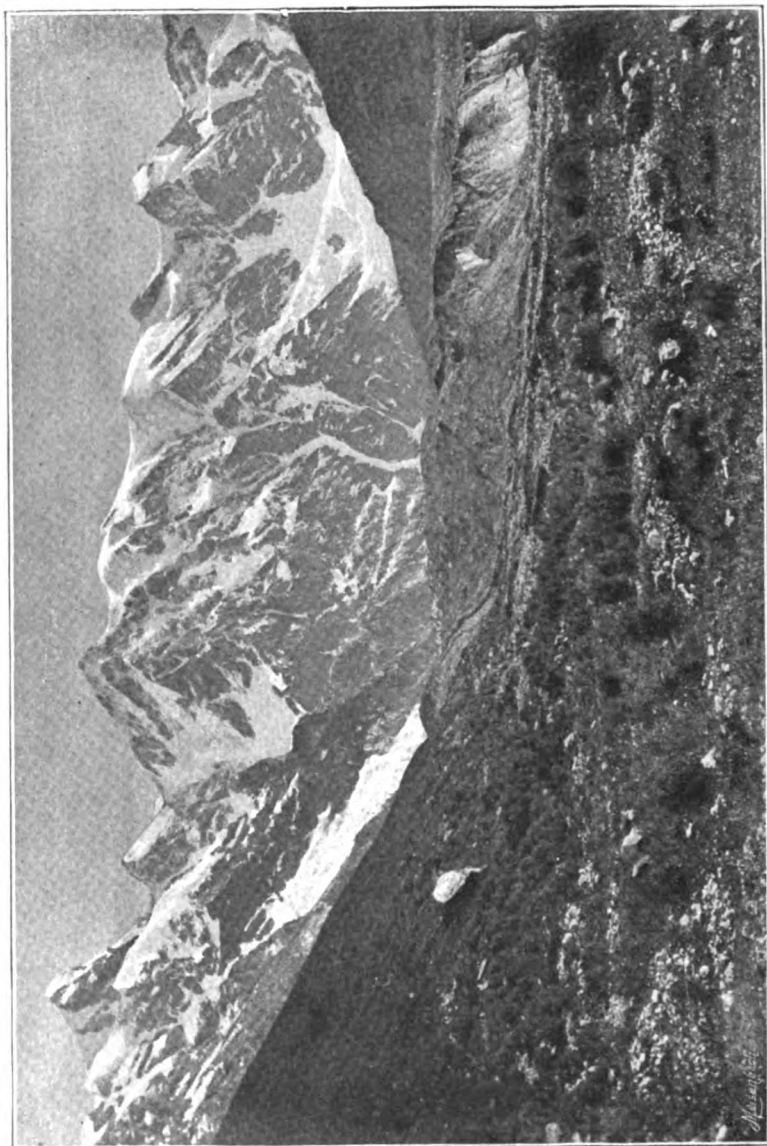
In April, 1893, the Hon. James and Mrs. Westland visited the head waters of the Rakaia River, and made some photographic excursions amongst the glaciers. They reached Whitcombe's pass—a pass which can tell terrible tales of hardy adventure in the early days of the gold diggings—and they brought back negatives of country which had never before been under the photographer's lens.

The New Zealand Survey Department can tell of glacier work done in 1892 on the west coast, the last report containing most interesting accounts of reconnaissance work in the Wills, Macfarlane, and Copland valleys, mostly by Mr. C. Douglas, which are illustrated after the manner of colonial attempts at reproduction.

At the time of writing, Messrs. A. R. Harper and C.

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SOUTH FACE OF JANGA AND KALDE GLACIER.

Douglas are doing reconnaissance survey work for the New Zealand Government on the Franz Josef Glacier, upon completion of which they move southwards and explore the Fox and other large glaciers in detail. The report of their work is not yet available, being required for the Annual Survey Report (published in May), but promises exceedingly interesting details regarding mapping glacier-movement observation, &c.

Mr. Brodrick, of the Eastern Survey, has also some valuable glacier-movement observations to chronicle shortly, he having quite recently picked up marked stones on the Mueller Glacier, whose positions he last fixed in December, 1890.

To anyone desirous of acquiring a book-knowledge of the New Zealand mountains I would recommend a perusal of the following works* :—

1. Haast's 'Geology of Canterbury and Westland.'
2. Hutton's 'Geology of Otago.'
3. Green's 'High Alps of New Zealand.'
4. Von Lendenfeld's 'Australische Reise.'
5. Mannering's 'With Axe and Rope in the New Zealand Alps.'
6. Ross' 'Aorangi; or the Heart of the Southern Alps.'
7. No. 1 of the 'Geographical Journal,' which contains the best map hitherto published of the central portion of the Southern Alps.
8. The New Zealand 'Alpine Journal.'

SUANETIA IN 1893.

BY GODFREY A. SOLLY.

(Read before the Alpine Club, March 6, 1894.)

SINCE the days of Jason and Prometheus every traveller to the Caucasus has on his return home had some stirring tale of success to tell: some dragon has been overcome, some high mountain climbed, or some scientific object achieved. To-night I have to break the record of centuries, and to give the story of a mountaineering and exploring expedition to Suanetia in 1893, in which no summit was reached and no new district explored. So many papers have already been written and printed in the 'Journal' describing the general features of the country that I cannot

* 1 and 2, out of print; 3, Macmillan; 4, Wagner, Innsbruck; 5, Longmans; 6, New Zealand Survey, Wellington, N.Z.; 7, Royal Geographical Society; 8, Whitcombe and Tombs, Christchurch, N.Z.

even say much that is new of what we saw in the valleys and villages that we visited. Where the scenery has been depicted by a Freshfield, and the humour of the people and their ways has been impressed on our memories by a Dent, a novice may well fear to follow; so, remembering that travellers are always truthful, and that the Alpine Club is always accurate, I will endeavour to give you a straightforward account of what we saw and did, whether we failed or not, such as—with an apology to Mr. Rudyard Kipling—might be called ‘Plain Tales from the Hills.’

In the spring of 1893 Cookin and Woolley asked me to join them in an expedition to the Caucasus during the ensuing summer, and I at once accepted the invitation, as I was anxious to go and was only too glad to have the benefit of their previous knowledge of the country. In May we were fortunate in arranging with Newmarch to join us, so that our party consisted of four. We decided not to take any guides, but agreed that we would make as much use of native porters as we possibly could. The idea of the expedition was first to attack the south peak of Ushba, and secondly to explore the glaciers in Suanetia on the south side of the main chain, and to attempt some of the peaks which, up to that time, had only been climbed, or attempted, from the north. We delayed our preparations as much as possible, on account of the alarm of cholera; but at the beginning of June, not having heard of any quarantine regulations that would hinder us, decided to start at the end of that month. Cookin, who has more leisure than the rest of us, kindly agreed to start about a week earlier, and to go by sea to St. Petersburg with our tent and all the luggage on which duty was likely to be levied, so as to save delay and expense at the frontiers of the several countries through which we had to go. From St. Petersburg he went to Moscow, where he picked up a quantity of provisions that we had ordered from the excellent British stores there, kept by Messrs. Muir and Merrilees,* and then on to Vladikafkaz and over the Mamisson Pass into Suanetia, where he joined us.

Woolley and I left London on Friday, June 20, and travelling by Cologne and Vienna reached Odessa on the Tuesday morning following. Newmarch had left London at 6 P.M. on Saturday, and travelling by Berlin and Warsaw

* In 1894 this firm had given up this branch of their business and could not execute a similar order.

reached Odessa at 7.30 P.M. on Tuesday, in time to catch the express boat to Batoum at 8.30 P.M. We reached Batoum on Friday morning, having loyally drunk to the healths of the Duke and Duchess of York in vodki at sea on July 6. Newmarch, by his discovery of this new route to Batoum in five days and a half, not only established his reputation as a first-class guide over a railway system, but may fairly claim to have shown how the Club, as Mr. Holder in 1891 asked, may be transported with the utmost rapidity from London to Batoum. At Batoum we picked up a tent and some cooking utensils which Mr. Dent had kindly placed at our disposal, and then travelled over the Latpar Pass to Betsho, and thence, four hours higher up, to the place under Ushba where Cockin had camped in 1888.

On July 16 we started at 3.15 for a training and reconnoitring expedition to the ridge opposite us which comes down from the south peak of Ushba towards Betsho. The most remarkable feature of the expedition was that we saw a bear on the snow slopes south-east of Gulba. When first seen he was moving; then he stopped, but presently went on and disappeared over the col which we crossed a few days later. We had a splendid view of the precipices on the south face of Ushba, and looked down upon the upper snows of the glacier on the west of Ushba, for which we got the name of Sotar Glacier from a native hunter named Moratvi who was with us.

It would have been possible to have descended to the glacier, but the pass would be of little practical value. It might be compared to the Col des Grand Montets from the Montenvers to Argentière, but is on a larger scale.

My note for July 17 is, 'Got up about 6.30. Ate and slept most of the day.' That description applies to many of our days in camp.

On July 18 we started for a *gîte*, in order to attempt the south peak of Ushba on the next day, intending to follow Mr. Cockin's route to the saddle between the two peaks; but, as one of the party was unwell, we only went as far as the rocks of Gulba, where we stayed the night.

The next morning we were off by 2.40, and passing through the *séracs* at the bottom of the great slope of ice and snow which comes down from the couloir and the cliffs of the north peak, struck diagonally across it towards the bottom of the couloir. On the lower part of the slope there is a large patch of exposed rock, which we made for, hoping to save time; but the rocks are smooth, and it is quicker to

keep to the snow, leaving them on the left. From these rocks we turned a good deal to our right, and got close under the cliffs of the north peak, so that icicles or stones from above might fly far over our heads and leave us in safety.

Walking along under these rocks, we came to the bottom of the great couloir where it widens out and is merged in the great slope, but turning up a little too soon, so as to avoid going under some dangerous-looking séracs, we came to some of the hardest and toughest ice that I have ever met with. It was difficult to make even the smallest steps. By 11.40 we found that we were still so far from the saddle that there was no chance of reaching the summit that day, so rather than overtire ourselves—and we were not yet in good training, and had been kicking or cutting steps for about five hours—we turned back. This decision was arrived at the more willingly as avalanches of ice and stone were constantly falling in the couloir, owing to the great heat of the preceding days, and we were not at all sure that it would be safe to descend later in the afternoon over the snow covering the ice on the great slope.

On July 21 it was cloudy all around, but, as no rain had fallen in the night and it was tolerably clear towards the Black Sea, from which the storms generally come, we started again at 10 A.M. for Ushba. We lunched and spent 2½ hrs. at the rocks where we had slept a few days before, and arrived at 7 P.M. at a triangular rock to the right of our previous route and some little distance below the north peak. Soon afterwards a terrific thunderstorm burst suddenly upon us. We seemed to be in the centre of it. Flash followed flash with alarming rapidity, reminding me vividly of an experience on the Dent Blanche, while the hail streamed down the steep slopes on to us. About 9 it cleared a little. Newmarch, who was rolled up in his bag at the time, had kept dry, but the rest of us were wet through; so, after a consultation, we decided to abandon the expedition. Cockin then said that he was prepared to lead down at once, instead of waiting till daylight, and we started, with a half-moon to give us light; but it soon clouded over again, and we had to depend upon a lantern. For nearly two hours Cockin kicked steps backwards in the hard snow, and we followed most carefully; then in the darkness he led us successfully over the big schrund and through the séracs until we reached easier ground. It was a masterly performance on his part, and I have seen few finer pieces of mountaineering. We

reached camp at 3.15 A.M., tired and disappointed, as we had carried loads of fully 25 lbs. each from the luncheon place to the *gîte*, and had taken an extra quantity of food and firewood, so as to have a reserve in case we were a second night out—and all for nothing. As far as I know the firewood is still there, at the disposal of the next party.

Newmarch and I had no other chance of returning to the attack, but, after we left, Cockin and Woolley went back to Betsho and made another attempt, which Woolley describes as follows:—

‘We slept the first night under the rocks of the N. peak, and next day only got about half-way up to the saddle. The mountain had lost nearly all its snow, and the upper slopes were bare ice. What snow was left was in bad condition; streams of water and snow mixed were coming down the couloir, and stones kept firing down from both N. and S. peaks. At noon we saw that we could never cut up the couloir in the time, and I was anxious to get down while we could—*i.e.* before the remaining snow had been washed clean off the slopes—so we turned. I don’t think any guide would have gone on. We got back to the Gul camp at 11.30 P.M.’

There have now been twelve attempts on Ushba; in only three has even the saddle between the two peaks been reached. The climb is of the highest interest, both from the amount of ice-craft required and from the magnificent scenery around; but from all that I have seen and read I have come to the conclusion that it can seldom, if ever, be free from danger, and that it will be better to search for a route amongst the precipitous rocks on the south side of the S. peak before venturing again into the great couloir.

Our next expedition was over the low pass at the south foot of Gulba from Gul to Mestia, which we had seen the bear cross a few days earlier. There was a good deal of snow on the Gul side. From the col a steep snow-slope descends to the névé of a tributary of the Mestia or Chalaat Glacier, as it is called on the new map; but, as we had gone out more to enable Woolley to take some photographs than with the idea of a climb, and were rather late, we went up the ridge to our right for a short distance, then descended a little, and rounding point 1,410 on the new map, turned due south, and, ascending a slope of névé, crossed the ridge a little west of point 1,596 on the same map, and came out at the head of the Lendjer valley. As we had arranged to meet Cockin, who had gone round with the luggage, at

Mestia, we bore more to our left till we found a path which led us to Mestia, where the whole population turned out to receive us. It was one of their Sundays—they seem to have several in each week—and having heard of us from the men with our luggage, they had been watching us with great interest.

A route could be made from Betsbo over this col and the Chalaat Glacier, and so by a known pass to the north side of the main chain; and it is possible that natives may have passed that way, and so deprived us of the right to call it a new pass; but the walk was interesting from the views it gave of the peak 2,045 on the map, which Sella and others call Mestia Tau, and the south-east side of the north peak of Ushba. I saw no possible route up either from where we were; but the glaciers are evidently very changeable, and séracs which could not then have been safely passed may be quite easy another year.

Our next camp was in a small clearing in the forests near Mujal, on the left side of, and about 700 ft. above, the Zanner torrent. On our way to it we had an opportunity of inspecting the new Government school at Mulach. The head-master is M. Gabriel Nichoradze, who wore his official uniform—a swallow-tailed coat and open waistcoat of bright blue cloth with gilt buttons. He invited us to stay and have coffee, and while waiting we asked to see the school, and were shown in and provided with chairs, while he put the pupils through their lessons. It was a mixed school with fifty-three scholars—fifty-two boys and one girl. The boys' ages varied from six to about twenty-two. The head of the school was a young Prince Dadishkilian, a bright, intelligent-looking boy of about fifteen. Their principal lessons were in learning Russian, but they also did some sums on a blackboard, and sang, amongst other things, the Lord's Prayer, all standing. The girl, Maria, whom we afterwards found to be the nurse-girl in his house, answered as well as any.

The best part of the school was outside, where we found what was practically an excellent technical school on a small scale. In the gardens were little plots of different vegetables and herbs—potatoes, peas, artichokes, onions, amongst others—while in a corner were two beehives, near beds of flowers. In the outbuildings there was a small carpenter's shop, used for teaching the pupils, and there was also provision for teaching them to make bread, butter, and wine. It says much for the wisdom of the Russian Government

that they should thus try to wean these wild natives from their old customs by teaching them the arts and comforts of civilisation; and the placing of this little technical school in this out of the way province, although it can only be kept open during the summer months, is an example which other countries might follow. After our inspection we sat down to a most excellent banquet, with plenty of vodki and good Tiflis wine, in which we drank the healths of the Czar, the Queen, our respective countries, each other, our families, and so many other toasts that we began to be alarmed, and to doubt whether we should be able to cross the narrow bridges on our way to camp. A day or two later we asked M. Nichoradze and his wife up to afternoon tea. They came, with three children and several relatives and friends, and we gave tea, with preserves and whatever we had in our stores that was new to them; and Woolley photographed the whole party, so that we did our best to return their kindness and hospitality.

Our next expedition was over the Tiktengen* Pass, which connects the basins of the Zanner and Thuber Glaciers, and lies between Tiktengen on the north-east and a much lower nameless, snowy, dome-shaped peak on the south-west. Cockin had discovered and been to the top of this pass in 1890, but no one had ever descended the west side, down the Kitlod Glacier to its junction with the Thuber Glacier. We left camp about 10 A.M. on July 25, and, after descending to and crossing the bridge over the Zanner torrent, went by a path through fields where sweet peas and other flowers were growing in profusion, and then through the woods to the gorge of the Zanner. We were not very successful in choosing a route through the séracs of the lower icefall, and spent over two hours twisting in and out amongst them in a way that is most enjoyable if you are on the Gorner Glacier and know that, whatever happens, you will be in time for afternoon tea at the Riffel Alp. There was no tea for us, however; so we went on, and bivouacked before dark on the right bank of the glacier in a grassy valley between the mountain-side and the moraine.

Starting next morning at 1.30, we went up the glacier to the second icefall, which we turned by keeping on the right bank on some very disagreeable moraine and broken ice. From there the route to the pass was easy. At first we

* In some previous maps Tiktengen has been called Tiutiurgu. The height is given as 15,208 feet.

went N.E.; then, turning sharply to the N.W., round the point marked 1,733 on the new map, which looked as if it were composed of brown shale, after passing a few crevasses came by easy slopes to the col marked 1,801, which we reached at 7.15. As the day was fine we had some discussion as to whether or not we ought to try for the peak then, but we decided that it was too late, so had a breakfast leisurely and admired the magnificent view. At or near the top of the pass we saw to the N.E. a rocky peak, which we took to be Bashiltau, and further off Elbruz and Ushba, and behind us Tetruld, Koshtantau, Gestola, and the giants at the head of the Bezingi valley which form the great Bezingi wall. At 8.10 A.M., before commencing the descent, we explored the rocks on Tiktengen immediately above the pass, but soon found that they were too difficult to afford hope of a practical route, so returned. We left the pass about 9.30 A.M. For about 1½ hr. our route lay over the névé, rather nearer to the right of the glacier, until we came to the first icefall, which we passed by still keeping to the right. Then we came to a point where the glacier falls rapidly for about 200 ft., from which we got a bird's-eye view of the séracs and crevasses below us, and decided to strike diagonally across to some avalanche snow that we could see on the left bank. Several of the schrunds were very wide, and caused some delay, but we were tolerably successful in finding a route, and reached the snow I have mentioned at 1.30. Here we unroped, and going down the ice, which was at first bare, but afterwards very rough with big stones piled up on one another in heaps, reached the junction with the main Thuber glacier at 3. This soon became too rough; so we quitted it for the left bank, and, after scrambling through rhododendron bushes and other vegetation that reached up to our knees, came to some pastures, where we soon found a track that led us through the Thuber gorge to Mujal and our camp, which we reached at 7.15 P.M. We have calculated that this expedition would take about 17 hrs. of actual walking; but it would always be better to descend the Kitlod Glacier as early as possible, as it faces almost due west.

Our next expedition was an attempt on Tiktengen. On July 27 we left camp at 9.30 A.M., and profiting by past experience avoided the difficulties of the lower icefall, and were beyond it by 2.30. We then went up the glacier past our old sleeping-place to the second icefall, and as the moraine on the right-hand side had been so troublesome we

tried the other; but the lower part was no better, and there seemed to be some little danger from falling stones. Higher up we got on to some easy rocks, and presently found a little wall, evidently made by some hunter; and, as it was 7 P.M. and there was water near, we stayed there for the night. We were then nearly 10,000 ft. high and surrounded by glaciers, but close by were quantities of white primulas in full bloom, as well as other flowers.

We had some rain early in the night, and a little thunder, but the morning was fine and clear, and we started at 2.30 A.M., and leaving our sleeping kits and a little food on the moraine above the icefall reached the top of the Tiktengen Pass at 6.15.

Tiktengen, as seen from the pass, is a long ridge running nearly due E. and W., very steep, and with very little permanent snow visible. The ridge, especially that part west of the summit, is much broken up, and from it a number of steep, narrow buttresses or ribs of rotten rock come down for nearly 3,000 ft. to the névé of the glaciers. Between these ribs are couloirs, often of ice, and dangerous from falling stones. This ridge is on the watershed, but according to the new map the highest point is just N. of it on another ridge, which runs almost due N. and S. and joins the first ridge rather to the E. of the pass. At the time we did not know that there were two peaks, and thought that the peak on the watershed was the highest point; but shortly before we turned we saw a peak a little to the N. which looked as high as any part of our arête, and we wondered after all whether we were further off the true summit than we expected. We did not get a view of this peak later, as the storm came on and clouds hid it from our view.

We began our ascent up a long snow couloir just to the W. of, but not visible from, the pass, having for our mark on the arête some great towers of lighter-coloured stone; but we soon took to the rocks, to avoid step-cutting, and always ascending, but inclining to our right a little, came without special difficulty nearly to the base of these towers. From this point the climbing was very difficult. Picking the best way we could, often only one could move at a time, and a great deal of pushing and pulling had to be done, such as one associates with the Scafell Ghylls rather than with a mountain of over 15,000 ft. At last, at 1.30 P.M., we reached the arête very near the point we had aimed for, and could see that, although some distance off, we were not

very much below the level of the peak. We went along the arête for an hour, but had to be very careful, as it is extremely narrow and the rocks were very loose. At one point I thought the ridge, about 12 ft. below us, was not more than 9 ft. in thickness, and that the slope continued at this angle for over 1,000 ft. on each side. A little before 3, when we were apparently quite near to the summit, and only about 250 ft. below it, we came to a narrow tower that stopped us. After recent performances near Chamonix I hesitate to say that any rocks are impossible till Mr. Mummery and our Secretary and their parties have tried them, but this tower would turn most climbers. The face towards us was perpendicular for 20 ft. and about 5 ft. in width; on the left, after crossing a few feet of very steep ice, we could have got to a sloping ledge, from which we should have had to come back. To have gone lower down on this side would have involved hours of step-cutting at a dangerously steep angle. On the right there was no ice, but it was equally impracticable; we could have traversed it for about 2 yards, but no further, and, as the rocks below were as steep as those from the Grépon to the Nantillon Glacier, it was not a place in which to run any risks. I saw no chance of traversing on this side without a descent of many hundred feet. While we were stopping before this tower I was feeling particularly sleepy, when Newmarch, who was second, suddenly turned round and asked me to be very careful, as he could not rely on himself to keep awake. I looked round, and saw that Cockin, who was sitting down in a secure place, had the rope firmly in both hands, but his eyes were shut, and he was evidently content to leave the decision to others. Woolley afterwards said he had felt very sleepy. I cannot account for such a feeling of drowsiness coming over the whole party. We were not tired or hungry, were at no exceptional altitude, and had no feeling of sickness with it. I have never experienced anything of the kind elsewhere, and can only suggest that the air there may have been in some way affected, either on account of the very narrow and steep ridge or because of the coming storm.

At 3 we turned back. Very soon a sharp hail shower came on, though the sun was still shining. Our axes were hissing, and the whole ridge was fizzing like a glass of soda-water, while Woolley says he felt pins and needles in his head and shoulders.

We sheltered for a few minutes until the electrical disturbance became less violent, and then, while the hail still

fell, climbed back as quickly as we could to the point where we had gained the arête, and going a little further found a couloir, invisible from below, leading in the right direction. The ice had very little snow on it, and much step-cutting was necessary, but it was better than the difficult rocks, for by this time the weather had broken completely, sleet was falling, the rocks were wet, and the holds partly covered by snow. We got to the point where the hardest climbing had begun, but afterwards could not keep in the track of our ascent, the whole aspect of the rocks being changed by the snow. We went too much to our left—that is, east—and could not find a way to traverse back to our right, so kept going steadily on. During the descent I nearly had a fall. Cockin, who was leading, stepped on to a ledge of rock without its seeming to be loose, and moved to one side and waited while I came down. I saw his footprint in the snow on the ledge and thought it was all firm, so got on to it, when it suddenly gave way, and a great piece of rock, at least 2 ft. high, went thundering down. I made a spring, and, getting hold of the nearest rock, managed to keep my balance, and Newmarch and Woolley were ready with the rope, and could probably have held if necessary, but it was in a steep place and might easily have caused an accident.

At 8.45 P.M. we were still on the rocks, and though it was not snowing much it was too dark to go on, so we looked round for a place where we could all stay together.

There was no shelter to be had, but we found a little crevice in the rock where we could all stand. The rock in front came up to our knees, and behind us sloped slightly away for about 7 ft., when it ended in a small snow field. Here we waited till about 3 o'clock, stamping our feet and moving our fingers and toes, and doing all we could to keep our circulations up and each other awake. We had the weather in samples—thunder, lightning, snow, sleet, rain, and wind, and occasionally for a few minutes it was calm. About 1 the wind became worse, and came driving down the mountain-side upon our backs with an icy blast. It was bitterly cold, and our wet clothes were frozen hard, and in the morning I found that my beard and moustache were frozen together, so that at first I could not open my mouth. About 3 it was fine and the moon was shining, and we started down, but soon came to a place where we were cut off by an almost perpendicular cliff, so we retraced our steps for a short distance, and traversing eastwards descended till we again found ourselves cut off, and had to traverse again.

This we had to do repeatedly. The rocks are too steep to give any general view of a route down, so we just went down where we could, traversing right or left as seemed best whenever the direct descent was impossible. During all this time the climbing was very difficult. All the rocks were covered with snow and ice, and we were cold after the night's exposure, and it was difficult and even painful to hold firmly either to the rock or the frozen rope. At last we came to a narrow gully, and descending it for perhaps 300 ft. to the snow, crossed the bergschrund, and with a short glissade reached the open glacier, where the hot sun soon warmed us through. It was then 10 o'clock, and we had been nearly 7 hrs. on those snow-covered rocks and icy couloirs. The point where we gained the glacier was east of and about 20 min. below the pass, so Woolley and I walked up to fetch one or two things and a little food that we had left there; then, having rejoined our companions, we all went to the moraine, where we had left our sleeping bags and more food, and had a well-earned halt. Going down the Zanner Glacier we kept on the right bank, and on the whole I think this is the best side to take when either ascending or descending the glacier. The walk through the woods which choke the Zanner Glacier was a wearisome struggle, and we had several falls in the darkness over boulders and tree trunks, and the final ascent of 700 ft. from the river to our camp was almost too much, but we reached it about 10.40 P.M. and soon woke up the men, who lit a fire and made us some hot drinks and soup. We were all thoroughly tired, and the next day none of us went 200 yds. from the tent, but, except for a little temporary damage to one toe of one member of the party, we were none the worse, and, as Cockin remarked a day or two afterwards, 'that night was as good as a medical certificate for us all.'

Shortly afterwards we moved from Mujal, and on August 2 pitched our camp about 20 min. below the snow of the Kalde Glacier, among some birch trees on an old terminal moraine. The weather was very unsettled, but we made two long expeditions while we were there.

On August 4 we started soon after noon up the grassy ridge which separates the Kalde from the Adisch glaciers and runs north till it joins the south ridge of the Saddle Peak; then, when above the level of the grass, we traversed along the rocks on the Kalde side and slept out at a comfortable *gîte* about 4 hrs. actual walking from the camp.

There was a little rain and thunder in the night. We got up at midnight and set off at 1 in unpromising weather, which became worse as we traversed along to our right, gaining a little ground all the time. At 5.30 rain and hail fell, and we stopped for about an hour to have breakfast and see what the weather was going to be. Our hope had been to ascend to the ridge visible from camp, which we thought might be at the edge of the great plateau of snow at the head of the Adisch icefall, and then, if practicable, to work round to Djanga or the Saddle Peak, whichever of the two might be found most accessible, but in the bad weather we knew that this was impossible. At 6.30 the hail stopped, and as the ridge looked quite near we decided to go, in order to ascertain whether the route to the plateau was practicable; but we were deceived as to the distance, and it took us over 4 hrs. to reach it. We gained it by going up a long snow and ice couloir to a point described in my note as east of the second hump on the left as seen from our camp, but I cannot fix the exact spot on any of the photographs: it lies so deep in the ridge.

From there we went for over an hour up the icy ridge on our right, which runs up to the south or lower peak of the Saddle Peak to a point from which we had a good view of the true Saddle Peak, but it was at least 3 hours away, and if we had had to cut many steps, as was most likely, would have taken us double that time. We turned at noon, had another experience—

‘ With rain, and hail, and fire, and snow ’—

while crossing the small glacier below the couloir on the way down, reached our *gîte* at 7 P.M., left it at 7.30, and getting into trouble in the darkness did not get home till 3.40 A.M. on August 6.

To parties with good porters, who can sleep high up without undue fatigue, the Saddle Peak is practicable from this side in good weather, but if many steps were necessary beyond the point that we reached the expedition would be very long and tedious.

On August 8 we set off to ascertain whether a pass could be made at the lowest point on the main chain between Shkara and Janga. We started at 9 A.M., crossed the lower part of the Kalde Glacier, then ascending by its left bank left point 1,845 on the map on our right, and ascended through some big séracs—in which, as usual, we lost time—to one of several small patches of rock high up on the left of the

pass, where we slept. We had a wonderful view of a purple sunset. From our perch high up amid ice and snow we could see to the south ridge after ridge of hills stretching far away into Turkish territory; to the west lay the Leila chain and the almost unknown mountains of Abkhasia, while close to us to the east was the great mass of Shkara.

At first the night was warm, but about 11 it came on to rain, and there was lightning, but not much—we had become experts in thunderstorms—and later still a very cold wind sprang up.

It cleared about 4.30, and we started at 5.10, climbing as nearly straight up as we could, for it was unsafe to go direct towards the pass. At 11.20 we were stopped by a series of huge rock towers, which from below were quite invisible. To the left we were cut off; to the right was a very difficult slope of ice and snow, which ended under a hanging glacier. We saw no safe route anywhere, and as Newmarch and I had to leave camp for England next day we could not risk a night out high up, so turned back. The way down was very difficult. The snow was sliding off the ice slopes all around us, and we had to choose our way most carefully. We reached our *gite* at 5.30, and the glacier below it at 7.30; but by the time that we had crossed it and got to the moraine west of point 1,805 it was quite dark, so, rather than stumble along over the stones and recross the glacier in the dark, we slept out on a grassy slope above the glacier. We had our usual shower, but got off at 4, and reached camp at 5.30 A.M. Cockin and Woolley had another climb to the Nuamquam Pass,* and made a third attempt on Ushba, as I have mentioned, but that was the last expedition for Newmarch and myself. We said good-bye to our comrades and rode off at 1.30 on the same day, crossed the Latpar Pass, and rode down in the darkness through the woods in seven hours to Lougi, where, after being refused admission at a substantial farmhouse reputed to belong to a Prince Otah, we slept out in the woods just across the river Tsenes-skali. The next day we rode to Tsageri, and so on to Alpane, and home as fast as we could to England.

Before concluding this paper it may be useful for future travellers to the district to summarise the lessons of our trip, reminding the Club that they only profess to be the result of one season's experience.

First: Travel in the Caucasus is gradually becoming

* See *Alpine Journal*, vol. xvi. p. 526.

easier, and need no longer be looked upon as beyond the reach of men of ordinary leisure and means. By Newmarch's route one can reach Tsageri, or beyond, on the seventh day from London, and be in the Leila mountains on the next day, or on the main chain two days later, while the cost of a six or seven weeks' tour in the Caucasus may be considerably less than that of a month in the Alps *with* guides. As regards travel there, the life is still rougher than in most outlying valleys of the Alps, and the difficulty of transport remains very great. The delays and unpunctuality are as great as ever, and one can never rely on getting either horses or porters. Still life is safe and property nearly so. Law and order now prevail where, in 1868 and 1874, murder was common and robbery invariable. 'Twenty years of resolute government' has had its natural effect. Porters who will go on all mountains are not to be had. The best that we had, Moratvi, of Betscho, climbed capitially on rock, and had been taught by Herr Merzbacher to glissade, but he could not go on a slope of hard snow or ice, and absolutely refused to set foot on Ushba. Then the difficulty of interpreting is not so great. We had with us Merun Formovitch Kugawa and Anton, his brother, both of Tsageri, as servants. They seemed to know all the native dialects as well as Russian, and generally understood our wishes as expressed in broken Russian and pantomime. At times also we thought they understood our meaning when expressed in forcible English. They have been with previous parties, are honest according to Suanetian standards, and make fairly capable servants. We had also a subordinate servant, Dianos, of Tsageri, who was a very willing, strong fellow, and would come as a porter until we reached ice or steep snow. Through their agency we could generally buy what food we required, and in some places the natives would even bring food up to our camp on the chance of a sale. They are becoming more accustomed to travellers who do not want to rob them, and are beginning to appreciate the money brought into their province.

Next as to climbing without guides. Any one who wants to make a record of big peaks should go to the north side, with two guides and no other companion, but he may not have such an interesting holiday as ours.

A guideless party must be prepared to undergo great fatigue, and more than one member of it should have had experience of guideless climbing on snow and ice in the Alps, and at least one member should know what being

benighted high up means. They should not be too proud to turn back.

It would, of course, always be better to have one member of such a party who has been to the Caucasus before. Perhaps at this point I may say that although our expedition was nominally guideless, to me it was hardly so, and I think Newmarch will agree with me. Cockin and Woolley were as good as guides, and their knowledge of the country and familiarity with the class of work to be done was of incalculable help to us. I can hardly say too much of what I owe to them both, and to Woolley especially, for his organisation of the expedition and the arrangements for provisions and other necessaries.

As to what a future party may do I cannot prophesy, but this paper will have shown what may be expected by a guideless party in unsettled, thundery weather while climbing on great slopes of ice and snow and ribs of rotten rock facing almost due south. Still other parties will go, and will return, as I have done, after a glorious holiday, convinced that the game is worth the candle, that the abiding interest of seeing that new country, with its strange inhabitants and their primitive customs, more than balances the discomfort of not being in a bed or at a *table d'hôte* for five consecutive weeks. Apart from the mountaineering, it is no small privilege to have ridden through the gorge of the Tsenes-skali, and to have seen the semitropical forests and flowers of the valleys and hill-sides, with gorgeous butterflies flitting by in endless variety, whilst the climber who first sets foot on the south peak of Ushba, on Tiktengen, or on Bashiltau will feel that he is well repaid.

I can best conclude my paper and express my own feelings by saying that I hope it is not for the last time that I have seen, and climbed amongst, those noble mountains.

SCRAMBLES IN THE EASTERN GRAIANS.

By GEORGE YELD. V.

THE evening of August 4, 1892, found me at the chalets of Monei, above the Valnontey, in company with Mr. E. T. Compton, who had very kindly accepted an invitation to join in a visit to the Piantonetto Refuge. We had with us François Pession and André Pelissier, of Val Tournanche, as guides, and Léon Guichardaz, of Cogné, as extra porter. We spent a pleasant evening in watching the spacious amphitheatre of snow and ice which closes in the Valnontey, while Compton

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made the beautiful sketches of the Roccia Viva, and of the Herbetet, which illustrate this paper. The Herbetet has been defrauded of his rights, and reminds one that not only is it true that the world knows nothing of its greatest men, but that it is not less true that great mountains frequently miss the meed of fame which they deserve. Otherwise this glorious peak, now beginning to gain fame, would ere this have enjoyed the pride of place so long reserved for the Grand Paradis, the Grivola, and the Tour St. Pierre. A glance at Compton's picture will prove the truth of this statement.

On the morrow we walked leisurely up to the Coupé de Monei, Compton, who was in the pink of condition, generously accommodating himself to the infirmities of an arrival of yesterday. Chamois and bouquetin diverted our upward way, the latter showing splendidly against the sky-line, to the great excitement and delight of François and André. When we reached the Coupé, and saw others in the Valeille, the beautiful and fearless creatures performed such feats that François exclaimed, 'I wonder they do not kill themselves!' The enthusiasm of the two Val Tournanche men was pleasant to witness.

About ten o'clock we left the Coupé and began the ascent of the peak to the south of it, now known as the Tour St. Ours; for surely the patron saint of Cogne would be found as near as possible to St. Andrew and St. Peter. Blanchetti once told me at Ceresole that he had climbed the peak near the Coupé de Monei with an Italian gentleman. I took him to mean the Tour St. Ours, but when Mr. Stallard's party climbed the Tour St. André, nearer the Tour St. Pierre, and found Blanchetti's card on the summit, the inference I at once drew was that the peak immediately above the Coupé, now known as the Tour St. Ours, had not been ascended. Only one course was therefore satisfactory—viz., to climb the peak. Well, an hour and three-quarters—the first part spent in cutting up and across a steep slope, the latter portion of which was ice, wherein François made magnificent steps—sufficed to bring us to the summit. After reaching the rocks we, roughly speaking, climbed straight up. The top was cairnless, and I have no doubt that we were the first to visit it.

Our meal was crowned with a bottle of the best red wine that the cellar of the Hôtel de la Grivola could furnish. It can generally supply something respectable, but the brand varies. In 1893 Torette was the thing to ask for. If anyone is in doubt what to demand I would recommend my plan to him. It is simple, and consists in beginning at the top of the list, which Madame will, on request, write out for him, and trying the wines in order till he finds one that pleases. But to-day, alas! 'all is fortune.' When we returned to Cogne and called for the same brand (we had carefully preserved the label) we were presented with a white syrup nearly as sweet as honey. Moral: Labels tell a tale of little meaning.

We descended a huge snow mamelon to a col now known as Col Paganini, and then by rocks and snow we went down to the Monei Glacier. Where we stepped from rocks to snow there were some five or six steps in ice, and here Guichardaz, who was immediately in front of me on the rope, seized the opportunity to give a hard jerk just as

I reached the second ice-step. Naturally I shot down the ice-slope, to the amusement of the company; but a few forcible words from François—under cover of which I regained the steps—brought the culprit to a sense of his wrong-doing.

Once on the glacier we made for the Col Monei, and thence descended to the Val Piantonetto. There was a good deal of mist about, and we went so far *down* that we had rather a long climb *up* to the refuge. This refuge (9,023 feet) is well built and comfortable, and we would both of us express our gratitude to the Italian Alpine Club for the use of so pleasant a shelter.

The next morning we reached the Roccia Viva Glacier by way of the Bocchetta di Monte Nero,* between the Monte Nero and the Tête



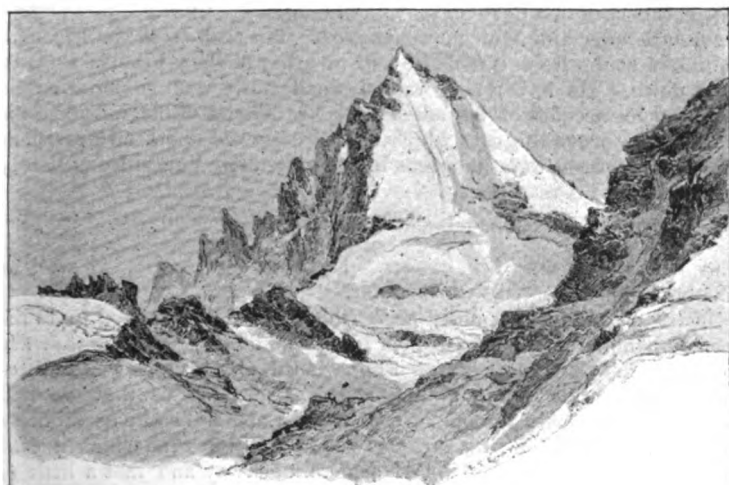
THE BEC DE LA PATIENCE AND ROCCIA VIVA, FROM THE MONKI CHALETS. (Evening.)

de Monei. When we reached the glacier Compton remained to sketch, whilst François, André, and I made for the peak marked 3,552 m. (=11,655 ft.) on the Italian Government map, and 3,604 m. (=11,825 ft.) on Signor Paganini's. This peak I had set my heart upon. It shows well from the Cogne meadows—in fact, it affects rivalry with the somewhat higher Roccia Viva. It appealed too to me on other grounds. SS. Vaccarone and Martelli have in their excellent guide-book abolished the Roccia Viva Est. Its abolition certainly simplifies matters. But I had longed for this peak for years. When Coolidge and I, in 1885, ascended the Tête de Monei, Signor Martelli claimed—and Coolidge and I from his description at once admitted that he claimed with justice—the first ascent of that peak, though he

* *Alpine Journal*, vol. xiii, p. 120.

had climbed it as the Roccia Viva Est. Now, in many discussions with Coolidge I had always maintained the—shall I say?—autonomous existence of the Roccia Viva Est; and when the Tête de Monei turned out to be the peak claimed under that name, and our ascent of the same to be the second, instead of the first, I registered a vow to see by actual inspection of the top what peak 3,552 m. was like. Patience not a little had to be exercised, and so I venture, after climbing it, to name this peak for which I so patiently waited the Bec de la Patience.

We climbed it without difficulty. The summit is beautiful—a



THE HERBSTET, FROM NEAR THE CHALETs OF MONEI.

short snow-ridge of great loveliness with a glorious view, though we saw only part of it, as clouds denied to us

The long array of helmets bright,
The long array of spears,

which we ought to have seen in the great peaks of the Eastern Graians. The Tour St. Ours looked shapely, the Monei Glacier very large, and our eyes commanded the most magnificent of Cogne's frozen cataracts, the icefalls of the Tribulation and Dzasset Glaciers.

On our way up we had seen several chamois and four ptarmigan, called albinos by the men. On the way down I paid some attention to the flowers which lit up the rocks here and there with their bright colours. Most beautiful was *Eritrichium nanum*, the most brilliant of forget-me-not blues. One tuft was worth the climb to see, a large cushion absolutely ablaze with blossom. The modest beauty of *Petrocallis pyrenaica* and the rose-flushed cup of *Ranunculus glacialis* were almost equally attractive. These same three I had previously

found in profusion on the Becca di Noaschetta. There were also *Chrysanthemum alpinum* and a *Cerastium*.

Before we reached the Refuge the weather had become bad, and thick mist and rain caused us considerable annoyance. Moreover our provisions ran short—as Guichardaz, who ought to have arrived in the evening, failed us. In the morning, as no Guichardaz had come, and we were foodless, we descended to the Muanda, or Teleccio.

The herdsmen received us hospitably, and we breakfasted on milk and polenta. We were much amused with the chalet dog, who, under the mask of simplicity, concealed many knavish tricks. After he had made friends with us we found him searching the knapsacks with all the enthusiasm of a *douanier*.

A little after nine Guichardaz arrived. We had, from the Muanda, seen him at the Refuge, and had sent up a boy to show him the shortest way down. He had really walked wonderfully well, considering his age, but his account of his adventures, his defence of his mistakes, his attempts to prove the care which he had bestowed upon the provisions under his charge, were ludicrous in the extreme. Volubility is hardly the word for his readiness,

The full-flowing river of speech

but faintly suggests his powers. François and André, as well as Compton and I, roared with laughter.

First he produced sundry eggs, which had been wrapped up in his pocket-handkerchief, showed them round, and said, 'You see they are not broken.' Then he held up a huge bottle of a gruesome blue complexion, made to hold paraffin, and explained to us that he had deposited a lira with the landlord of the inn at Perebecche as security for the restoration of this precious vessel. Of the wine which it contained I can only say that it had come a long way and that a little of it certainly went a long way.

Then the old man enlarged on his descent of the previous day. 'As I went down the valley I asked how far it was to Perebecche. "Four hours."' He then tramped a 'beau morceau' and inquired again. 'Four-and-a-half hours.' So he thought he had better return, but, being a plucky veteran, persevered. After that he spoke of his return. He came to the Muanda and knocked at several chalets, but could get no answer. He missed the one in which the herdsmen were. After that he seems to have gone up most of the smaller peaks in the neighbourhood. He would find it very cold, whereupon he would 'put himself to dance' for an hour. Then he would wander to some other point, and again 'put himself to dance.' These adventures of his were really a strong testimonial to his powers of endurance, for he is well advanced in years.

After a debate as to what we should do—it seemed too late to try a new way back to Cogne—we decided to descend to Pont Canavese, and regain Cogne by the Col Bardoney. We hoped to be rewarded with a full view of the peaks near that pass; a sight I had long desired, but on my two previous visits been denied by bad weather.

So we started down the Val Piantonetto. A little more than an hour

below the Muanda there is a big grotto with water falling from the top at the end of it—an effective picture. The Scalari are decidedly interesting. Two-and-a-quarter hours after starting we stopped for lunch. ‘The place for a painter’s camp’ was Compton’s description of the spot where we halted. A green meadow, a bubbling spring, the flashing torrent, and a noble framework of mountain walls here delighted us.

The most striking part of the vegetation was the ferns. Everywhere their soft green soothed the eye, and many of them were of the hay-scented variety. Water too was everywhere, clear and cheerful-voiced. As we got lower the vegetation gradually increased in richness. Hay perfumed the air, and drying chestnut foliage added its heavy fragrance. But the last bit of the descent to the Locana road was detestable. It is paved with cobbles and the brooks take to the track at will. Result: Exasperation. But as we neared the highway the streams talked more audibly. In the hot sunshine their eloquence became more persuasive. Who shall describe their sparkling freshness, their exuberant life, their deep-throated music? They reminded one that Virgil was born under the same sky. May such a scene as this be my refuge when age compels me to cry

Flumina amem silvasque inglorius !

At length we reached Perebecche and its Cantina Reale. Boys from eight to seventeen were playing at cards under walnut and chestnut trees. When Guichardaz had restored the gruesome-looking bottle and recovered his lira we departed to Locana. As we trudged along, the sound of brooks, especially the big one by the roadside, was most delightful, and no treasures of the greenhouse could be more graceful than the myriads of ferns which everywhere overhung the water. We reached at 3.30 the Corona Grossa at Locana, where Compton had been well entertained some little time before, and were shown into a room with a balcony clothed with fig trees. We afterwards drove down the Val d’Orco to Pont Canavese, where we found fair quarters at, as far as I can remember, the Corona Grossa.

The next morning we started for the Col Bardoney. There is now a fine carriage road for two-and-a-half hours to the point where the road to Ronco and the Bardoney path separate. At that point the engineers were busy with a new bridge. About half-an-hour up the Forzo Valley we stayed for breakfast by the side of a little stream. Here, as I reached back to fill a cup, I thought I must have crushed some aromatic plant—there was so sweet a scent. Another look discovered *Cyclamen europæum* nestling under fresh green ferns.

A little above Tressi there were beautiful pools of turquoise water in the torrent, and cranberries were not uncommon. Higher up bilberries were plentiful. As we drew near the Col the clouds came down, and consequently in such a case—

If straight thy way, or if oblique,
Thou know’st not.

We went too far to the west, and also too high; but at last the Col was found. In the thick mist the guides asked Guichardaz, ‘Where is

the Col?' 'I cannot see it,' he replied in all good faith. Then, as we began the descent, the rain pelted us hard. We hurried down the little Bardoney Glacier, but though we went at a good pace we did not reach Cogne till after dark.

Tuesday was a gloomy day, as Compton left me, to my great regret; and Wednesday brought more rain, so that no start could be made. Thursday, however, treated us better.

We followed the Col Trajo route, seeing many fine views by the way, to the foot of the little glacier which lies under the Grivoletta, hitherto nameless. I propose to call it Glacier de la Grivoletta. The moraine was quite a nursery of *Campanula cenisia*. Up this glacier we made our way, not without amusement. It is steep, and boasts three big schrunds. These we had to cross. We then took to the rocks on the true right of the glacier. These were steep—at first smooth, afterwards loose. By them we reached the Col between this little ice-field and the Trajo Glacier, for which the name Col de la Grivoletta seems natural. This scramble, as we found it, could hardly be called easy. The rocks just to the east of the Col were most grotesque, like eagles' beaks in shape. We had a jump down to the snow of the Col. Thence we followed the ridge to the summit of the Grivoletta, where we found my card of 1885.

One of my objects was to see whether it would be feasible to start from Cogne and ascend the Grivola by Mr. Pendlebury's beautiful snow-ridge, but I am afraid it would be too long a task. Passion was very eager to try the ridge, but thought that it would be necessary to camp out somewhere in the rocks. Before we left the top clouds appeared everywhere, and I reluctantly gave up the intention of descending from the Col to the west of the Grivoletta between the Trajo and Grivola Glaciers. I propose to call this col, which I have twice reached but never crossed, Col des Clochettes. If an apology for so fanciful a name is needed I would plead the music of the cow-bells from the Nomenon chalets, the most vibrating memory of my previous visit. We returned to Cogne by the Trajo Glacier and the ordinary Grivola route.

The next morning we descended to Aosta. On the way I succeeded in rediscovering some raspberries which I had noticed when going up to Cogne. They were dead ripe and plentiful enough to have feasted an Alpine company. We did not cross the river at Aymaville, but kept the comparatively shady path on the right bank.

I cannot leave the guides without saying that Compton and I were highly pleased with both of them. They did their work well, and showed a keen interest in, and admiration for, the mountains.

Whilst I was looking out of the Hôtel du Mont Blanc at Aosta I saw a lean cat in the road and a swallow taking shots at the cat's head, apparently to see how near he could go without touching. My only discovery in Aosta itself was the following advertisement:—

TO THE GENTLEMEN ALPINIST.

In this storehouse you will find any gastronomic speciality for the mountain as a Delicious salt pork and Ham.

I went to the Alps in 1893 with an open mind. New guide-books, new maps, a prospect of new expeditions, led me to examine a new centre for excursions. I journeyed to Liddes, on the St. Bernard route, where the little Hôtel du Grand St. Bernard is clean and comfortable. I walked up from Orsières with Slingsby and his companions, who had just concluded their brilliant campaign at Chamonix, and were on their way to the Grand Combin. This was a great pleasure, as it is very unusual to meet with members of the Club in the Graians.

The next day I took an interesting walk of about 3,000 ft. through woods—which reversed the poet's comparison, and were branched like mighty cloisters—and pastures to the ridge opposite Liddes on the west, and thence enjoyed a good view of the eastern end of the Mont Blanc group and the western face of the Grand Combin district. The peaks were fine, but memories of Cogne were too strong. My resolution to try new ground vanished, and I went to Aosta.

André Pelissier was engaged, and no one arrived in his place in time to go to Cogne with François Pession and myself. On our arrival at the Hôtel de la Grivola we found a dozen officers at table, but Madame explained that she had reserved a room in case Coolidge, or Gardiner, or I should arrive. So I was comfortably installed in the old house, which I much prefer to the modern magnificence of the Hôtel de Ville.

Just as I was starting on the following day, after engaging Joseph Jantet to join us, Signor G. Bobba, who is so well known for his work in the Graians, and specially for his monograph on the Grand Paradis and Grivola, came to see me. We promptly fraternised. I invited him to join me, and he readily accepted.

We had a pleasant walk up to the chalets of Monei, where the herdsmen were, as ever, very hospitable. A merry evening and a quiet night followed, and in the morning we started off in the direction of the Coupé de Monei—bent on an expedition which, as we rose in height, soon declared itself in the existing condition of the glacier too much for us—especially as, though François is a host in himself, we had not a normal force of guides.

Now was to be made apparent how difficult a thing it is to really know all about a district such as the mountains of Cogne. It was with wonder that I was brought to think that in our often-ransacked world still so much gold was left.

We had seen from the chalets a huge ridge in form something like the Alphubel (of course, on a smaller scale), which I could not properly place on the map. It had no name and no place—I say it with shame—on any map except Signor Paganini's. Zeal in cutting out imaginary rocks, which appear in other maps in the wrong place, caused me, even with a photograph before my eyes, to cut this ridge short. In the photograph it is, naturally, much dwarfed. Well, when it became clear that our proposed expedition would not come off, because the Monei Glacier this year was a magnificent spectacle of séracs in a state of insurrection, it was decided to climb the crest which is marked on Signor Paganini's map 3,444 m. = 11,300 ft.

The climb was a pleasant one; good as François took it 'pour s'amuser,' as he remarked. I do not think he picked out the easiest way, but wisely gave me as much training work as came to hand. I am afraid that in one place I scandalised Signor Bobba by accepting help in the shape of Jantet's proffered back. He was so anxious to aid me that I had not the heart to refuse him. The ridge climbed, and a snow-crest topped, we saw plainly where Compton and I had descended in 1892, and I then and there proposed to call the ridge *Cresta Paganini*, and the col *Col Paganini*, as a compliment to my friend Signor Paganini, who alone has properly laid it down on his map. As Signor Bobba is one of Paganini's friends, and has a great admiration for him, the proposal was carried with enthusiasm.

By descending in the direction of the *Coupé de Monei* we were able to complete last year's pass. The first part of our descent was down as steep a snow-slope as one often meets with. Jantet led and cut the steps. The bergschrund at the bottom caused some trouble, and then we marched up to the *Coupé de Monei*, at Signor Bobba's request. This climb clears up the *Monei Glacier's* problems. We descended to the *Monei chalets*, and thence to *Cogne*.

On August 21, Signor Bobba, with Casimir Thérissod, of *Val Grisanche*, and François and Sylvain Pession, of *Val Tournanche* (who arrived to join me as second guide on August 20), and I started for the *Punta del Tuf* (11,221 ft.—*Paganini*), under which title (written *Tut*) in the 'Climber's Guide' appears the exhilarating notice, 'No information.' The peak is well seen from the hamlet of *Valnontey*, whence its apparent size somewhat astonished me. We followed the King's path to the *Lauzon Hunting Lodge*, and then made for the north-eastern ridge of the peak. This we climbed by rocks for the most part, though a patch of snow or ice occasionally cropped up. Signor Bobba and Casimir led the way. The top was reached without difficulty, and no trace of previous visitors could be discerned.

We then descended to the col between our peak and the *Grand Sertz*. This was a pleasant scramble, as the rocks were firm though steep. But once on the col an entirely different enterprise lay before us. The whole of the face above the *Glacier de Lauzon* was evidently more or less—and I should say generally more than less—raked by falling stones. There were traces of them everywhere, and the glacier below was dark with their corpses.

After a long examination we decided in favour of a sort of flattened ridge on the face of the cliff in parts well worn by stones, but obviously the least dangerous part of the precipice between us and the glacier. By this we descended as fast as we could, though, as the footholds were some distance apart, progress was not as fast as could have been wished. I own that I cast an anxious look upwards now and again, but no stones fell. Step-cutting was necessary here and there, though not for long at a time.

At last we reached the glacier, and were out of range of anything that might fall. Then we halted to examine the face, and agreed that we had followed the best route possible. We then traversed the *Lauzon Glacier* to the *King's Hunting Lodge*. A herd of chamois

gave us much amusement. The way in which they dashed forwards, and afterwards back, through a torrent was a sight to be remembered. A single chamois then appeared close to us, and interested us much by his antics. We went down to Cogne.

On August 23 the same party left Cogne for the Piantonetto Refuge by the Col Teleccio. On the first part of our journey we enjoyed the light of a lantern. Afterwards we spent some time in a torrent, an occupation very stimulating towards the study of 'figures of imprecation.' Finally, as the light improved, we found ourselves on the King's hunting path in the Valeille.

After we had followed the path nearly to the moraine of the Valeille Glacier we took to the cliffs on our right, where, for our folly, we came across one or two nasty bits of rock-climbing, interspersed with steep and slippery grass slopes—of all abominations, to my mind, the most abominable. We here repeated the experiences of the hero of whom the modern bard observes:—

Then Tomlinson looked up and down, and little gain was there.

Like Tomlinson, we looked up and down, found that we had gained nothing, and had humbly to make for the despised moraine. Nor was this all, for another party a few days later, seeing our traces, repeated our Tomlinsonian experiences. Eventually we reached the Teleccio Glacier.

On our way to the col we looked at the Pointe de Valeille, but avalanche rehearsals were going on, and we did not feel tempted to turn aside. It was a long business to reach the usually easy pass. The glacier was cut and curved in a most unexpected manner; but the fact that the chasms were most beautiful to look upon did not help us much, though it delighted our eyes. It was necessary to 'wind about and in and out,' and, as a consequence, progress was by no means rapid. We had to do obeisance even in the humblest fashion, as one huge chasm-bridge refused to be crossed—at least we did not venture to cross it—except on hands and knees.

We descended to some rocks a little on the Piantonetto side of the col, and there devoured our victuals, and the view at the same time. We took about two hours, easy going, from these rocks to the Rifugio, and met with many flowers on the way. It was a curious proof of the warmth of the weather last summer that in the Rifugio (9,023 ft.) I found it necessary in the night to throw aside even my jacket, which I had taken off and spread over my shoulders. As for the sheepskins over one's legs, they were soon discarded. This, as far as my experience goes, is a very rare occurrence. It is generally difficult to get enough wraps to keep oneself warm. I remember once at the little inn at Ferpècle, when visitors were scarce, making a raid through several rooms before I got enough blankets to keep the cold out.

On August 24 we all started together, but when we reached the moraine of the Roccia Viva Glacier we agreed to separate. Signor Bobba and Thérissod attacked the central peak of the Becchi della Tribulazione, which, notwithstanding its difficulties, they succeeded in climbing, whilst we went for the peaks which I have named the

Jumeaux de la Roccia Viva. Anyone who examines Mr. Compton's beautiful picture of the Roccia Viva group from the Monei chalets will, I think, recognise the fitness of the name. Seen from the Piantonetto the peak we climbed is of 'a compelling dignity.' It did not take us long to get to the foot of our mountain—at the bottom of Coolidge and Gardiner's big snow-couloir on the Roccia Viva—though the glacier was much crevassed for so generally amiable an ice-stream.

When we had reached the great snow-couloir we turned a little to our right and began at once to be interested. Perhaps memory plays us false, perhaps an undue affection for these mountains warps my judgment, but our ascent certainly seemed to me one of the most interesting in the Cogne group. When once we got to work on the rocks François was delighted. 'It is the Cervin without ropes,' he cried. It was, as he remarked, *quelque chose de chic* when once we had left the glacier. I apologise that I cannot give the minutes that the different parts took. I was so interested that I forgot times. Yet, I dare say, should anyone repeat the ascent he will think my enthusiasm exaggerated. Be it so, yet our joy in a really excellent climb cannot be destroyed.

The rocks were always good. Once both guides went up and left me behind. Thus are tiros raised. Haul away and up goes the imbecile. I shouted, 'Wait a bit!' not being minded to lose the enjoyment of the climb. 'Is all things ready and all things neat?' 'Certainly.' So I leisurely, being unable to reach the first foothold on my left, set my back against one side of the chimney and my feet against the other, and so worked my left foot on to the appointed hold. All goes well. Gently does it. By this time I had reached the men.

Occasionally, like a flash of sunlight, little tufts of Alpine flowers lit up the rocks with a shy smile. Then the guides spoke of the delights of the Matterhorn from Val Tournanche; and how it could be done without the help of the fixed ropes. You will recollect 'This is the Cervin sans cordes.' Oh, it was like a glimpse of youth again for one with more than the good Kent's years on his back.

At last we got to the final rock. Up went François, not without an effort. Then I followed, with Sylvain's help minus much of the skin of my knees. But is it not thus that one 'amasses souvenirs' on a rock peak? The height given on Signor Paganini's map is 11,776 ft. The chimneys were the great feature of the climb.

And the view? Splendid. We looked down the Valnontey to Cogne, but that did not so much impress us. The sky was a blue black. A heavy thunderstorm was evidently approaching fast. It would ere long be upon us. Prompt departure was absolutely necessary. Even now the recollection cost me a cruel pang. There was the other 'twin' hard at hand, and evidently feasible without difficulty. But no—we dared not wait. Nothing remained for us but to retreat with all speed. So five minutes was all we spent on the top. Yet I do not think that any view from a summit in the Cogne district will live longer in my memory. As I recall that day the shadow of the

storm, as it gathered its forces together, darkens the whole group with its gloomy majesty; and I doubt if all the splendour of sunshine and cloudless skies impresses one as much as the sombre glory of the approaching tempest.

We descended at our best pace—Sylvain first, François last. One or two hard places we avoided, partly by a couloir to the east; and when the lightning began to flash and the thunder to roar we were getting near the great snow-couloir by which Coolidge and Gardiner, with the two Almers, ascended the Roccia Viva. When we were once in the couloir everybody went at his best pace, regardless of slips. I tumbled several times, but picked myself up as quickly as possible, and went at it again. *Quid multa?* We reached the shelter of a friendly rock, and, the axes having been planted a little way below us, we awaited the passing of the storm.

The lightning was magnificent, and I was thankful to be in a position of comparative safety. In time the storm flashed and roared itself away, and then we started for the Bocchetta di Monte Nero. So completely have the climb and the storm dominated my memory that I cannot remember when or where we took our meals. In about an hour from the Bocchetta we reached the Rifugio, at times much astonished by stones that noisily leapt down the rocks to our left.

On the 25th we all left together for Cogne by the Col Monei. As I have already explained in this Journal,* we varied the ordinary passage by climbing a rock-ridge to the west of the ordinary route, and striking the watershed about twenty minutes west of the col proper. We thus avoided the couloirs, in which, to judge by what we heard and saw, the stones had certainly been called early. The Monei Glacier, as I have said before, was in an unusual state of chaos this year, but we did not meet with any great difficulties. We aimed for the foot of the Cresta Paganini, whence an hour and twenty minutes' step-cutting on the part of Casimir (we were all five on one rope), who was leading, carried us to easy ground. Part of our route was subject to stones, which obviously sometimes fell in considerable numbers from the Cresta Paganini. As the steps were in ice, any demonstration on the part of the stones was much to be deprecated. Fortunately, we were there early in the day, and they let us alone.

After a friendly call on the herdsmen at Monei we went down to Cogne. This route is now quite rich in memories. Here you jump a torrent; here is the place where Compton stayed to sketch; here in ages past Baker and I met and foregathered with two friendly garde-chasses; here they relate the pitiable history of the donkey that fell over the precipice; here is found the most delicately coloured *Aster Alpinus* I know; here in a late season the whole mountain-side is ablaze with rhododendron.

My time was now running out, and it remained to choose a route to Aosta which should give us an interesting scramble on the way. I decided to take the Col Trajo, and try the Punta Crevasse by the ridge. This peak was first climbed by Messrs. Coolidge and Gardiner

* *Alpine Journal*, vol. xvi. p. 508.

in 1889 on their way from Cogne to Aosta, but they did not follow the ridge, on which are many rock-towers; of which one may say with truth—

A wild and warlike group they stand.

We had a beautiful morning, made the climb up from Epinel with interest, and struck the ridge a little above the Col Trajo, on which a small herd of bouquetin were reposing. Then we turned to the left, and ascended without difficulty till we came to the first of the towers. The character of the work was then completely altered. Up and down over the towers we clambered, the climbing being always interesting, though the rocks were too rotten to give the delights we had enjoyed on the Jumeaux de la Roccia Viva.

Time after time, at the second or third trial, the rock came away in one's hand; but distrust begat prudence, and no serious trouble resulted. François would go ahead to the full extent of the rope, and I would shout, 'You have got all the cord!' 'Two feet more!' he would cry, as I crept a pace forward. Then, out of sight of both guides, I followed round rotten ledges, distrustful, but not discontented, for by this time I had begun to consider our ascent by the ridge a kind of triumph. 'They went below,' I shouted to François. 'We shall do it by the ridge, eh!' 'Yes, monsieur, I think so,' he would reply. Then a chamois attracted our attention, and stones from the guides. He was quite close to us on a big lateral spur. We were amused, and he, no doubt, saying to himself, 'What fools these mortals be!' escaped unhurt, little recking that the men were jeering him in the same style.

The climb was never really easy—the rocks were too rotten—but it was always interesting. As we climbed tower after tower, 'All the gendarmerie of the province are here,' one of us remarked. Then we came to the last two towers. These we turned a little below their summits on the west side, and at last, after an exacting scramble, we reached the top. Now human nature being what it is—and the makers of Climber's Guides—I speak personally—are sufficiently human—I am bound to own my chief delight was that we had climbed the ridge because the Guide speaks of numberless rock-teeth which force the climber from the ridge on to the face.

We found on the summit (10,850 ft.—Paganini) two little cairns, which sufficiently attested Coolidge and Gardiner's ascent, though we could not find their cards. We then enjoyed a pleasant meal, and surveyed the world. How splendid was the Grivola! Pendlebury's snow-ridge looked like a fairy path to heaven, and one of the greatest delights was to climb again in memory the ridge from the Col de Belleface which Baker and I had conquered in 1881, though in those days we called the pass, with avuncular respect, 'Col de Mesoncles.' It was a glorious day. Little does the tourist who travels by Epinel and its green meadows suspect how beautiful that village looks from 10,850 feet. Often as I had passed Epinel, never before did I properly appreciate its pastures, its river, and its pine woods.

At last it was necessary to make a move, and we decided to descend

by our ridge route, instead of following the easier way which Coolidge and Gardiner had followed in their descent. We went at a fair pace, and in due time were enjoying the glorious view of the Grivola from the Gran Nomenon chalets. Probably there is no more splendid near view of a great peak to be found in the Alps.

'Like wealthy men that care not how they give,' these remote and little-visited cowsheds throw in glorious views of the Aiguille du Géant, the Grandes Jorasses, and the Grand Combin.

I would conclude this paper with the remark that François quite fulfilled my expectations—that he would prove a first-rate guide—while Sylvain was always cool, collected, and capable. I may add that both of them, and André Pelissier too, are keen to go to the Caucasus, and would, I doubt not, prove themselves excellent guides for exploration in that country, which still offers so much that is new to the ambitious mountaineer.

ON BOUQUETINS.

BY W. A. B. COOLIDGE.

THE Bouquetin, Steinbock, or Stambocco (*Capra Ibez*), was formerly widely spread through the Alps, but is now extinct everywhere in that chain, save in the mountains of Cogne. Varieties are, however, still to be found in the Pyrenees, in the Sierra Nevada, in the Caucasus, and in different ranges in Asia, Africa, and perhaps America. It belongs, zoologically speaking, to the goat tribe; while the chamois—*Rupicapra tragus*—(with which it does not mix or breed) represents the antelope tribe. It is mentioned by many old writers as existing in Switzerland, while its bones have been found in ancient caves, though never in great quantities. But as early as the sixteenth century it was rapidly becoming extinct in the Swiss Alps. The last bouquetin in the canton of Glarus was shot, in 1550, on the Glärnisch, and the last in the St. Gotthard district in 1583 (not in the eighteenth century, as commonly asserted). It lingered latest in the Vallais, the Grisons, and perhaps in the canton of Bern. In 1574 the Archduke Ferdinand of Austria ordered his bailiff in the Grisons to supply him, for his zoological garden in Innsbruck, with two young bouquetins such as he had before obtained from the same district; but a letter is extant from the unlucky bailiff, lamenting that it was nearly impossible for him to execute this commission, as so few bouquetins were still to be found. Certain it is that in 1612 a heavy fine was imposed in some parts of the Grisons (*e.g.* Upper Engadine, Vals, and the Bregaglia valley, as well as the hills round Chiavenna) on anyone hunting bouquetins in those regions; while in Tyrol and Salzburg they disappeared before the middle of the eighteenth century, despite the care taken to preserve the race. In 1786 Wyttenbach, a famous Swiss naturalist, supplied Coxe with a list of the Swiss fauna, and included in it the Steinbock, though remarking that it was then extremely rare. It is stated that the last Steinbock in the Vallais was

shot near the Dent Blanche in 1880, and when the bones of seven others were found in an avalanche near Arolla some years later, it was supposed that the race was quite extinct; yet one is believed to have been seen on the Seilon Glacier as recently as 1874. It is also said that about the early fifties of this century many were seen and captured on the S. side of Monte Rosa; but this has been denied, and appears at least doubtful.

As long ago as 1821 Zumstein secured from the King of Sardinia that the pursuit of bouquetins in his dominions should be prohibited under heavy penalties, and this measure has certainly been the cause of preserving these interesting animals in the ranges round the valley of Aosta. It is practically in the Cogne mountains that they alone still survive. Occasionally a specimen is shot in the neighbourhood of the Grandes Jorasses, or in French territory at the head of the Isère Valley, where, in 1891, I saw near Fornet a fawn which took most kindly to its adopted mother, a goat, and was quite tame, coming when whistled for, though it only lived a few months in captivity, dying of ophthalmia; but these rare individuals had undoubtedly wandered or been driven away from the main herd in the Cogne Mountains.

In the year 1850 Victor Emanuel hunted for the first time in these ranges, though it was only from 1856 onwards that he gradually bought up the shooting rights in all the valleys south of Aosta (the rights round Cogne in 1858), which thenceforth became his favourite summer resort. The first of the many excellent mule paths which now intersect these ranges in every direction was constructed in 1861. They are found in the wildest and most remote gorges, and generally lead to the very edge of the ice, thus saving climbers many weary tramps over moraine, though they must be on their guard, as some paths lead to gorges which are blocked at the end, and serve only to annoy and enrage the wayfarer who has blindly followed a splendid path ending in a hunter's *cache*. The highest of these paths is probably that *over* the Col de Lauzon, which is nearly 11,000 ft. high, while it is stated on excellent authority that the total length of paths constructed by the king in these districts approaches 250 miles! From 1863 onwards permanent, though simple, shooting lodges were built by the king, such as those above Champorcher at Dondena, on the Cogne side of the Col de Lauzon, on the Col de Nivolet, in the Ciamosseretto glen above Noasca, and at Orvieille above Dégioz. In 1869 the king purchased the fine castle of Sarre, not far from Aosta, in order to receive the trophies of the chase, and there must be many pairs of bouquetin horns in that mansion, as the laws are very severe against either poaching or selling horns or skins of these animals. Even members of other royal families have the greatest difficulties in obtaining permission to hunt in the district, and it is said that the number of head they may kill is rigorously limited in each case. In 1874 the king bought the old tower at Cogne, which formerly belonged to the Bishops of Aosta as lords of the manor, and had it enlarged and restored to serve as his head-quarters. Many gamekeepers and beaters are employed in the royal hunting parties. It is a very pretty sight to see the return of the hunters, followed by the long procession of men

carrying the spoils of the chase. One evening in August, 1885, I saw no less than twelve bouquetins and twenty-five chamois brought in as the result of the day's exertions. The estimates of the number of bouquetins actually in existence in the Cogne mountains vary considerably. The books put it at five hundred or so, but one of the gamekeepers informed me that the number probably did not exceed three hundred. Of course there are enormous herds of chamois besides, so that bands of seventy and over are not unfrequently seen, particularly on the Lauzon and Gran Neiron glaciers. They seem to be aware that they must not be shot by any ordinary person, and allow one to approach quite near without showing any signs of fright. The extraordinary spectacle of such almost countless herds of wild animals once so roused the imagination of one of my Bernese guides, a mighty hunter at home, that that night he dreamed that he had successfully pursued and captured a bouquetin, on whose back he vaulted, and was being borne swiftly to his native village, when he awoke and found that it was all a tantalising vision. Attempts have been made within the last twenty years to reintroduce the Steinbock into the Grisons and parts of the Eastern Alps, but they do not seem to have attained any permanent amount of success. Hence it is probable that Steinbocks will survive only in the Cogne mountains, and that owing solely to severe regulations and unremitting care. In other districts the names of a peak or pass, as the Dents and Col des Bouquetins, near Arolla, or of an inn, as at Chur and at Lauterbrunnen, will be nearly the sole memorials of a vanished race. The Steinbock, which figures since at least 1650 (the seal of that date being pretty certainly copied from a more ancient one now lost) on the armorial bearings of the Grey League of Rætia, and, since 1466, on those of the city of Chur, will be more lasting monuments perhaps to show that the bouquetin was a living animal in those regions before he stiffened into a purely heraldic one.*

Authorities.

The fullest monograph on bouquetins is Dr. A. Girtanner's 'Der Alpensteinbock' (Trèves, 1878), of which an Italian translation is given in the 'Bollettino' of the Italian Alpine Club, 1879, pp. 412-61. See also the classical work on Alpine zoology, F. von Tschudi's 'Das Thierleben der Alpen' (1853, pp. 307, 542-57 of the 2nd edition, 1854). An outline of the subject may be found on pp. 22-8 of Dr. Conrad Zeller's 'Alpenhiere im Wechsel der Zeit' (1892, one of the series of 'Zoologische Vorträge' issued under the direction of Professor William Marshall, of Leipzig). Consult, too, Professor T. G. Bonney's 'The Alpine Regions of Switzerland, &c.' (1868), pp. 186-8.

Some curious and interesting details may be found in the older writers, such as the following:—S. Münster, 'Cosmographia Universalis' (pp. 348-9 of the Basel edition of 1550); J. J. Stumpf, 'Beschreibung der löblichen Eydnesschaft' (1606 edition), p. 609; Conrad Gesner's 'Thierbuch' (published in Latin in 1551-8, and in German in 1563; the passages relating to Steinbocks

* In the engraving by the 'Master of the Amsterdam Cabinet' (Max Lehrs, No. 39), representing St. Michael casting down the Dragon, it is worth notice that the dragon's horns are the horns of a Steinbock. The period of activity of this anonymous engraver was about the last quarter of the fifteenth century, and his style is that of the Suabian school of the period.—(ED. A. J.)

are reprinted in Girtanner's book mentioned above, pp. 12-14); J. J. Wagner, 'Historia Naturalis Helvetiæ Curiosa' (1680 edition), pp. 176-7; W. Coxe, 'Travels in Switzerland' (1789 edition), ii. pp. 36-59; Berthout van Berchem, jun., 'Beschreibung und Naturgeschichte des Steinbocks der Savoyischen Alpen' (in Höpfner's 'Magazin für die Naturkunde Helvetiens,' 1789, iv. pp. 333-68); and another Dr. Girtanner's essay (in the same vol. of the same magazine, pp. 381-90). In the index to B. Studer's 'Geschichte der physischen Geographie der Schweiz bis 1815' (1863) mention is made of other works on the subject.

In addition to these general works, some information as to bouquetins in Switzerland may be gleaned from Coxe (ut supra), iii. pp. 334, 343; G. Theobald, 'Das Bündner Oberland' (1861), p. 204; S. W. King, 'The Italian Valleys of the Pennine Alps' (1858), p. 338; 'S. A. O. Jahrbuch,' xvi. p. 654, xviii. p. 540, xx. p. 620; 'Mittheilungen' of the German and Austrian Alpine Club, 1879, pp. 168-70; and the 'Echo des Alpes,' 1874, p. 207, 1879, pp. 59-61, 91, 250, 1880, pp. 290-300.

As to bouquetins in the mountains of Cogne, see, too, Nic. Sererhard, 'Einfalte Delineation aller Gemeinden gemeiner dreyen Pündten vom Jahre 1742' (1872 edition), ii. p. 10; Coxe, ii. p. 39; Van Berchem and Girtanner (both in Höpfner's 'Magazin,' iv. pp. 336, 352, 361, 386); F. von Tschudi, pp. 552-55; King, pp. 89, 295, 338; 'Peaks, Passes, and Glaciers,' 2nd series, ii. p. 263; and L. Purtscheller, in the 'Tourist' (Vienna), No 1, 1888.

Special accounts of the late King of Italy as a hunter are given in the Memoir of the King prefixed to the 'Bollettino' of the Italian Alpine Club, 1878, pp. vii.-xiii.; Amé Gorret, 'Victor Emanuel sur les Alpes' (Turin, 1879); G. Corona, 'Picchi e Burroni' (Turin, 1876), pp. 167-83; Bonney, p. 189; and the 'Mittheilungen' of the German and Austrian Alpine Club, 1878, pp. 27-8.

For the seals of the Grey League and of Chur, see E. Schulthess, 'Die Städte- und Landes-Siegel der Schweiz' (Zürich, 1858), part ii. pp. 17-21.

ALPINE NOTES.

NORWAY—MJÖLNIR BY THE EAST FACE—On July 8, 1893, Mr. W. N. Tribe, with Erik Norahagen, made the second ascent of Mjöltnir. They left Nedre Dale at 6.50. Finding that the Kvandalsbræ offered a tempting route, they ascended it to a considerably higher point than Messrs. Slingsby and Hopkinson had done in their first ascent in 1885 ('Alpine Journal,' vol. xiv. p. 380). A chasm caused by the shrinking of the glacier from the rocks gave some little difficulty, and was succeeded by some interesting climbing on the steep glaciated rocks of the Eastern face. Bearing slightly towards the right, they reached a point just below the arête between the northern and eastern faces, having crossed the route of Messrs. Slingsby and Hopkinson. They then followed a series of open shallow couloirs, always keeping just below the arête, and advanced rapidly to the final rocks. They struck the main arête a few yards only from the summit, which was reached at 1 P.M. After an interval of half an hour they retraced their steps along the arête for a few yards and turned downwards on to the S.W. face. After the negotiation of some smooth steep rocks by the aid of a rope doubled over a projecting point, the head of a steep tongue of snow was reached and a traverse was made in a S.E. direction with a view of passing below the steeper cliffs and striking

the broad snow col at the head of the Kvandalsbræ, but on arriving below the deep gap in the arête which the first party had reached from the other side in their ascent they climbed up to it, and finding the rocks below practicable, they altered their plans, and continued the descent by the E. face. Ere long the morning's route was joined, and after following it for a few hundred feet, a south-easterly traverse saved a considerable descent over steep rocks, and brought them to the Kvandalsbræ, some little distance below the col. From this point the going was easy, and the remainder of the descent was rapidly accomplished.

THE EARLY HISTORY OF THE AIGUILLE DU MIDI.—In the 'Quarterly Review' for April, 1857 (a little before the birth of the Alpine Club) there is a most interesting article entitled 'Pedestrianism in Switzerland,' written by Professor J. D. Forbes (see his 'Life,' pp. 368, 370). In it there occur (p. 319) the following words: 'Why do our aspirants for mountain honours not attempt the almost untrodden snows of Monte Viso and Mont Pelvoux, of the Aletschhorn and Fletschhorn, of the Tödi and Bernina? Even at Chamouni, if they want a difficult feat not on the tariff of the Guides, did they ever try the highest part of the Aiguilles Rouges? Who has mounted the Aiguille du Midi since Mr. Romilly, nearly forty years ago? And is it on record that the summit of the Aiguille Verte—next but one in height to Mont Blanc in that group—has been even attempted?' This outburst is a little rhetorical, as out of the six peaks mentioned in the first sentence only two (the Viso and the Aletschhorn) had certainly not been climbed at the moment these lines were published. But the most interesting remark in the passage is that relating to an ascent of the Aiguille du Midi, about 1818 ('nearly forty years ago') by Mr. Romilly. Is anything known of this ascent, which does not seem to be mentioned by the usual sources of information relating to the Mont Blanc chain? The narrative of such an early climb should be of great interest.

Oddly enough, there does exist an account of the ascent of the second point of the Aiguille du Midi in 1818. Possibly it was really of this expedition that Forbes was thinking. In any case, it seems worth while to reprint the following narrative (probably translated from a French original) from 'Blackwood's Magazine,' November, 1818, pp. 180–1. It is by a young Polish nobleman, Count Matzewski (the name is transliterated in many forms), who went up Mont Blanc on August 4 of the same year, his account of that ascent immediately following on the bit here reprinted, and filling pp. 181–2.

'Letter addressed to Professor Pictet, descriptive of ascents to the summit of the South Needle of Chamouni [*sic*], and to that of Mont Blanc.' By a young Polish gentleman in the beginning of August in the present year.*

* *Note by Professor Pictet.*—The young and modest traveller who has been so kind as to favour us with some details of an enterprise which has been much talked of, has only permitted us to publish them under the condition of their being given without his name. He has likewise had the goodness to

Geneva, August, 1818.

You ask me, Sir, to give you an account of my journey to Chammouni. Animate by the love of your country, and your ardour in the pursuit of all knowledge useful to your species, and sensible that things, apparently unimportant, may sometimes prove interesting, you are naturally anxious to learn what has occurred to me. In order, then, to satisfy you, I must employ my pen in a tongue which is not my own.

In common with all the world, I admired your lofty mountains and your charming valleys; but I was peculiarly delighted with the shores of the Lake of Geneva. From thence I was not disposed calmly to view the glaciers of Chammouni. I experienced a feeling of impatience when the sun had gone down, and I could no longer see them, or when clouds intercepted my view of their summits. At last, on a beautiful July evening, I was so enchanted with the aspect of Mont Blanc, that I resolved to go and inspect it more nearly. I shall say nothing of my journey from Geneva to Chammouni. I saw nothing but Mont Blanc, and I only thought of the pleasure of reaching its summit. At Sallanches, where I passed the first night, I made some attempts to procure information, and what I received was extremely unfavourable to my design; they spoke of difficulties without number, of enormous gaps formed no one knew how; finally that it was impossible to reach Mont Blanc; and they ended by laughing at me when I expressed my desire to ascend it. The day following I was again unlucky; the weather was overcast, and the rain was talked of as something like an honourable get-off from my perilous enterprise. I arrived then at Chammouni with faint hopes of success; but the guides soon dissipated my fears of those terrible crevices. While we were making some excursions upon the glaciers the only subject of their conversation was the South Needle, which nobody had ever ascended. It involved, perhaps, nothing less than the discovery of new districts, or at least new routes. I forgot Mont Blanc to devote my whole attention to this Needle, though the king of mountains had occupied my first thoughts. To reconcile everything, I formed a project still more extensive. It was no less than, after reaching the Needle, to pass over to Mont Blanc, and to return from it by the ordinary road: you will now see how far I succeeded.

I set out for the South Needle with six guides, and after having passed the Montanvert, and crossed the sea of ice, we resolved to sleep at Tacul, where we arrived at about seven o'clock in the evening. You are aware, Sir, that this [p. 181] abode is not very comfortable. It consists of rocks in the middle of ice, close by a small lake, which empties itself during the night. I was pretty cold, the thermometer of Réaumur indicating one degree below zero. I quickly collected a heap of rhododendron, and a good fire soon warmed and enlivened the party. We supped, laughed, and recited and listened to interesting stories of the mountains. Afterwards we lay down around the fire, and a stone, rather less rough than the others, was reserved for me as the place of honour. We were under a great mass of rock, and on the slightest wind the smoke saluted all our faces. The scene was in all respects too new to allow me to enjoy it in tranquillity; I got up, therefore, and perched myself on a stone at some distance. The moon shed her light upon this vast solitude of ice and rocks, but nothing gladdened the eye nor refreshed the mind, and those men, sleeping round the dying embers of the fire, appeared to have arrived in the land of death to undergo the inevitable destiny which the avalanches foreboded. The cold at last drove me from my observatory; my guides awoke, stirred up the fire, and we prated away the rest of the night. At four o'clock in the morning we prepared to set off; the barometer, which in the evening was 22·2, had fallen a little in the

superintend the execution, by an able artist, of a most exact *relievo* of Mont Blanc and the South Needle, which we will carefully preserve.—PICTET.

Note by the Editor of 'Blackwood.'—We have again to thank our friend, Professor Pictet, for this interesting letter, which he has kindly forwarded to us.

morning, and the thermometer was four degrees below zero of Réaumur. We took the precaution to bind ourselves to each other with ropes, and set off. We first skirted the shores of the lake, which had now disappeared, for we now only saw the siones which formed its bed; and after having crossed the gaps we met with in the way to the Col de Géant we arrived at a plain of snow. Here we held a council on the route we should follow, as three glaciers presented themselves, each of which would lead us to the South Needle. The first, on our right, appeared too steep and full of gaps; we, therefore, took the second, the slope of which was pretty moderate, and I soon began to dream of the fine valleys we were about to discover; but we found nothing but precipices, and it was not without much pain, attended with some danger, that we at last got a sight of the South Needle, the summit of which we were not able to reach till four o'clock. On the side of Chammoni it presents two rocks, separated by a ridge covered with snow. We reached the least elevated of these, and even the ridge; the other rock, which is inaccessible, is prolonged by many perpendicular peaks. We soon discovered that we must not think of approaching Mont Blanc by this route. The view from the rock on which we stood was very extensive, and we could discern a great part of Lombardy over the Col de Géant. Italy, thus seen across the glaciers, recalled those Elysian fields which the ancients had a glimpse of beyond the tomb. As we were able to advance without danger to the edge of the rock on the West side, we beheld the priory of Chammoni, but a cloud hid from us part of the valley. An accident having befallen the barometer, we could make no observations, and now thought only of returning. It was now late, yet it was absolutely necessary to reach our habitation at Tacul; for we were wet and fatigued, and not sufficiently clothed to pass the night on the snow. In descending, we avoided the difficult parts which had cost us so much trouble, and we went in another direction. Skirting the glacier near the Needles, which separate us from Mont Blanc, at ten o'clock in the evening we at last reached our favourite rocks; I bid good-bye to reflections and observations, and slept very comfortably on my stone. In the morning we arrived all well at Chammoni.

NEW ZEALAND: ASCENT OF MOUNT DE LA BÊCHE.—The following extracts from the 'Timaru Herald,' referring to some recent expeditions in the Alps of New Zealand, appeared in the 'Christchurch Press' of Monday, April 2:—

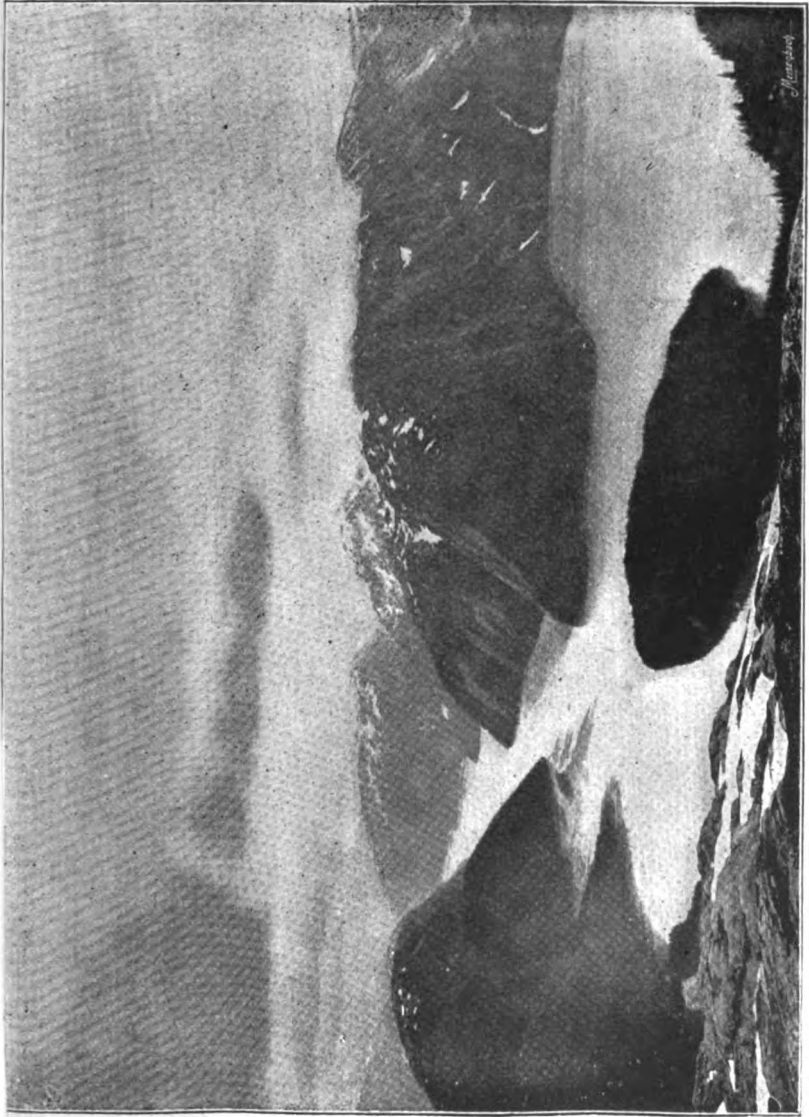
The most important of Mr. Fyfe's achievements, from a practical point of view, was his exploration, in company with Mr. J. Graham, of a reasonably good pass to the West Coast side of the main range. Previous expeditions had suggested the direction in which this should be sought for, and the two men made for Barron's Pass, at the head of the Mueller glacier. Barron's Pass leads over into the Hopkins river, which flows into Lake Ohau, and therefore is not a saddle in the main range. They climbed Mount Montgomerie, near that pass, for reconnoitering purposes, and then descended to the McKerrow glacier, whence rises a West Coast river, the Landsborough. They camped two miles below the terminal of the McKerrow glacier, and tried to descend the river, but it runs in a deep gorge with very rough bottom, and five miles down and back made a hard day's work. Travelling then up the glacier, they reached a saddle leading into the head of the Douglas, a tributary of the Karangarua, a West Coast river, which reaches the sea a little south of Gillespie's Beach, and descending on that side reached vegetation—snow grass and stunted scrub—on country traversable by a track. Mr. Douglas, Government Surveyor, had been

from the West Coast side to the foot of the saddle they descended. From the camp two miles below the McKerrow glacier to the foot of the Douglas saddle, Mr. Fyfe estimated at about six miles, and as a horse track could be cut up the east side of the Mueller glacier, a short day's walk would land one in the Douglas Valley. The outing occupied nine days. In the course of it they had 'a shot at' Mount Sealey, but failed to scale it. This is only a small peak of 8,630 ft., but it is of very rotten rock—'a terror to climb.'

The next effort of the two men was an attack on Mount De la Bêche, 10,022 ft., this being the tenth attempt by different parties, and the first successful one. It is a beautiful peak, and has been tried by more climbers than any other. They bivouacked at 4,782 ft., at the junction of the Tasman and Kron Prinz Rudolf glaciers. After travelling up the Rudolf to near its head, they turned to the mountain, which now presented a bare rock surface. On all Mr. Fyfe's previous visits this face had been covered with snow. Rocks were traversed to about 7,000 ft., when the rock became so loose that the climbers took to the snow again, which at the head of the Rudolf was in grand condition, and thus they reached the level of the Francis Josef, which flows westward. After a lot of zig-zagging to avoid 'bergschrunds,' they reached the saddle between two peaks of De la Bêche (9,000 ft.). A sheer rock face presented itself on the west side. The ascent of the final peak was impracticable from the saddle, owing to the shattered condition of the rock and precipices, so they returned to the ice plateau and made straight for the peak. The only difficulty that seemed to be in the way was a large bergschrund that ran right across the peak, but they found a bridge across this. When they got above the ice they found the rock work difficult, but not dangerous, the rock being sound, the strata dipping into the mountain. At 10.20 a.m., five and a half hours from the bivouac, they stood on the summit—quick work. The West Coast side was clouded over, but a fine view was had to the east and north. The descent was easily made, and the bivouac reached after an absence of only 10½ hrs.

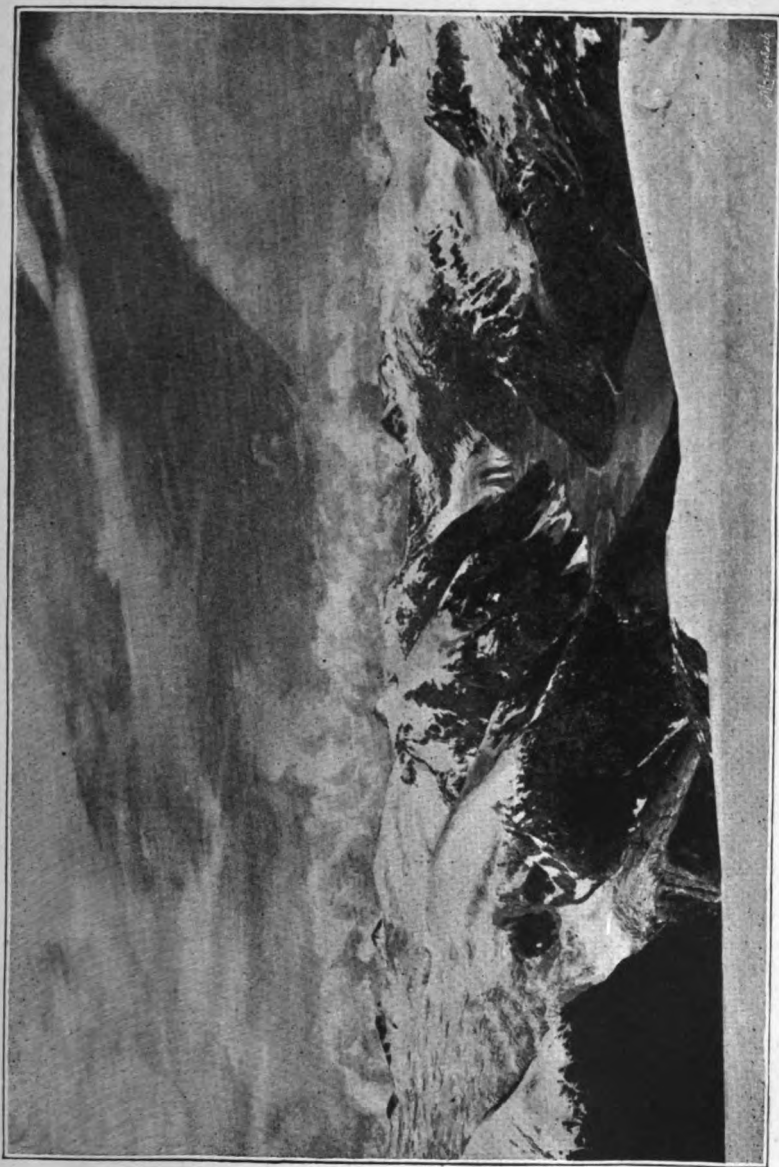
Mr. Fyfe then took a few days' rest at the Hermitage, and next tackled Malte Brun alone. This is the fourth in height, 10,421 ft., a fine rock peak, 'the Matterhorn of New Zealand.' He found the climbing difficult, but was never stopped, and was back at the De la Bêche bivouac in 11½ hrs. from the start.

His next climb was with Mr. and Mrs. Maxwell, of Hobart, and Dr. Kronecker, of Berlin, assisted by J. Clarke and J. Adamson, up the Hochstetter Dome. Starting at 5.15 a.m. from the foot of De la Bêche, no difficulty was met with until they reached the saddle immediately below the final peak, and here they found two rather formidable bergschrunds. A frail-looking snow bridge carried the party over the first. The second had a drop of 30 ft. to 40 ft. After some search a not very safe bridge was discovered, with a chance of cutting steps up the steep face on the further side. This was a nasty bit of work, especially for a lady, as the ice cliff was very steep, but Mrs. Maxwell showed excellent courage and made no objection to facing it. It took fully an hour to get up that 30 or 40 ft. of ice cliff. Adamson, being



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lame, stayed behind. This landed the party on the saddle, and the rest was easy, with 150 ft. of step-cutting at the top. A bitterly cold wind was blowing over the summit. The West Coast side was hidden by clouds with a surface like a sea, out of which the higher peaks stood up like islands with beautiful effects. The east side was cloudless, and a fine view was had in this direction. A camera had been carried up and some views were taken. The descent of the bergschrund which had given so much trouble in mounting was safely managed, Mr. Fyfe taking the post of danger and honour, as last man. The lower bergschrund was crossed safely on the snow bridge, whose frailty was shown by one of the party putting a foot through it. The descent was then easy, and camp was reached at 9.30 P.M.

Glacier Peak, 10,017 ft., a fine pure ice peak behind Mount Haidinger, was next attempted by Messrs. Kronecker, Fyfe, and Clarke. They reached 8,500 ft., and were then held back by a network of bergschrunds, and the attempt was a failure.

The next day the party crossed to the Malte Brun range in readiness for a first attempt on Mount Darwin (9,715 ft.). Starting at 2 A.M. in brilliant moonlight they reached the top at 1 P.M., and had a grand view northward, and could just distinguish the western coast. A cairn was built on the summit, and names left in a bottle. An easy descent was made, Mr. Fyfe seeing a better route, and noting its detail from top to bottom before starting. The Tasman was reached at dark, and after waiting till the moon rose they were back in camp in 20 hrs. The party were hungry when they got to the bivouac, as they had eaten their last scrap—a small one—at 3 P.M. on the mountain, and had to turn in supperless. Mr. Fyfe, however, was too hungry to stay, and set off at once for the Hermitage, and stopping for three hours' sleep at the Ball Hut, reached the hotel early in the morning, with a full-grown capacity for breakfast. The others would get a breakfast nearer by crossing the Tasman to the De la Bêche stores.

VIEWS IN ALASKA.—The reproductions of photographs of views of the Speel River published in our last number are the first-fruits of the request of the Committee of the Club for views and notes illustrating the action and movements of glaciers in different parts of the globe. A small collection of photographs, of which the views reproduced form part, has been forwarded by the Survey Department at Ottawa to the Club. It is hoped that a paper from one of the surveyors describing the locality may be contributed to a subsequent number. Speel River empties into Port Snettisham, Stephens' Passage, on the coast of Alaska. It is in latitude 58° N.

MR. CONWAY'S MAP OF THE KARAKORAM HIMALAYA.—The map constructed by Mr. Conway from his own survey of the glaciers traversed by him during his recent journey in the Karakoram can be obtained at 1 Savile Row, W. It is in two sheets, and executed in chromolithography. The price to the public is 5s., to Fellows of the Royal Geographical Society, 2s. 6d.

CAUCASIAN MAP.—A map of the glaciers of Suanetia, to illustrate Mr. Solly's and Mr. Mummery's papers, will be issued with the November number of the Journal.

A CAUCASIAN 'PEAKS, PASSES, AND GLACIERS.'—Mr. D. Freshfield and Signor V. Sella have in contemplation a work on the Caucasus of a more popular and attractive character than a guidebook. They hope to be able to arrange for the production of a number of the most characteristic of Signor Sella's and other Caucasian photographs as illustrations to a text which, besides an account of Mr. Freshfield's journeys in 1887 and 1889, should contain a summary of recent exploration and narratives of several of the more important ascents.

WINTER PICTURE EXHIBITION.—The President announced at the General Meeting of the Club on June 7 that the Winter Picture Exhibition would be held this year in the Nineteenth Century Art Gallery, Conduit Street, and be open for about a fortnight instead of two days, as hitherto.

The date of opening to the public will probably be December 12, and it is proposed to hold the winter meeting of the Club on December 17 in the Gallery.

The Committee desire that the first exhibition held under the new system should, as far as space allows, be representative not only of the year's work in mountain art and photography, but also of the best work of the artists connected with the Club since its formation. They would also gladly receive specimens of mountain or hill paintings of an earlier date, and also Alpine prints.

Members and others who may be willing to make contributions, falling under any of these heads, are requested to communicate with the Hon. Secretary at the Alpine Club Rooms.

In the course of the autumn there will be sent to all members another notice, together with a form to fill up, with details of the subject, size, and number of the works they propose to exhibit. The Committee reserve to themselves the right of selection and arrangement.

Arrangements will, as usual, be made for collecting and returning all exhibits from and to any address in London; insurance will also be effected if the value be specified. A descriptive catalogue will be prepared, and for this purpose the works will be required to be delivered about December 4.

DISTRESS SIGNALLING.—The report of the Sub-Committee on Distress Signals is published with the present number. Communications have been addressed to the foreign Alpine Clubs, and favourable answers received. It is expected that the subject will be fully discussed at the general meeting of the Deutsch-Oesterr. Alpen-Verein to be held at Munich this month, when representatives of several foreign Alpine Clubs will be present, and it is hoped that the Club will be represented by a member of the Sub-Committee. This will be the best means of arriving at a speedy and general agreement on the question.

REVIEWS AND NOTICES.

Jahrbuch des Schweizer Alpenclub, vol. xxviii.

THIS volume (xxviii. 1892-3) is the third on the enlarged scale, and is quite equal as regards matter and illustration to its predecessor. No doubt by degrees the interest attaching to exciting mountain ascents diminishes, whilst that attaching to history and science increases. The editor, Dr. Dübi, in the preface complains of the dilatoriness of many sections in sending their communications. He still has to depend for material upon a small number of old and tried friends in the Swiss Alpine Club, and in this volume he has been aided by a valuable contribution from a member of the Alpine Club. Hardly any of the new ascents were communicated to him directly, and he has had mostly to collect them himself from various Alpine publications. No doubt it is natural that expeditions should be inserted in publications appearing more frequently than once a year. The labour of editorship is greater, he says, than anyone would suppose. He might, however, diminish it by asking some of his friends to review some of the many books (about twenty) which he has reviewed himself.

The following new expeditions are not already recorded in the 'Alpine Journal.' These were all made in 1892, unless specially mentioned. On July 2 Herr F. Werner, with the guides Fankhauser and Cognez, from the Pavillon de Lognan, attempted the second peak (3,626 m. = 11,896 ft.) of the Aiguilles Rouges du Dolent. After 9 hours' labour they found the last 40 mètres impracticable. On August 30 Mr. V. Fynn and Dr. Murphy from the Cabane d'Orny ascended the second peak (3,540 m. = 11,614 ft.) of the Aiguille de la Varappe. MM. Attinger, Colomb, and Kurz, with the guide Fr. Biselx, from a bivouac on the right bank of the Saleinaz Glacier, ascended, on July 10, the Pointe de Planereuse (3,156 m. = 10,355 ft.); on July 11 the Grand Clocher de Planereuse (2,900 m. = 9,515 ft.); on July 12 the Col de la Petite Fourche (3,400 m. = 11,155 ft.), and the Petite Fourche (3,531 m. = 11,585 ft.) by the N.E. ridge; and on July 13 the Petite Pointe de Planereuse. On August 8 M. Jules Janin, with the guides Delez and Revaz, from the chalets of Salanfe ascended the Eperon (Dent du Midi) (3,116 m. = 10,223 ft.). On August 4 M. R. de Breugel Douglas, with Delez and Revaz, from Salanfe ascended the highest point between Champéry and the Glacier du Plan Nivé (3,212 m. = 10,538 ft.), which they named Dent Noire de Champéry. The same on September 20 from the chalets of Chalin ascended the Cime de l'Est (Dent du Midi) (3,180 m. = 10,434 ft.) from the N.E. On August 15 Signor G. Mondini, with the guide L. Bich, of Val Tournanche, starting from the Lusenedy Alp, ascended the Becca di Lusenedy (3,506 m. = 11,503 ft.) by the N.E. face. On August 28 the same from Nuz ascended the Punta dei Terrai (3,400 m. = 11,155 ft.). On August 22 Signor Evan Mackenzie, with Dan. and Ant. Maquignaz, leaving Prerayen at 4.30 A.M., reached the Punta Margherita (3,877 m. = 12,720 ft.) at 2.15 P.M. The foot of the rocks was only

reached on the descent at 7.30 P.M., and they had to bivouac on the glacier. On August 24 the same from Prerayen ascended the Torre di Créton (3,583 m. = 11,757 ft.). On September 12 the same from the inn at Breuil ascended the Colle dei Cors (3,800 m. = 12,467 ft.). In August 1892, MM. H. Rieckel and L. Kurz, with Justin and Jos. Bessart, of Chables, ascended the Bec Epicouin (3,527 m. = 11,572 ft.) from the W. side. Here they found the card of the veteran mountaineer J. J. Weilenmann, dated July 21, 1866, and went on thence to the Monte Cervo (3,430 m. = 11,254 ft.) of the Italian map. On August 16 Signor Carlo Cressini, with the guides Franz Jarba and V. Roggia, starting from the Veglia Alp, ascended the Monte Leone (3,561 m. = 11,684 ft.) by the N.E., and then by the S.E. face. On August 22 the same ascended the Pizzo di Terra Rossa (Wasenhorn) (3,255 m. = 10,680 ft.). On July 19 Signori Gerla, Prina, Cressini, and Conterio, with the guides Marani, of Antronapiana, and Roggia, of Varzo, ascended from the Veglia Alp to the Bocca Mottiscia (2,921 m. = 9,584 ft.), thought to be impracticable, and thence by way of the Mottiscia Glacier reached the Punta Mottiscia. On July 27 the same, without Prina and Roggia, ascended the Punta di Val Grande (2,856 m. = 9,370 ft.). This hillock had before only been ascended from Berisal, on the Simplon road. The Rev. W. A. B. Coolidge, with Ch. Almer, jun., made the following first ascents in the Leone district: July 8, the Punta Mottiscia; July 10, Gross Schienhorn (2,942 m. = 9,653 ft.); July 11, GÜschihorn (3,084 m. = 10,119 ft.); July 16, Albrunhorn (2,880 m. = 9,450 ft.); July 19, Ober Turbenhorn (3,121 m. = 10,239 ft.); July 23, Neufelgiuhörner (2,946 m. = 9,666 ft.). On August 10 MM. H. Rieckel and L. Kurz, with the guides Chr. Lauener and Fritz Graf, jun., from the Ober Aletsch hut ascended the Geishorn by the W. face and N. ridge. On August 8 Herr A. Gassmann, with the guide H. von Allmen, made the first ascent (by tourists) of the Tschingelspitz (3,318 m. = 10,886 ft.). On July 3 Herr René König, Fräulein Sarah König, and Herr C. Montandon from the Pavillon Dollfus made the first ascent of the Brandlamhorn (3,115 m. = 10,220 ft.). On August 8 Mr. V. A. Fynn and Dr. Murphy from the Pavillon Dollfus ascended the Thierberg (3,202 m. = 10,505 ft.).* On July 26 Pfarrer H. Baumgartner, Herren A. Baumgartner, and E. v. Rütte, with the guides P. Baumann (father and son), from the Pavillon Dollfus ascended the N. peak of the Bächlistock (3,270 m. = 10,728 ft.). On September 27, 1888, the Pfarrer had ascended the S. peak (which is 4 m.—13 ft.—higher) in a dense fog. The volume contains a photograph from the Brandlamhorn. In this the two peaks of the Hühnerstock—the Vordere, ascended by Messrs. Coolidge and Gardiner in 1886; and the Hintere, by Pfarrer Baumgartner in 1889—are visible, but it is not stated which is the higher. On August 5 Dr. W. Gröbli, with the guide J. Gamma, from the Kühplanken hut, in the

* [This ascent had, however, been made as far back as 1842 by MM. Desor, Escher, and Sulger. See M. Desor's *Excursions*, 1st series, pp. 525 sqq.—EDITOR A. J.]

Voralpthal, ascended the Hinter Sustenhorn (3,220 m. = 10,564 ft.). On May 22 MM. A. Bois de Chesne and V. A. Fynn made a traverse of the Ruchen (Mürtschenstock) (2,442 m. = 8,012 ft.). On July 25 the Rev. W. A. B. Coolidge, with Ch. Almer, jun., ascended the Wyttenswasserstock (3,084 m. = 10,119 ft.). On August 3 the same, with Mr. F. Gardiner, ascended the Pizzo Columbe (2,549 m. = 8,363 ft.).

A number of ascents made in the Adula group by Herr L. Darmstädter, with Joh. and Georg Stabeler, of Taufers, and also a number made in the Albula district by Mr. Oscar Schuster, with the guide J. Engi, of Davos, deserve the attention of those making a special study of those regions. On August 8 Herr A. Rzewuski, Dr. and Frau Tauscher, with the guides C. Jann and P. Allemann, of Klosters, ascended the Verstanklahorn by a new route from the Tiatscha Glacier. On July 8 a new descent was made from the Fergenkegel, and on July 9 the passage from the Gross Litzner to the Seehorn achieved, both by Mr. Oscar Schuster, with J. Engi, of Davos. On July 26 the same gentleman made the descent from the Drusenfluh (2,828 m. = 9,278 ft.) to the Schweizerthor. On August 12 the ascent of the Drusenfluh from the S. was effected by Herr D. Stokar, with the guide Michel; and on July 3 the first ascent of the Hornspitz (2,540 m. = 8,333 ft.), W. of the Scesa Plana, from the Swiss side, was made by Herr E. Imhof, with the guide Martin E. Sprecher. On August 13 the first ascent of the Grosser Thurm (Drusenfluh) was made by Herren A. Ludwig and L. Jeklin.

On the special district (the Rhätikon), whose period of three years ended in 1892, we have several papers, which pretty well exhaust it. Dr. Stokar was chiefly anxious to make the ascent of the Drusenfluh (mentioned above) from the south side. This was effected by the 'Rote Gang,' a limestone fault of a peculiar colour to the east of the Schweizerthor, up which chamois had been observed to pass. Herr E. Imhof (Scesa Plana) has already spent much time in the district, and would have done more had he not been called away to prepare the excellent Itinerary for the new district (Albula), in which he made as many as thirty ascents in the remainder of his holiday. Herr U. Obrecht (Scesa Plana) writes on the woods and wood trade of the Prättigau. This is specially a valley of woods. Many of the trees reach to 4 ft. in diameter, and in the winter of 1866-7 a tree was cut and transported to Glarus which measured 8 ft. in diameter, and was the largest ever cut in Graubünden. Special tracks have to be made to the woods that are cut. In one parish in 1892-3 a very large number of bridges were constructed across ravines. The work requires special training, and many workmen are imported annually from Italy, more than 100 coming from the village of Sondalo (Valtelline). Herr W. Zwicky (Scesa Plana) contributes an interesting article on the towers and castles of the Rhätikon, compiled from many excellent authorities. The castle of Maienfeld is said to date from 340 A.D., but this date must be considered very doubtful. The oldest castle which is still inhabited, and which is, perhaps, the most interesting in the district, is Schloss Marschlins, a little to the S. of Malans. This is

said to have been occupied in 1154 A.D. by Frederick Barbarossa when on his way to the campaign against Milan. It passed into the hands of the Salis family in 1633, and in 1770 became the seat of Planta's philanthropic school. Near this castle were planted the first maize and potatoes in Graubünden in 1717. The servants would not eat them. In 1787 tobacco was grown here, and silk of excellent quality was manufactured, but the late spring frosts too often destroyed the mulberry leaves. The natives too were unwilling to look properly after the worms, especially in unwinding the cocoons, and the cost of introducing Italian workmen was too great. In this castle originated the first map of any part of Graubünden based on trigonometrical measurements, the little map of the Rheinthal, between Chur and Luziensteig, made by Magister Rösch. The castle is now the property of Fräulein Meta von Salis-Marschlins, well known as one of the foremost champions of woman's rights.

Amongst the expeditions out of the special district (*freie Fahrten*) the Rev. W. A. B. Coolidge contributes a number in the district between Binn and Airolo, several of them new ascents already mentioned above. He was able to make various notes for the next edition of the Guide Book to the Lepontine Alps, and was successful in making good his claim to the first ascent of the Pizzo di Pesciora by finding on the adjacent Kühbodenhorn the cards of the two former supposed climbers of the Pizzo di Pesciora. Dr. W. Gröbli (Uto) gives an account of a number of ascents in the month of October in the years 1888-92, with the guide A. Pollinger, in the neighbourhood of St. Niklaus. These seem to have been thoroughly enjoyable, but require the exercise of more caution than in summer—*e.g.* on the Aeussere Stellhorn, where a surprised poacher nearly brought the expedition to an untimely end. He insists that the first ascent of the Innere Stellhorn (3,415 m.) was not made by Messrs. Coolidge and Conway on August 23, 1890, but by Mr. Stafford Anderson, with the guide Pollinger, on August 5, 1882,* and that the first ascent of the Barrhorn was made by Mrs. Jackson, with Pollinger, in 1883, and not by himself.

Herr Emil Huber (Uto) gives an account of a number of winter ascents in the Alps of Canton Schwyz. These involve a considerable element of danger when the ascent is over steep frozen grass slopes covered with powdery snow. The ascent of the Brünnelstock (2,150 m. = 7,154 ft.), E. of the Hintere Wiggithal, from the Sulzboden Alp, on its E. side, is remarkable. He states the vertical distance to be 1,090 m. (3,576 ft.), and the horizontal 1,350 m. (4,430 ft.), giving an angle of no less than 81° (!), and the ascent seems to have been tolerably direct. It must have been like going up a staircase with very high and very narrow steps; worse than going up a ladder, for there the feet can be put over the rungs. The winter ascents are, as he remarks, generally very enjoyable, from the steadiness of the weather, the clearness of the atmosphere, and the absence of excessive heat.

* [See, however, Dr. Gröbli's later view, above, p. 63.]

Herr A. von Rydzewski (Davos) contributes a second paper on his ascents in Bergell, with the guides C. Klucker and M. Barbaria. Amongst these are the first ascent of the Punta Pioda di Sciora and that of the Cima di Sciora by a new route.

Herr Th. Borel (St. Gall), in a paper on the Grödnerthal, gives some interesting particulars about the valley and its inhabitants.

On August 11, 1888, along with Professor Kellerbauer, of Chemnitz, he made an attempt (without guides) on the Langkofel from the south side. The 'alps' in this neighbourhood are not used during the summer, as in Switzerland or many other parts of Tyrol, and it was only after much searching they got a night's lodging in a hut on the ridge between the Grohmannspitz and Col Rodella, which divides the Sella Alp into two parts. The mountain on this side looks forbidding, not to say impossible. Next day, after a difficult climb of $7\frac{1}{2}$ hrs., they only reached an inferior summit separated by a deep chasm from the top. The ridge here was so sharp that they held on by their hands on opposite sides, and each could only see the tips of the other's fingers. They attempted a new line of descent, and at one point were nearly stuck fast, not being able for nearly 2 hrs. to make further progress, and at last were only able to extricate themselves by a dangerous leap across a chasm. On August 16, 1888, with the guides G. and L. Bernard, he ascended the Grohmannspitz, and on August 20 the Langkofel, the latter of which, under the circumstances, he still considers the most difficult of the group.

Of miscellaneous articles there are two dealing with the Alps generally. Herr Frisch-Lochmann (Uto) tries to answer the question, 'Why do we visit the mountains?' To this the answer may well vary with the temperament of the tourist, but it certainly will be some form of advantage or enjoyment. The guides, who have the most labour, and who earn by it their daily bread, have often a satisfaction in overcoming difficulties far beyond that of their mere pay. What money payment, indeed, could reward the care and devotion they show to their employers, sometimes even to death? He quotes with admiration Mr. Whymper's opinion of M. Croz and Christ. Almer; and to these a long list of guides might be added who have climbed or are climbing for love of the mountains as well as for reward. Herr S. Simon (Oberland) describes the peculiar character impressed upon mountain peaks by their geological formation, taking for examples the primitive rocks, limestone, and nagelfluh; with numerous illustrations. Herr A. Wäber (Bern), the former editor, discusses the mountain nomenclature of the Bernese Oberland before the present century. It seems hardly credible that before the middle of the eighteenth century the principal mountain peaks of the Bernese Oberland were either without names or were named quite uncertainly. In the oldest Swiss map (Conrad Türist, 1495-7) only two passes, the Grimsel and the Gemmi, are named, and no peaks. In the course of the next century a few passes and mountains are added; but no very great advance was made until the publication of Scheuchzer's map (1712) and the measurement of the boundaries of Canton Bern by Sam. Bodmer (1701-10). Again nearly 50 years elapsed without further advance. Then came Micheli

du Crest's 'Panorama from the Castle of Aarburg' (1755), and the 'Eisgebirge des Schweizerlandes' (1760) of Gottlieb Sigmund Gruner (b. 1717, d. 1778), and the first guide book (1777) to the Bernese Oberland by Sam. Wytenbach (b. 1748). In 1779 Archdeacon William Coxe's 'Travels in Switzerland' made considerable additions. But the greatest advance was made by Gottlieb Sigmund Studer (1761-1808). He drew a great number of panoramas and views, varying from mere outlines to finished drawings. In these the summits are often named, and here we find that his difficulties from conflicting authorities were great. Names are often crossed out and others supplied, sometimes as many as three names given. There was special confusion about the Jungfrau group. Between 1755 and 1790 the Eiger had four different names, the Mönch seven, and the Jungfrau four. The article is illustrated by one of Studer's drawings (1788) reproduced in colour, a view from Thierachern, on the Lake of Thun, extending from the Ralligstock to the Niesen. But the reproduction is said not to convey the delicate charm of the original, which is still fresh in colour though more than 100 years old. G. S. Studer died in 1808, and the work at which he had so zealously laboured was carried on by his son Gottlieb, who inherited from him the spirit which urged him ever to visit the wild beautiful mountains.

Herr R. Reber (Bern) writes on earth curvature and refraction, and on the conditions under which a mountain may be visible or invisible from a fixed point.

Professor Forel contributes another report (No. xiii.) on the periodic variations of glaciers. The present article deals largely with the catastrophe which destroyed the Baths of St. Gervais in July 1892, and that of Täsch, August 15-17, 1892. In the Mont Blanc chain all the glaciers are advancing, in the Valais Alps most, in the Bernese Alps some, whilst in Central and E. Switzerland they are stationary or retreating. Amongst shorter articles are an ascent of the Morgenhorn (Blümlis Alp), by Herr K. Knecht and the brothers C. and P. Montandon; one of the Kammlistock (Clariden), by Herr Heinrich Streiff (Tödi); an account of the Schächenthaler Windgällen, by Herr E. Huber, who thinks they are unfairly neglected for their more pretentious neighbours over the way; and another of an excursion from Airolo, through the Val Canaria, over the Piz Ravetsch, to the Oberalp Pass and Göschenen, by J. Eggermann and friends. Dr. A. Baltzer relates the explorations of an ice cave, or rather ice crack, near Meiringen. This was a rather difficult expedition, and much must be done before it is accessible to ordinary tourists. It is much more easily got at than the Schafloch, which is, however, a far finer cavern. The same author describes an ascent of Djebel Resas (? 1,400 m. = 4,593 ft.), a principal peak in the Tunisian mountains. The Rev. W. A. B. Coolidge gives a list of the excursions of Herr Gottlieb Studer in the Tarentaise, amongst which are the first ascents of the Punta Violetta (3,031 m. = 9,945 ft.), of the Pointe de la Réchasse (3,223 m. = 10,574 ft.), and of the Ruitor (3,486 m. = 11,437 ft.). Dr. E. Bosshard (Rhätikon) describes the use of the thermometer for measuring heights, and claims that when properly understood it pro-

duces more accurate results than the aneroid barometer. Dr. A. Bähler (Biel) describes the silver lead mine at Goppistein (Lötschthal), so rich that it produced more than 18 oz. (av.) of silver to the ton; it has failed, owing to mismanagement and extravagance; also, probably, to the difficulties of transport, which have wrecked many promising mines. The reviews occupy no less than 23 pages, and must be a great addition to the editor's labours.

Herr Francke (Bern) contributes a catalogue of the Alpine literature of the year 1892.

The map of the new special district (the Albula Alps) is not yet issued to the club. At the General Assembly held at Olten, September 26, 1892, the principal question was that of a new periodical for the S.A.C. which should connect more easily and closely members and sections. This was commenced in July 1893, under the name 'Alpina,' and is to be continued monthly.

The huts are still a source of trouble, and there is a great deal of abuse of them, owing to inefficient supervision. Persons are said to have used them as lodgings for weeks as a kind of 'Sommerfrisch.'

Of the chronicles sent in by the sections there is not much to be said, except that it hardly seems worth while to send in such ascents as the Gornergrat. Section St. Gall is conspicuous for the great number of ascents. It reckons amongst its members the well-known climbers Herr L. Purtscheller, Professor K. Schulz, and Herr Robert Hans Schmitt. The former of these, in 1892, made 63 ascents.

On December 31, 1892, the club numbered 3,855 members, and had a balance to its credit of 38,326 frs. (1,533*l.*) J. S.

Climbing and Exploration in the Karakoram-Himalayas. By William Martin Conway, M.A., F.S.A., &c. (London: T. Fisher Unwin. 1894.)

'We spent, in all, eighty-four days on snow or glacier; we traversed, from end to end, the three longest known glaciers in the world outside the polar regions, and we climbed to the top of a peak approximately 23,000 ft. high.' This extract from Mr. Conway's preface sums up, from the mountaineer's point of view, the results of his sojourn in the Karakoram-Himalayas from the middle of April to the same part of September, 1892. He spent a fortnight on his journey into the hill country from Abbotabad, and remained about a month longer in the mountain region, visiting Leh, and returning to Srinagar (from which he had started) by the Dras valley and Zoji-la Pass. In the Alps the last would be reckoned as an excursion, for it is 10,300 ft. above the sea; but it is a way for man and beast in the more gigantic Himalayas. These lie, as in reading of them we are constantly reminded, some ten degrees nearer to the Equator than the Alps. If, then, we would compare the former with the latter, we must begin by deducting some 7,000 ft. from the altitudes. We read of oppressive heat at 7,000 or 8,000 ft., of camps pitched, as a matter of course, 5,000 or 6,000 ft. higher. The snout of one of the larger glaciers may be found somewhere about 11,000 ft. above sea-level. A track, free from snow in summer, may cross the mountains at 14,000 ft., while the peaks and

passes* at from 17,000 to 18,000 ft. appear to find their Alpine equivalents on either side of the 11,000 ft. contour-line in that chain. The portion of Mr. Conway's book which appeals especially to the frequenter of peaks and glaciers may be arranged under three heads: Expeditions into the range between Rakipushi (25,550 ft.) and Emerald Peak (22,390 ft.); the passage of the Hispar and Biafo glaciers; and the exploration of the Baltoro Glacier, with an ascent of a peak of the Golden Throne *massif*. The approach, however, to his field of work involved the crossing of a pass (the Burzil) higher than the Grandes Jorasses. This, under ordinary circumstances, would have been no more than a journey over the Col du Bonhomme some half-century since, but towards the end of April, and in bad weather, it became a very long and weary trudge, which was not accomplished till the party had waited in camp for two or three days among the fresh-fallen snow in the upper part of the Burzil valley.

Mr. Conway's party consisted of the Hon. C. G. Bruce, Messrs. Eckenstein and Roudebush, Mr. McCormick, the artist, Matthias Zurbruggen, of Macugnana, as guide, three or four Gurkhas, and some native servants, with coolies hired, as required, for porters. It was reduced in numbers from time to time by the illness of some of its members, and occasionally was divided for hunting or for exploration. The commissariat difficulties were serious, because the journey lay through regions as inhospitable as the upper valleys of Dauphiné in days before the French Alpine Club had come into existence, and everything had to be carried for long distances, often even imported into the country. Thus a large camp-following was necessary, and the commissariat and transport service must have required no little forethought and capacity for organisation, and must have added immensely to the anxiety and labour. Fortunately, though not without danger from both accident and disease, the journey was accomplished without harm to limb or loss of life.

The Himalayan season, evidently, is no longer than the Alpine, for when the travellers arrived, early in May, at Gilgit (4,890 ft.), in the centre of magnificent scenery, they found they were too early, and the higher mountains would not be fit for serious work for at least a month, perhaps even more. They determined, however, to begin by exploring the valleys which descend from the southern side of the range which is ended by the magnificent peak of Rakipushi, in the faint hope of effecting a direct passage to Nagyr over the head of the Bagrot Glacier, and thus avoiding the long detour by the main valley. They succeeded in exploring not only this, but also the Gargo Glacier, a grand mass of ice, which descends from the flank of Emerald Peak. Among other interesting excursions, they climbed a rocky needle, 17,580 ft. in height, in the neighbourhood of Rakipushi, and they camped out at a height of 15,680 ft. below a pass on the west side of the Emerald Peak, which, however, the obstinately bad weather compelled them to abandon, while any attempt on the other one was pre-

* Occasional passes, traversed by man and beast, exist, as is well known, in some districts at rather greater elevations.

vented by the condition of the snow. Thus they had to be contented with the exploration of a magnificent mountain region, the lower part of which, owing to its rich vegetation, is far more beautiful than the ordinary valleys of the Karakoram-Himalayas.

The northern side of the range was examined in the course of two expeditions from Nagyr. They explored the Samatyar Valley, and succeeded, after camping out at an elevation of over 15,000 ft., in climbing to a gap, which Mr. Conway names Daranshi Saddle, 17,940 ft.; but here again they were driven away by hopelessly bad weather. Next the fine Barpu Glacier, descending from the northern side of Emerald Peak, invited their attention. They explored it, and succeeded, after the usual opposition from the implacable weather, in climbing an aiguille (the Daskaram Needle) 17,660 ft. high.

Next they had to prepare for the most serious part of their undertaking, the journey from Nagyr to Askole, by the Hispar and Biafo glaciers; or, in other words, for crossing the enormous spur from the southern side of the Karakorams, which overlooks one of the upper portions of the Indus Valley, and terminates in Rakipushi—a spur which stands in somewhat the same relation to the main chain as the Graians do to the Pennines. But a separation of the party became necessary in consequence of commissariat difficulties: one section, in two divisions, took the more direct route to Shigar (below Askole) over the Nushik-la Pass—which apparently had not been previously crossed by Europeans, though the summit had been reached from the south in 1861 by Lieutenant-Colonel Godwin-Austen; while Mr. Conway, with Mr. McCormick and Zurbriggen (who, however, diverged to conduct the second detachment to a camping-place on the south side of the Nushik-la) proceeded up the Hispar Glacier. Starting from the foot of this huge ice-stream—40 miles in length—on July 12, they crossed the pass (17,650 ft.) on July 18, and arrived at the end of the Biafo Glacier, after some halts by the way, on July 26. We have not space to enter into the interesting details of this long journey over ice and rocky slopes, for the whole time at an elevation above that of the Théodule Pass, and in the very heart of the most magnificent mountain scenery; but must be content to refer to Mr. Conway's narrative, and to Mr. McCormick's admirable illustrations.

At Askole the third episode of the journey began. The party was once more united; but prior to this Mr. Eckenstein was obliged to return to England, as his health had begun to suffer. The others ascended the Biahlo Valley to the foot of the Baltoro Glacier. This issues from a loop of gigantic peaks, which in several cases exceed 25,000 ft., the highest being the famous K_2 (26,278 ft.), which overlooks the northern side of the upper portion of this huge ice-stream. After passing the tributary glaciers which descend from the two cols bearing the name of the Mustagh Pass—the western one reached by Colonel Godwin-Austen in 1861, and the eastern crossed by Captain Younghusband in 1887*—they ascended a peak 19,400 ft. high, and

* *Alpine Journal*, vol. xiv. p. 50.

finally camped out, on August 22, at 20,000 ft., and remained to explore the neighbourhood till August 25, when Messrs. Conway and Bruce, with Zurbriggen and two Gurkhas, succeeded in climbing a peak which forms part of a huge mountain called the Golden Throne. The summit of the latter rose about 1,100 ft. above them at a distance of nearly half a mile, and was cut off by a deep depression. Thus no more could be done, but even this subordinate—Pioneer Peak, as they named it—was 22,600 ft. above the sea by barometric measurement, and if judged by an estimate of the height of Golden Throne from that of K_2 must be more rather than less than this altitude, so that very probably it is about 23,000 ft. The day, fortunately, was fine, and they remained more than an hour on the summit, reluctantly quitting it at four in the afternoon and arriving that evening at a camp previously prepared (19,000 ft.). On September 5 they were back at Askole, and thus happily brought to an end their real mountain work.

When at high levels, and especially on their last expedition, the climbers were much affected by the rarified condition of the air. They found exertion difficult during the whole time spent above 18,000 ft. The slightest exertion, even lacing a boot, often caused panting for breath, quick and irregular action of the heart, and a sense of extreme lassitude. These and other symptoms of 'mountain sickness' were commonly felt on approaching elevations of about 17,000 ft., and sometimes at lower levels. Occasionally one of the attendants was affected even at from 13,000 to 14,000 ft., but the others were not generally conscious of inconvenience till they arrived near the higher limit. Mr. Conway's journey, however, has demonstrated that peaks of 25,000 or 26,000 ft. can be almost certainly reached by seasoned mountain climbers. Progress however will become slower and slower as this altitude is approached, and the ascent of such a summit as K_2 will probably require the last camp to be pitched at an elevation not less than that of Pioneer Peak; hence serious difficulties will arise as to the transport of proper food and shelter, and the attempt can only be made in the most favourable weather. Here, unless Mr. Conway's experience was exceptional, the mountain climber seems to find his worst foe. From the beginning to the end of the journey the weather was generally detestable; a fine day was the exception rather than the rule: two or three in succession seldom came. The vapour-laden air draws northward from the plains of India towards the vast mountain masses of Central Asia, and is not deprived of its moisture until it has crossed the Karakoram Chain. Doubtless on the northern side of this more favourable conditions can be found, but it will probably be long before the valleys of Turkestan become sufficiently accessible to strangers for an attack to be made upon K_2 from this quarter. Still, as Mr. Conway sometimes incidentally reminds us, certain districts which he visited have but recently become safe for travel, so possibly the inhospitable regions across one of the great watersheds of Asia may be fairly accessible in another generation.

Mr. Conway tells his tale most clearly and pleasantly. He avoids the fault, not unknown among writers on Alpine travel, of mild facetiousness, but he is never dull. We find, scattered through his

pages, much interesting information about the geography, the people, and the customs of the regions which he visited, with a little about their geology and natural history. But the more scientific results of his expedition, with reports from various specialists, will be published in a few months' time as a separate volume. The present one, however, demonstrates that his journey was more than a mere scrambling expedition. Mr. Conway does not belong to the 'greased pole' school of climbers, or think that a love of the mountains is best demonstrated by a contempt for science. He made extensive collections, and took careful notes as to the effect of diminished atmospheric pressure on the action of the lungs and heart. He has furnished us with a valuable sketch-map of the regions visited; indeed, sometimes the attractions of the plane-table seem to have prevailed over those of the ice-axe. Part of this region had been already surveyed by Colonel Godwin-Austen, but Mr. Conway has amplified and improved the details of that officer's work and has added to it considerably. The book is admirably got up, and abundantly illustrated from Mr. McCormick's beautiful drawings, which, however, sometimes hardly receive full justice in the process—reproduction. We will not compare 'Climbing in the Himalayas' with 'Travels among the Great Andes of Ecuador,' because we remember the well-known dictum; but we will say that the one book is worthy to take a place beside the other, and that the Alpine Club may feel just pride in numbering among its members two such travellers as W. M. Conway and E. Whymper.

T. G. BONNEY.

ALPINE ART IN 1894.

It is a frequent custom of the journalist, when any change is made that he has advocated, to ascribe the improvement wholly to his initiative, and to assume the whole credit for his own article. Without going so far as this we may at least look upon it as matter for congratulation that in matters of Alpine Art a full year should have succeeded the barren season that we deplored in these pages in 1893. So much, indeed, is there of interest that any preface is even more than ordinarily uncalled for. In view of the promised opportunities to be afforded to lovers of mountain painting in December next (another step in advance which was advocated first in the 'Alpine Journal,' but which in our modesty we are willing to ascribe to the energy of others) a rather more detailed criticism may not be out of place, seeing that we may hope to meet again some at least of the works now under review later on in the year.

The collection at the Royal Academy displayed such a laudable advance in catholicity of selection, and was so distinctly more varied in interest than usual, that it is not surprising that many more pictures of mountain interest were included than on former occasions. No doubt the orthodox mountain scene, even though accepted—after discussion—is often unplaced, owing to the representations of the Hanging

Committee. We do not imply that Alpine paintings are excluded in order to make way for the pictures of the members of that committee, but simply that these subjects are undeniably difficult to hang. They are prone to kill other good work, and are not seen at their best in a general collection. But this year the Academy seems to have thrown over its Hanging Committee altogether, and certainly set them a very difficult task—witness the contributions of Mr. Herkomer, Mr. J. S. Sargent, and Mr. Chevallier Tayler—though one in which on the whole they acquitted themselves well.

In one of the first rooms, well placed, was one of the best examples of Mr. E. T. Compton that we can remember, 'The Mountains of Valpeline, from Mont Brulé.' The quotation from Isaiah in the catalogue was unnecessary. The picture was a thorough and direct representation of a very grand view, full of air and with the clouds well in the sky (though this was the least satisfactory part of the picture), while the various aspects and colours of snow on a rainy, changeful morning were excellently given. So few of our members visit the mountains on this side of the familiar group that we fear the truth of outline and form of the distant peaks will not be appreciated as they deserve. But the painting cannot fail to please. It is to be hoped that this notable picture will be seen at the Winter Exhibition. The artist could hardly be better represented. It is not often that a water-colour artist succeeds so well in mixing light with his oil paints. A painter like Mr. Compton has a great advantage in that he does not dip once and again into Alpine art, but soaks and saturates himself in the mountain atmosphere. A good work by Mr. McCormick, an artist to be watched closely by collectors of mountain pictures, was to be noticed in the same room.

Few people would have expected to see Mr. T. Sidney Cooper essay a mountain subject, and fewer still, perhaps, would have anticipated that the veteran artist could succeed so well in a purely Alpine picture as he has in No. 71, 'The high hills are a refuge for the wild goats.' It is true that there are some goats, and they may have been intended to form the chief features of the painting. But the animals are, curiously enough, far from being successful, being marred by the faults with which the public has become only too familiar in Mr. Cooper's later works. Omitting the goats, and taking the picture piece by piece, it is one of the best landscapes he ever painted. The picture is full of light. The mountains go well back and rise high, and the qualities of painting almost reconcile one to the strange mixture of geology. It seems a pity to draw the Jungfrau with the Eiger on the wrong side of it, and to deposit a purely dolomite pinnacle in an Oberland foreground.

Mr. Vereker Hamilton has caught the true mountain feeling in his 'Dawn in the Scinde Valley, Kashmir.' The scene is raw and chill and weird. Doubtless the tone is true, but it is hard to believe in the clouds. The composition, too, is rather awkward. The framing of a picture in the painting itself, as when a view is taken from under an arch, or, as in this instance, where the greater part is seen between an inner frame of trees, is seldom satisfactory; but the artist has shown real power in dealing with a somewhat heroic subject.

Mr. Sidney Cooper is not the only Academician who has gone boldly to snow and ice for his subject. Mr. Briton Riviere, in a work that has excited a good deal of discussion, has followed M. Loppé's lead, and sought to pourtray the colour and form of pure glacier from the Alpine point of view. It may be considered a promising sign that the painting has, it is said, been purchased for the Chantrey collection. The reviewer is landed in rather a difficulty with regard to this work. 'Beyond man's footsteps' may reasonably be considered to be beyond man's criticism. No doubt in the region of the North Pole the colour and forms of the ice fields may be identical with those to be seen in the lower parts of an Alpine glacier. The physical laws which determine the direction of crevasses may be in abeyance in Arctic regions; otherwise it is difficult to understand the rather jumbled anatomy of the ice. The crumpling of the ice may be intentional, and it may be true; but it is not self-explanatory, as the lines of the crevasses suggest rather that the ice is flowing in various directions, radiating from the centre of the painting. The distant pinnacles of ice would be seen in any ice-fall, but only on condition that the sun, which is seen setting in a corner of the picture, directed its rays from the very opposite point of the compass. The séracs resemble the weathered crags of a dolomite ridge rather than ice. Such pinnacles could hardly be formed unless the glacier were flowing down a trough over a curved bed. Unfortunately, as pointed out, the lines of the crevasses do not indicate any such movement. Such hyper-criticism is but a veiled compliment. The painting is essentially dramatic, almost theatrical, in fact, but it is the work of an artist who is always interesting, and one which, whatever may be said against it, has the rare quality of being full of imagination. The bear gives a wonderful touch of loneliness. Here the painter is perfectly at home.

Perhaps the key to the inclusion in the Exhibition of the numerous Alpine paintings is to be found in the President's own work, 'The Spirit of the Summit.' It is easy enough to find fault with a painting so frankly ideal. It would be cheap criticism to talk of it as a representation of a young woman rather unsuitably dressed, somewhat uncomfortably seated, and furnished with a background a little too suggestive of the view from the Riffelalp. Surely, however, the ideality would have been vastly increased if so familiar an outline had not been, however vaguely, introduced. To those who cannot see beyond the brush marks in a painting, and ask for a mere transcript, the picture will not appeal for a moment; but for those who really love the mountains the work should have a great attraction. Every mountaineer has felt what the painter has sought to represent. Some have tried to render the sensations in words, and conspicuously failed. The more credit to the artist who has given us a notable work animated truly by the spirit of the mountains, full of dignity, impressiveness, and poetry. The painting, it seems to us, would have gained if the idea of the drapery shredding off into snow below had either been carried a little further or omitted altogether, while the concentration of high lights on the upper part of the figure gives a rather lime-light effect.

Mr. MacWhirter in his 'Flowers of the Alps: Anemone and Gentian,' repeats himself, and not too successfully. The painting is a large study of flowers, with some scratchy, slovenly-modelled mountain distance. No depth is suggested. The forms and lines of the hills nowhere suggest strength or solidity, and indeed the 'spirit of the summits' is wholly absent from the work. The painting is nothing but a botanical essay. Pictorially the flowers tell, but they do not tell the truth.

A work by Mr. Reginald Jones, entitled 'Mist,' was remarkable for its extraordinary truth of atmospheric effect. It was interesting to compare this with Mr. Donne's view of the 'Kinnbrücke, Stalden: passing storm,' where the artist was not seen at his best. The effect aimed at was marred altogether by a general muddiness and the colour of the clouds. Mr. Doyle Penrose in No. 450, 'The punishment of Loki,' had evolved a rather artificial rocky mountain top on which to bind his Scandinavian evil spirit, and had sought unwisely to impart an alpine flavour by making a patch of edelweiss grow in a perfectly impossible place.

Under the title 'Première neige: aux Avants,' M. Albert Gos showed a delicately-painted study of fresh-fallen snow, very simple and charming. A painter who can catch so well the subtle tones of 'saffron, or fawn, or rose colour,' as Southey wrote, should do well in the little-worked field of winter scenes in the Alps. Would that some of our younger painters would recognise that what Southey wrote of the English Lake district is equally true of sub-Alpine regions. 'Summer is not the season for this country. . . . Then it is like a theatre at noon. There are no goings on. . . . The very snow, which you would think must monotonise the mountains, gives new varieties; it brings out their recesses and designates all their inequalities.'

Though not strictly falling within the province of Alpine Art, we cannot forbear to notice the vigorous though rather grim portrait of Mr. Whymper by Mr. Lance Calkin. The difficulty of producing a satisfactory out-of-doors portrait had not been wholly overcome, but the work was a fair example of an artist whose work is always interesting.

The New Gallery contained but few paintings of Alpine interest, and only one of conspicuous merit. This was a strong work by Mr. Robert W. Allan, with the rather general title of 'Himalaya Mountains.' So far as we can remember Mr. Allan has made a new departure in essaying a mountain subject. His success should encourage further attempts. The middle distance is excellent, and the soft mists that fill the valley with blue shadows throw up the great snow-peaks in a perfectly legitimate way, and are not smudged in merely to save trouble. The foreground looks as if it had been borrowed from a sketch-book memorandum of some Scottish scene, with its winding road and flock of sheep. The colour of the patch of foliage in the centre of the foreground is strong but, remembering Mr. McCormick's studies, the brilliancy may not be questioned. Mr. MacWhirter contributes (No. 236) a painting of 'The Misty Hills of Skye.' The motive of the work lies in the strong relief of the dark jagged

mountain tops against a clear patch of sky showing through some breaking clouds. The road in the foreground seems to be sheeted with ice, and the wet look aimed at is altogether wanting.

Professor Costa was but poorly represented in the gallery. The best of his works were exhibited separately at Messrs. Agnew's gallery. We hope the committee may be able to collect some good examples of this admirable artist for the Winter Exhibition. Mr. Matthew Corbet sent but small works. 'A Morning Study,' however, was a delightful example, perfectly harmonious and steeped in the soft early light. Mrs. Corbet, one of the strongest of our lady artists who find their subjects in the mountains, was not seen at her best. Miss Hilda Montalba, in 'The Alps, from the Venetian Lagoons,' has attempted a difficult and ambitious subject with but partial success. The mountains seem to rise up from the water's edge and are destitute of form and character.

Most of the mountain pictures in the water-colour exhibitions were to be found at the old Water Colour Society. The Institute was remarkably poor in drawings that concern the present review, and as an exhibition generally fell decidedly short in quality of its usual standard.

Mr. William Collingwood was strongly represented at the gallery in Pall Mall East. The most ambitious of his works, 'Morning on the Gemmi,' was well worthy of his reputation. Light mists fill the valley, reflecting the rays of the rising sun. The hills south of the Rhone valley glow with colour (a little 'bricky' in tint), and the giants of the Pennine Alps stand up well. The amber and rose tones of sunrise are happily caught, and the colours of the shadows are very delicate and true. The picture is but small, yet the sense of vastness in the panorama is skilfully suggested. Close by hangs Mr. Cuthbert Rigby's 'Blea Tarn and the Langdale Pikes.' Mr. Rigby has still much to learn about mountain forms. A better example is 191, 'Langdale Pikes: winter sunset.' Mr. Collingwood is again to the fore with some views about Coniston. Of these the 'Hortus inclusus' is the most pleasing, but 'The Shepherd's warning,' a view looking across the lake, with the 'Old Man' on the left, is full of the broad soft light that follows rain. Mr. E. J. Poynter exhibits a beautiful little work elaborately wrought out, especially in the middle distance. This painting goes far towards showing that in the hands of a master the ordinary midday effects on the mountains are paintable. Good strong work comes from Mr. Colin B. Philip. The rather prosaic hardness is atoned for by the decided contours and modelling of the hills. A striking view of Snowdon by Mr. H. Clarence Whaite we hope to meet again; also, by the same artist, a grand sky—occupying some two-thirds of the drawing—over Carnedd Llewelyn. This is a bold and altogether successful work, full of strong colour.

Apart from the large picture galleries good work was to be found. Three drawings by Miss Donkin fitly found a temporary home at the Club Rooms. All were characteristically delicate in treatment and carefully finished. The best of the three—though, perhaps, the least satisfactory as a composition—was a view of the Weisshorn. We were

glad to welcome valuable additions to the Club collection in two of Mr. McCormick's black and white drawings. The artist has given of his best. Mr. McCormick's excellent drawings and sketches, which were separately exhibited in the earlier part of the year, have already been noticed in this journal.

We have reserved to the last a notice of a work to our minds the finest mountain painting of the year. This is a large picture by Mr. G. F. Watts, exhibited in Mr. Dunthorne's gallery. It is a study—suggested, we believe, by an effect seen from the shore of the Lake of Geneva—of a great mass of cumulus cloud glowing with the transient fire of sunset, sweeping up over a snow-covered peak, and resting lightly on the summit. Here is the spirit of the mountains indeed transferred to canvas, as if by the hand of Turner. Imaginary the painting of the mountain may be; imaginative it certainly is. The distant peaks are touched in with the unconscious skill of a master. This is a great work, and one that we are glad to think is likely to be included in the next Winter Exhibition. In the same room was an interesting though less important moonlight study of a rocky peak entitled 'Ararat.' Close by the 'Swiss mountain' was hung the superb portrait of Mr. Walter Crane. While we number among English artists a man with a range of power capable of producing two such works we need not be ashamed of English art.

C. T. D.

PROCEEDINGS OF THE ALPINE CLUB.

A GENERAL MEETING of the Club was held at the Club Rooms on Tuesday, May 1, at 8.30 P.M., Mr. W. M. Conway, *Vice-President*, in the chair.

Mr. WALTER LEAF read a paper entitled 'The Home of the Bears,' which was illustrated by lantern slides. A short discussion followed, in which Messrs. Conway, Solly, and Butler took part, the proceedings terminating with a vote of thanks to Mr. Leaf for his interesting paper.

A GENERAL MEETING of the Club was held at the Club Rooms on Tuesday, June 5, at 8.30 P.M., Mr. Douglas W. Freshfield, *President*, in the chair.

The following candidates were balloted for and elected members of the Club: Professor Harold Baily Dixon, Messrs. Victor Herbert Gatty and Alfred Holmes.

The PRESIDENT announced that the Committee had decided to hold the Winter Picture Exhibition in the Nineteenth Century Art Gallery, Conduit Street, and that it would remain open for about a fortnight, the actual dates being probably from the 11th to the 22nd of December. Further particulars would be announced by circular.

He also intimated that Lieutenant-Colonel Barrow had kindly presented the Club with a photograph from an old picture of Jean Michel Cachat (*dit le Géant*), one of De Saussure's guides on his ascent of

Mont Blanc, and also on his ascent and sojourn on the summit of the Col du Géant.

He stated that the map to accompany Mr. Conway's 'Climbing and Exploration in the Karakoram Himalayas' could be obtained at the Royal Geographical Society, price 5s.

He then referred to the question whether the general meetings of the Club during the next session should be held in the Club Rooms or in some larger hall; the attendance at the meetings had become much larger, and it was, he said, a question for the Club to decide whether they would not prefer to meet in more commodious and better ventilated rooms, although they might not be so comfortable and homely as their own. He said that in all probability the next December meeting would be held in the Nineteenth Century Art Gallery, and that probably St. Martin's Town Hall would be as convenient as any other place for the remaining general meetings, and from its vicinity would enable members who were desirous of doing so to adjourn to the Club Rooms afterwards.

Mr. HORACE WALKER put the question in the form of a resolution, and moved that the Club considers it desirable that a larger room than the present be used for the general meetings of the Club, the selection of a suitable room being left to the Committee. This was duly seconded and carried unanimously.

Mr. A. F. MUMMERY read a paper entitled 'The First Ascent of Dychtau' (formerly known as Koshtan-tau), which was illustrated by lantern slides.

Mr. H. WOOLLEY said that when his party arrived in the Caucasus in 1888 they heard that a certain Englishman had been up the glaciers and done something that surprised the natives. What it was they had been unable to find out, but on reaching the summit of Dych-tau from the north they found Mr. Mummery's cairn on the top. They had previously made an attempt on the south face, but fortunately it had been unsuccessful, as it led to their finding an entirely new route. It was strange, he said, that Mr. Mummery should have tried the north arête first, and then have ascended by the south face, whereas his party did just the opposite. They had all recognised that Mr. Mummery had accomplished a magnificent climb, and they now knew for the first time the great difficulty of it.

Mr. F. O. SCHUSTER expressed his admiration of the very excellent paper which had been read. He thought that Mr. Mummery had performed a greater feat even than his ascent in reading one of the most delightful and interesting papers the Club had ever listened to.

The PRESIDENT entirely agreed with what Mr. Schuster had said. Many papers had been read in the Club by men of exceptional powers of description, but they had listened to no paper which could have better brought home to every one the delightful sensations of a fine climb and the peculiarities of Caucasian travel. He hoped that everybody had enjoyed it as much as the few who had been in the Caucasus and knew how true and vivid the sketch was. As regards the change in the names of the Dych-tau and Koshtan-tau of the old five-verst map, the Russian surveyors had finally decided to call the peak known

formerly as Dych-tau by the name of Koshtan-tau, and to call the Koshtan-tau of their original survey Dych-tau. They had done this in spite of representations from England of the inconvenience of the change.

Mr. HORACE WALKER asked whether they were now to say that Messrs. Donkin and Fox lost their lives on Koshtan-tau.

The PRESIDENT replied in the affirmative, as the names definitely adopted in the Russian official map must be accepted. He was sure that the Club would pass the warmest possible vote of thanks to Mr. Mummery for his paper. This was unanimously agreed to and the proceedings terminated.

The SUMMER DINNER was held at the Ship Hotel, Greenwich, on Thursday, June 7, Mr. Douglas W. Freshfield (President) in the chair. Fifty-five members and guests were present.

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IN THE LAND OF BEARS.

BY WALTER LEAF.

(Read before the Alpine Club, May 1, 1894.)

AN easily accessible region of dolomites, with some eight or ten peaks of more than 10,000 ft., which rewarded a fairly industrious search with 'no information,' a promise of good inns in their close neighbourhood, a warm testimonial from Mr. Freshfield in the 'Alpine Journal' and the 'Italian Alps,' and a complete ignorance of the district—these were the temptations which induced Mr. Prothero and myself to turn, in September 1893, to the Lower Engadine. There was even a spice of adventure in entering one of the most westerly resorts of bears in Central Europe.

The region we proposed to investigate lies on both sides of the Ofen Pass, a little known but excellent carriage road leading eastwards from Zernetz to the Münsterthal and the Stelvio road. North of the pass lies a roughly triangular block of mountains, bounded by the Engadine and the Scarlthal. To the south is the district of Livigno, where the natural intricacy of the valleys is singularly complicated by that of the political frontier of Italy and Switzerland, which shows a fine disregard of watersheds, and gives to Italy one of her two bits of territory on the hither side of the main chain. The region contains no less than twenty peaks running into the magic five figures, but they appear to be all well-nigh exhausted by the effort, and none of them can beat the 10,427 ft. of Piz Pisoc. But little peaks can give good climbing enough, especially if they are made of dolomite, and we had thus reason to hope for the best.

After a walk or two among the Silvretta peaks, three

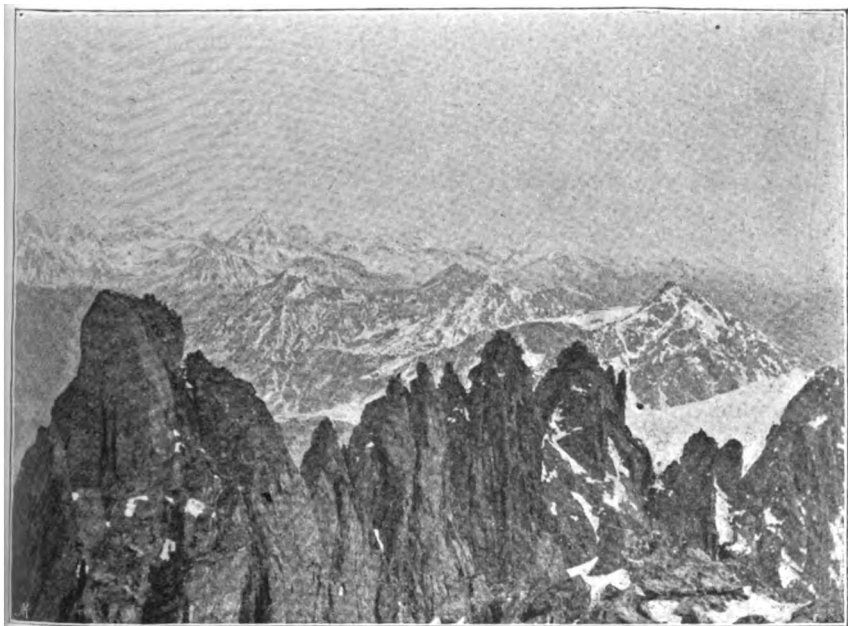
days of rain at Davos, and a superb and cloudless panorama from the Schwarzhorn—where, by the way, we had the satisfaction of showing the leading guide of Davos the summit of the Matterhorn, which he had always believed to be invisible hence—we found ourselves on September 5 at Dürrenboden, in a quaint but friendly little inn, where host



CROSSING A BERGSCHRUND.

and guides sang together to the accompaniment of the zither, and made us feel that we were far away from the familiar Valais and the Pennine Alps. Next day we crossed Piz Vadret to Zernetz. Mounting by the usual route on the N.W. side, over the Vallorgia glacier, we made what was probably a new variation in the descent on the S.E. The

correct route on this face starts, apparently, from the north side of the summit. We, however, from pure ignorance, began by going a little way down the south arête. Here we found the head of a steep couloir, crossed it northwards by a rather awkward ledge, and after descending a short distance and traversing back to the south side found ourselves forced to get into the next couloir by a practically vertical chimney some 40 feet high. We went down one by one with the rope, Guler coming last with a loop over a



VIEW TO N. FROM SUMMIT OF PIZ VADRET; PIZ LINARD, ETC.

handy rock. The whole descent from the peak to the glacier was probably not more than 300 or 400 feet, but it took us two hours, including various attempts to force passages at other points. The porter whom we had taken thus far with us volunteered the statement that he had never done anything like it in his life before. It was certainly the best bit of climbing that we got during our trip. The illustration on page 225 shows the summit of Piz Vadret on the right and our chimney immediately below the gap in the ridge. The couloir is not seen.

And here I must say a word in praise of Leonhard Guler, of Klosters. We engaged him for the whole expedition on the recommendation of friends, and had no reason to complain of our choice. Of all the guides with whom I have travelled he is the best companion. Not only was he always willing, ready, and thoughtful, not needing so much as a hint to look after all the petty details by which a guide can do so much to make things pleasant, in the valleys as well as on the hills; not only is he a good and safe climber, with an eye for a mountain; but he is an exceptionally intelligent, instructed, and agreeable companion, as sharp-sighted for a flower as for a chamois—which is saying a good deal—a collector of old furniture and old books—the former by profession—and, what is more, a shrewd observer of men, with a store of anecdotes and stories which he is well able to tell. He is, in short, of an altogether superior class to the guide that one has to deal with in Western Switzerland.

From Zernetz we drove, on Thursday, the 7th, to the little inn at Ofen, two hours up the Spöl valley. We found the Wirthshaus zum Ofen (marked on the Siegfried map by its Ladin name, Il Fuorn) comfortable beyond our expectation. An addition was built a few years ago, which has converted the old rough semi-Italian cantine into as good a mountain inn as heart can desire—clean, bright, and roomy. We shared it with only one other guest, a gentleman of Luzern, who was chamois-hunting, a keen sportsman, an enthusiastic fruit-grower, and a pleasant companion. On one night only was there any one but ourselves sleeping in the house.

We found that we were in a sporting country, to which mountaineering was unknown. The talk was all of chamois and bears, which had this summer reappeared in the district after an absence of several years; one had killed and eaten a calf not far from our inn, and a story was going the round of a hunter of Samaden who had found himself face to face with Bruin, and had been so startled that he omitted to fire. But whether the neighbouring peaks had been climbed no one knew or cared. The only point on which the natives all agreed was, that Piz Plavna was still virgin, in spite of the fact that it has a place in the Schuls tariff, and that Tschudi tells of the side by which the ascent is made. And we seemed carried back into prehistoric times, when Guler told us of a native who had cross-questioned him as to our motives in coming, and laughed to scorn the idea that it

was for amusement. 'If they are not hunting,' he said, 'depend on it they are looking for mines.'

Next day we made the first ascent of Piz Laschadurella (10,020 ft.), at the head of Val Ftur, just behind the hotel. I cannot honestly say that it presented any attraction but



PIZ VADRET, S.E. FACE

that of virginity. It was, indeed, so easy that even to mention it is almost 'like hitting of a gal.' I can only say in self-defence that we gave it every chance, as the last thousand feet or more were climbed in thick cloud and rain. The top is remarkable, in our experience, only for being very muddy, though in a brief break of the clouds

we saw just enough to show that in good weather the view must be a fine one. A little way to the east lies a nameless peak, only four metres lower, which is, I believe, still unclimbed, and looks as if it might present considerable difficulties.

The next day, Saturday, September 9, was no more promising than the Friday; but, as it was clearly no use sitting still at home, we set off for the Pizzo dell' Acqua (10,259 ft.), with all the tops cloud-covered and stray showers driving up from the west. In the improbable event of any one wishing to follow us into the Val dell' Acqua he may be glad to hear that you take the Livigno path for about an hour, until a very plain track branches off to the right, and leads you to a bridge over the Spöl. Then the way is clear. As we went on the weather improved a little, and during breakfast we got a sight of our peak. There is a fair-sized glacier in the valley, some two miles long, but three-quarters of the length are entirely concealed by a huge moraine. Fortunately it is not very steep, and gives fair going. There is not much to be said about the climbing, except that it is more varied than the Laschadurella, and that we had one short but rather steep wall of very treacherous rock just before reaching the eastern arête. The illustration shows the easy ledge by which we passed along below the arête.

We gained the top in snow and wind; our axes were humming with electricity, and we did not care to stay more than the five minutes necessary to heap up a few stones on the very sharp summit, which showed no signs of any previous decoration of the sort. We ate lower down amid all the signs of a coming storm, and were completely taken by surprise an hour later when the weather suddenly cleared up like magic, and gave us our first view of the mountains to the north and east. The next day, Sunday, was lovely. We gave Guler a day off, which, of course, he took advantage of to go after a fine buck chamois we had seen in the Val dell' Acqua. In the afternoon we started off for Livigno, leaving a message for him to follow us.

Of Livigno I need not speak, as Mr. Freshfield has already described it in his 'Italian Alps,' though, to judge from the Strangers' Book, he has not succeeded in inducing many Englishmen to visit it. After the beautiful walk through the romantic cliffs of the Spöl valley, with their genuine dolomite colouring, this fat upland valley seems rather tame. But it has a better inn than in Mr. Fresh-

field's time, and possesses one advantage of which he does not speak. In virtue of its position beyond the watershed, I suppose, it has no custom-house, and compounds for its taxes by a small yearly payment. It is a rare pleasure to find oneself in Italy without the risk of having to pay three times its value as duty on the tobacco in one's pouch.



SUMMIT AND N. FACE OF PIZZO DELL' ACQUA.

As Guler had not turned up by 8 o'clock next morning Prothero and I set off in search of Monte Foscagno (10,130 ft.), which was down on my list with 'no information.' From the shoulder above Trepalle we saw a peak in the required direction, and reached it by the rough but easy northern ridge in rather under 5 hrs. going from Livigno.

It was a superb point of view, but it was not the top of Monte Foscagno. That lay some little distance further on, and evidently out of reach at this late hour; it was, therefore, some consolation to see an unmistakable stone-man at the top of the highest of the two bold peaks of which it consists. The whole length of the Italian Val Viola lay at our feet, and we saw every peak for miles round, so far at least as the clouds, now fast gathering, allowed us; the Ortler remained obstinately veiled. But we gazed long at one of the most beautiful mountains in the Alps, the Cima dei Piazzi; it has not been ascended from this, the N.W. side, and we sought in vain to trace a way through the maze of huge schrunds which split the great glaciers covering its flank. The very name of the mountain is unknown even so near as Davos; it is well seen from the Schwarzhorn, but passes as the Adamello or Presanella, according to the fancy of your guide. From our top a quick walk over débris took us down to the frequented Passo di Foscagno, and so in 3 hrs. to Livigno.

Our programme for the next day—far too ambitious, as it turned out—was to cross the Alpisella Pass to S. Giacomo di Fraele, ascend Piz Murtaröl—‘no information’ again—descend on the N.E. side to the Münster Alp, cross the Buffalora Pass to the Ofen road, and so back to the Ofen inn. We started late, and began ill by missing the Alpisella path, and losing valuable time in forcing a way up the bed of the stream. The path really lies high up, close under the cliffs of the Pizzo di Ferro. We got to S. Giacomo only at 10.15, and reluctantly decided that it was too late to go on to a peak which still lay more than 4,000 feet above us, and of the other side of which we knew nothing. There was nothing for it but to pass the night at S. Giacomo.

But the delay was well rewarded. That afternoon remains one of the pleasantest memories of the trip. S. Giacomo was, in fact, a complete surprise. Even Tschudi has nothing to say about it, and from the map it would seem to be no more than a hut in a bare upland alp. What we found was an undulating plain, lying exactly on the main watershed, with a view down the Val Brüna to the north, and to the south down the windings of the Val di Fraele, closed by the mass of the Cristallo and the Ortler. Two side valleys open into this plain, and break up the chains to the west. There is a peculiar charm of contrast in these mountains, for on the one side there are the fantastic dolomite crags

of the Pizzo di Ferro and the Monte Cornacchia, stained with all colours from dead grey to glowing orange and red; on the other, to the south, is the slate range of the Cime di Plator, built up of great smooth 'Blatten' in nearly vertical faces. The plain is well wooded and strewn with huts; springs burst from it at every point, and turn the infant Adda, hardly a mile from its source, into a respectable river; while among the woods, and hidden from the road under the cliffs of the Cornacchia, lies a lovely little lake, with a bottom of the purest white marble sand. At the highest point of the plateau, and just on the watershed, stands the little church of S. Giacomo (6,407 ft.), and by its side a Casa Cantoniera, rough in appearance, but provided with at least two clean beds, abundant and good food, and Veltliner at a franc the litre. It is an idyllic spot; further west or north it would by this time have been plentifully provided with big hotels and all the outfit of a 'Luftkurort.' No doubt this will all come in good, or bad, time.

Guler, as landlord of the 'bewirthschaftet' Club hut by the Silvretta glacier, was sorely tempted by finding here a man with a donkey to sell for the sum of 120 francs. He wanted one to help in carrying provisions from Klosters to the hut, and he said that at home he might go all the year round without another chance of buying one; for, strange to say, it seems that the use of beasts of burden is unknown in the Prättigau. Of mules he spoke as though he knew them by name only; he had been warned against their 'launisch' character, but had no personal acquaintance with them. And certainly I saw no evidence of such use while I was at Klosters. He ultimately decided not to buy the animal, however, on the ground that it was the end of the season, and that the donkey would only spend the winter in eating its head off to no purpose.

The kitchen of the little inn was filled at night with a company of Bergamasque shepherds on the way back to Italy with their flocks, and a picturesque sight they were as they sat and ate their polenta. But what interested us at least as much was that there turned up, in the company of an Italian from Sondrio on a hunting expedition, Krapacher, of Bormio, the one man, it would seem, who really knows the district. He told us that more than one ascent had been made of Piz Murtaröl, or Monte Cassina, as he called it. It is a pity, by the way, that the Swiss map has not taken this name in place of Murtaröl, which, in one form or another, is far too common round here. In a distance of

a few miles there are, besides Murtaröl, a Piz Murter, a Piz Murtarus, and a Piz Murtera, and it is, of course, not a far cry to Piz Morteratsch. The name comes, I suppose, from Morta Terra, and its frequency is due to the stretches of 'dead land,' waste slopes of barren limestone débris, which are so painfully frequent in the district.

He, too, it was who had built the stone-man which we had seen on the top of Monte Foscagno, and had made the first ascent of the Cassa di Ferro, as he named the highest peak of the Dosso di Ferro to the north of us. On all these expeditions he had accompanied Signor Cederna, of Milan, who had evidently been all round the frontier on a 'mopping-up' tour. But the real blow was when he said that he had been with the same gentleman to the top of the Pizzo dell'Acqua. A careful cross-examination only confirmed the truth of his statement, and left us but the poor consolation of having found a new route, as he had climbed the peak from the Passo del Diavel, the opposite side from ours. He told us that there remained but one virgin peak in the Livigno district, the Piz Salient. I must add that I have not been able to trace any record, in either the 'Bollettino' or the 'Rivista,' of these expeditions, with the exception of the ascent of the Cassa di Ferro.

Though the bloom had thus been taken off the Murtaröl it was clear that nothing could deprive it of the privilege of being one of the very finest points for a panorama in all the district, as it is the highest point of the range of Piz Umbrail, and overlooks everything from the Ortler and Bernina groups in the east and south, to Pisoc, Linard, and Kesch in the north and west. The summit was veiled in cloud when we started, but things looked better as we rose by slopes clothed with edelweiss, the most profuse and luxuriant that I remember to have seen. These were succeeded by the usual wearisome débris, and also, alas! just as we got to the top, by the usual cloud, so that we never saw our panorama after all. In the descent we made a great error, trusting to Krapacher's advice. We traversed under the rocks of the N.W. arête by the abominable débris on their south side, and thus, in a wearisome hour of walking, gained a little col from which we could descend, still over débris, to the Münster Alp to the north. We afterwards saw that we could have saved some time and much labour by coming straight down the left bank of the westernmost of the two steep glaciers which cover the northern face. From the Münster Alp some 3 hrs. over the grassy Buffalora Pass

and the Ofen road took us back to the now familiar Ofen inn.

Next day we devoted to idleness ; it was, therefore, very fine. We sent off Guler to examine the approaches to Piz Tavrü (10,394 ft.), over which we proposed to cross to Scarl. He came back saying that he was sorry he had not bought that donkey at S. Giacomo, as we might have used it to ride to the top. Unluckily I had been somewhat out of sorts for the last few days, and when the time came I did not feel equal to starting ; so I had to let Prothero go alone. He had a little climbing, which would at least have been too much for that donkey, and a splendid view ; the peak was evidently virgin. But he came to the conclusion that a direct descent from the top on the north side, though perhaps possible, would be decidedly dangerous. When we saw this face afterwards it was clear that his conclusion was right. There was no way of descending but by couloirs, apparently of ice and well swept with stones.

In his absence I felt sufficiently recovered to spend the afternoon in going up the Munt la Schera (8,494 ft.), opposite the hotel, the local Rigi, and well worth a visit, though even here it is hard to avoid the universal slopes of loose débris. But the view in all directions is a fine one, and repays the labour.

Next day (Saturday) we crossed to Scarl by the pass immediately to the south-east of the Tavrü. It is perfectly straightforward and easy ; but it cannot be said to be free from danger, for it is well known that the Val Nügliä is haunted by a ghost, 'the witch without a nose.' She was, it appears, an official of the convent at Münster, and for faithlessness to her vows is condemned to wander about this desolate valley in this unattractive guise. From what Guler told us it would seem that the traveller has only too good reason to be thankful that all the valleys in the neighbourhood of Münster are not peopled with ghosts in a similar state of noselessness. But perhaps this is only scandal. At all events we escaped her terrors or her attractions, though we thought we saw her turned into a rock and looking down her haunts from near our pass. Future travellers, besides being on their guard against her, must also take good heed to avoid another allurement in this valley—to wit, a well-marked path which starts behind the Buffalora cantine, and seems to lead up the right bank of the stream. It has probably been made by the malice of the witch, for they will find that it leads them only into trouble. By crossing the

bridge and a little meadow beyond it, however, they will find a path on the left bank which is all they can desire.

We found Scarl in a state of picturesque animation and excitement; the cows had left the 'alps,' and their owners had come to receive their allotment of cheese and butter, the result of the summer's work. Of the two inns we chose the 'Edelweiss,' after some hesitation; whether we were right or not I do not know. It is primitive, and our rooms and beds certainly did not justify the charges of a first-class hotel, which were made not only to us, but to Guler. Next morning we walked down to Schuls in pelting rain, which continued steadily all day; on the Monday we took the diligence back to Davos and the rail to Klosters, where we succeeded in somewhat appeasing our thirst for a good climb by an ascent of the Gross Litzner, reaching the top, as usual, in cloud and snow.

It will be seen that this dolomite region produced a good many disappointments. The record of first ascents in the district seems to have been very carelessly kept, or to have been kept in some unusual place; and we were convinced that many peaks with 'no information' were by no means virgin. Under this head must come Piz Minger (10,195 ft.), and probably Piz Zuort (10,243 ft.), just above Scarl. We came across a Schuls man who had been up the former this summer, and had found some cards of previous visitors on the top. There are, however, still one or two ascents to be made, which I expect would turn out to be new. The Pizzo del Diavel (10,079 ft.), on the north side of the Val dell'Acqua, is one of these; the southern point of Piz Pisoc (10,299 ft.), a quite independent peak, is another. Piz Foraz (10,152 ft.) is doubtful.

A more serious disappointment was in the climbing itself, which certainly showed us nothing qualified to keep up the reputation of dolomite. Every point we reached was easy on one or two sides, though generally difficult, perhaps impossible, on the others. The rocks, where we got on to them, were treacherous, but uninteresting, and everywhere the way lay unavoidably, for a greater or less distance, over repulsive slopes of débris at the highest possible angle, which at least doubled the labour, while their crying barrenness was somewhat depressing. It was a real relief, from time to time, on the edge of the district, to set foot for a while on good honest gneiss. I regret to have to add that the contrast was such as to lead Prothero to speak of the limestone as the 'g nasty.'

Another disappointment was the weather. There is a curious tradition in some places to the effect that the weather in September is generally settled, especially if you have a good break with a snowfall just at the end of August. In this hope we patiently endured two days of hopeless rain at Davos, and the deep snow which they left behind on the tops. But we were deceived; the weather, to the last, was as capricious as I have ever known it. No one can have less respect than I for local weather-wisdom; but I must say that, in this case, it was rightly in opposition to the received opinion. Guler said that September was, on the whole, a bad month, and the previous September one of the worst he had known. In Scarl we found that it was actually proverbial for uncertainty. The landlady there quoted a saying—

Im September
Hat's kein Kalender.

The rhyme is not so rigid but that one might insert the names of various other months, and thereby expand the truth of the adage.

And yet, in spite of all this, our recollection of the whole trip is most pleasant. There is a charm about these unspoiled districts, their simple inns, never crowded, always friendly, and always comfortable, their sociable and courteous company, the beauties of streams and cliffs, of colour and form, which more than compensates for gymnastic deficiencies. But it is better to say nothing which might be so unfortunate as to teach more than a small rill from the stream of tourists to see for themselves.



L. GULER.

CHRISTMAS AT DHARMSALA.

BY THE HON. C. G. BRUCE (5TH GURKHAS).

HAVING obtained fifteen days' leave of absence from my regiment in December last, I determined to pay a visit, as I had long wanted to do, to Dharmsala, where the 1st Gurkha Rifles has its permanent station, and to combine a climb to the high ridge, on the spurs of which the station of Dharmsala or Bagsa is situated, with a little shooting in the Kangra valley and a visit to the tea plantations at Palampur, lower down the same Kangra valley in the Kulu direction. The great mountain ridge behind Dharmsala separates the Kangra district from the semi-independent State of Chamba, and is, though but little broken up into peaks, very impressive, owing to its abrupt rise from the plains. Kangra lies from 2,000 to 2,500 feet above the sea, and the mountains rise directly to a height of over 17,000 feet.

After a horrible drive over one of the worst carriage roads in Asia I reached the foot of the hills, and then was only too delighted to change my *tonga* for a pony which I found waiting for me. $1\frac{1}{2}$ hr. ride brought me to my destination. On the way I had not had one glimpse of the mountains, which were hidden from me by dense clouds. However on my arrival the clouds began to blow over to the Chamba side of the ridge, and within two hours not a cloud was to be seen. A dazzling white ridge took their place, most beautiful to look at, but making me mournful when I remembered certain struggles through winter snow in the Zermatt district in '91. My companion, Money of the 1st Gurkhas, was very keen that we should start on the following day, camp as high as we could, and on the second day make a push for the prominent peak on the ridge which stands directly behind Dharmsala station. Accordingly next morning we started, a party of four—Money and myself, a Gurkha of Money's, and last but not least Karbir Bura Thoki, of my regiment, who was as keen as mustard to get at a mountain again. It took us nearly two hours of smart walking before we were clear of the station of Dharmsala. A station spread over a hill-side from 3,000 to 9,000 feet above the sea certainly has its drawbacks. I am told that invitations to dinner are given and accepted between houses separated by 4,000 feet of hill-side. Two hours' more walking brought us to Lākar, about 10,500 feet, and after lunch we proceeded leisurely for another 1,500 feet to our camp, a large overhanging rock

which we found had luckily let no snow in under it. We made ourselves comfortable here for the night. It turned out much warmer than could have been expected from the height and time of year; we owed our comfort no doubt to the stillness of the air.

We left our camp next morning at 4.20, after a comfortable 'chota haziri' of cocoa and bread. We had determined the night before to follow for about half of the way up the track used by the people of the country in the summer to take their goats over to Chamba. This ensured us good quick going, provided the snow was in good condition, and, although rather longer than a direct attack on the peak in point of distance, would probably save us some time. We roped together at once on starting, to insure regularity, as the morning was very dark, and made good progress for some time over perfectly easy but steep slopes and over snow in capital condition. At 6.15 we left the easy arête on which we were, and traversed the face of the mountain to nearly directly under our peak. From here onwards a good deal of care had to be exercised, as we found the rocks much iced and the snow powdery. One long slope in particular gave us a great deal of work—powdery snow 2 feet deep over a sheet of ice. However, luckily, the angle of the slope was not very bad. At 8.30 we arrived below the very steep face of inclined rocks directly under the face. Owing to the icy condition of the rocks I gave up all hopes of climbing the slabs themselves, but keeping a little to my left again was lucky enough to find a way; a steep couloir filled with frozen snow led into a very steep chimney, which again was connected with another still stiffer, by a rather awkward traverse across a steep face of rock. The second chimney led us directly under the final arête of a small point somewhat to the left of our peak. There appeared to be considerable difficulty in getting out of our chimney on to the arête again. At 8.45 we started at the first climbing, and $\frac{3}{4}$ hr. of gymnastics found us at the bottom of the second. The chimney was steep enough, but the difficulty was to get into it. We were on a narrow ridge of rock from which the axe had scraped the ice away, and the chimney came to an end about 5 feet above our ledge, and was moreover full of ice. It took several minutes' work to cut niches sufficiently good to pull myself up by, and when in it was by no means easy to stay, owing to the icy condition of everything. Finally, however, I arrived at the top, and crept into a large cavity in the rock and lay round, so that my body came

across the entrance. From here I could assure my companions that unless I happened to break they could come as they liked. Karbir, who followed me on the rope, had been splendid; on several occasions, the holding being very bad, he fixed himself with both hands and feet and held the rope in his teeth, taking apparently without discomfort as much strain as the two who came after him put on. He certainly on one occasion bore the full strain of a single man without effort. He was of course held fast from above. I am bound to say, however, that I do not recommend his method; but as a dentist's advertisement—'In this style: all ivory, and only 1 dollar the set'—it would 'lick creation.'

In five minutes more we had turned a nasty corner over a slab and were on the arête again. A quarter of an hour later, at 11 o'clock, we were on our little point. This point is close upon 16,000 ft. above the sea. So we had taken six hours' hard work to make, at the outside, 4,000 ft.

We decided that we had done enough, so after one hour's rest we turned, at noon, to go down. For $1\frac{1}{2}$ hr. we followed the main ridge of the mountain towards the pass to Chamba, which I have before mentioned. The rocks forming the crest of this ridge were much iced, and as soon as opportunity offered I struck down the face again, making for a long couloir about 1,000 ft. below us, which was filled with last year's snow. On reaching this we had capital going to within about 1,500 ft. of our camp, when we left it for steep snow-covered grass slopes a little to the right of the track by which we had ascended.

At 3.30 we reached our camp, and rejoiced to find lunch, and above all beer, ready for us. At 4.30 we were away again, as we had engagements to dine at Dharmsala, at a level of 4,000 ft., at 7.30.

From the top of the ridge we had a beautiful view of the glaciers and peaks of Bără Bégál, to the south-east of Chamba. They bore but little fresh snow, and I am told that there is little rain or snow in this district from the end of September until the middle of December. Bără Bégál can also be reached in a week or so's marching from the Kangra valley or from Kulu. The whole district would certainly be much more suitable for autumn climbing than further north. The chief advantage of the district is its accessibility; there are probably no other really great mountains and glaciers so near civilisation and the railway. A first-class train of coolies could be hired in the

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Dharmsala district from among the Gáddis; they are capital men, very cheerful and hard-working. The district of Bără Bégál has no inhabitants; in the summer the Gáddis and shepherds from Chamba take their flocks there, but all leave before the winter shows signs of approaching. Good shooting can be obtained both in Bără Bégál and in Chamba.

NOTE ON THE MAP OF THE GLACIERS OF SUANETIA.

THIS map is a photograph from a sketch-map prepared for Mr. Freshfield, and based on the new sheets of the Government 1-verst map. Slight alterations have been introduced at the head of the Shikildi Glacier based on Signor Pelle's photographs, and more considerable ones in the spur E. of the Adyr Su, the sheet representing which is not on a level with the rest of the New Survey. The spelling of the local names on the photographic map must not be regarded as definitive. Twiber should be Tviber, and other modifications will be made in the forthcoming Caucasian Handbook.

SCRAMBLES IN THE JAPANESE ALPS.

BY THE REV. WALTER WESTON.

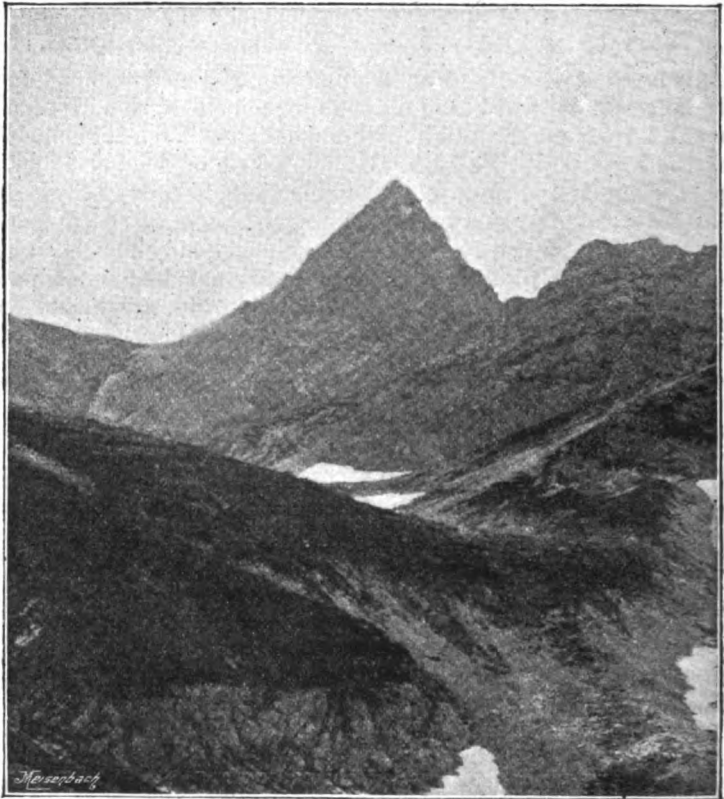
I. YABIGATAKE, THE MATTERHORN OF JAPAN.

A GLORIOUS morning greeted us as we turned our backs on our inn and, in company with the sturdy trio of bear hunters who were to act as our guides and porters, passed out of Hashiba* on our way towards our peak. In order to gain the hut at which we proposed to spend the first night we had first to traverse the valley of a fine mountain torrent which falls into the Adzusagawa just east of Hashiba, and then, winding up a densely-wooded spur of Kasumigatake, to cross the ridge by the pass known to the hunters as the Tokugo-tôge. The fresh pure air of the cool valley, the dew drops trembling like diamonds on the sweet-scented pines, the blue vault of heaven seen as a narrow band above the steep sides of the great ravine, and the rushing waters of the emerald stream below all combine to make even existence itself a delight. A steady walk of an hour brings us to a little wayside hut, which has been built since I was here a year ago, and which rejoices in the name of Furô-taira, in allusion to a chalybeate spring recently discovered on the opposite side of the valley, whose waters, now conducted into an artificial bath by means of bamboo pipes and heated by a charcoal stove, are held to be a sure specific

* Hashiba is practically the same village as Shimajima. Cf. *Alpine Journal* for May 1893 (No. 120), p. 390.

for many of the ills to which flesh is heir. The courteous old custodian, interested at the arrival of the first foreigners he has ever seen, insists on our stopping to drink tea with him, and only the prospect of a long day's march before us compels us to decline his pressing invitation to test the healing virtues of his novel *furō* (hot bath).

Some three miles higher up, the valley contracts for a short distance in to a narrow gorge where the wild waters of the torrent plunge over



YARIGATAKE FROM THE NORTH-EAST.

the edge of a rocky basin with a thunderous roar. Immediately afterwards, however, it opens out again, and the sound of the woodman's axe is heard as we pass by a spot where a party of wood-cutters are engaged in felling the great pine trees on the steep hill-side on the right bank. As the trees fall they are one by one shot down a sort of timber slide, and then stacked in great piles before being finally poled down the stream to Shimajima and Matsumoto for sale.

It seems odd to find large portions of these forest-clad slopes entirely denuded of their fine timber in this way, instead of being gradually thinned out, though after the trees have been once cut down the spot is left untouched for twenty or thirty years. Indeed, I have been informed that in some places it is customary, where one tree has been removed, to replace it by planting two close by. These forests are the property of the Nōshōmushō (Agricultural Department), but concessions to fell and sell the timber may be acquired by private individuals. It is owing to the work of this active department that the paths in these wild regions are being improved and extended, and the huts they occasionally erect for their workmen afford a convenient means of shelter to the traveller whenever he happens to find them open and tenanted.

The climb to the top of the col, 7,100 ft. above sea-level and 4,400 ft. above Shimajima, leading between the rounded summits of Nabekumuriyama on the N. and Kasumigatake on the S., is very steep, and interminable seem the zigzags of the path whose sinuous windings crawl through the dense bamboo grass and under the welcome shade of the pines that cover the slopes from base to crest. At length, in 6 hrs. steady walking, we gained the head of the pass, and after a short siesta—for the day was hot and the valley somewhat close, through lack of cooling breeze—we began the descent towards the broad vale in which the hut for which we were making is situated. The view from the summit of the col is hidden by trees, but a few feet below a glorious scene suddenly confronts us. To the W., straight ahead, towers the bold form of Hodakayama (Myōjindake), whose stern grey granite cliffs, seamed here and there with long lines of glistening snow, rise steeply for a height of over 5,000 ft. above the bed of the Adzusagawa, whose broad stream is chiefly fed by the great snow slopes on Yarigatake. The 'spear peak' is still hidden from view by intervening ridges, but to the N. appears the graceful pyramid of Jōnendake, vividly reminding one of the shape of the peerless Weisshorn, though lacking the adornment of her robes of snow.

A quick descent, during which the now dwindling track finally loses itself hopelessly in the loose rocks of the torrent down which we have to make our way, brings us to the hut in the forest on the edge of the left bank of the Adzusagawa; but we decide to push on, if possible, some 5 miles further, where a roomy cave I know of affords shelter so much nearer the base of our peak. But there is some delay in fording the river, and by the time we have got well on our way up the right bank day is too far advanced, so a halt is called and a short discussion ends in a determination to bivouac at a suitable spot in the forest about half way between the hut and the cave. Water and wood were found in abundance at hand, and it was not long before the Isaak Walton of our party had secured us some of the delicious trout in which these streams abound. Supper over we slung our hammocks side by side on conveniently situated trees, stretching over them a roof of Japanese oil paper, for the night was fine and dew was likely to fall heavily.

The hunters meantime put up a shelter of branches and leaves for themselves, and with a grand fire blazing all was soon cheery and bright. By-and-by the stars began to light the sky with an almost tropical radiancy, and clear and cold the moon rose from behind the dark pine-clad ridge on the opposite side of the valley, whilst straight above us the lonely, majestic form of Hodakayama, with its pale slopes and lines of snow, loomed up in ghostly grandeur, and over all a calm stillness reigned, unbroken save for the low murmur of the broad stream over its stony bed.

On the following morning we were up betimes, and by 5.50 had struck camp and were on our way in eager anticipation of the climb before us. First comes a long stretch of water-worn boulders and smooth stones in the river bed, for the volume of water has narrowed a good deal through the summer drought. This traversed, we next cross a corner of the forest, by way of making a short cut, and in an hour from the start reach a point where the main valley is joined by the wild ravine on the left, called Yokoōdani, up which my friend, Mr. W. H. Belcher, and myself passed when attempting the ascent of Yarigatake by a new route the year before. On that occasion, after an arduous scramble of 10 hrs., we found ourselves at the foot of the final peak—i.e. within 400 ft. of the summit—in a pouring rain, which rendered the rocks perilously slippery, and, deserted by the guides at too late an hour in the afternoon to justify us in proceeding alone, we were consequently obliged to accept defeat and to return.

Now, however, Miller and I are taking the route up which the two previous ascents have been made, and are more hopeful of success. After an hour and a quarter's steady work up the torrent from the Yokoōdani, now wading the turbulent waters, now leaping from boulder to boulder on its brink, or again pushing our way through the dense bamboo grass and the thickets high above it, we at length halt at the foot of Chōgadake, and just here a lateral valley on the left opens out to us for a moment our first view of the monolithic form of Yarigatake itself. As a rule we have followed the course of the torrent nearly all the way, but now and then a slight *détour* takes us across a tributary stream at its side, and in one of these I had an impressive reminder of the fact that for this kind of work the *waraji* (straw sandals) of the native hunters are far preferable to hob-nailed boots; for, when crossing from one particularly smooth boulder to another, I failed to get a good foothold on its rounded surface, and the next moment found me cooling my heated frame in the snow-fed stream, having sat down with all the emphasis of the commencing skater in his earliest efforts.

Another hour's walk brought us to a point where we could at length leave the torrent and take to the wood on the left bank; and, after a hard struggle with the dense undergrowth, we emerged on to a steep slope of rotten red rocks, fragments of which, very loose and sharp, made the going troublesome. Crossing this, another rough scramble through the wood brought us once more close to the torrent bed; and here before us lay the huge wedge of rock which the hunters call the *Akasaka no iwa-goya*, 'the Red Cliff Cave,' and which forms one of

their favourite shelters on their expeditions in search of the bears, boars, and Japanese chamois (*iwa-shika*) in which this wild, unfrequented region abounds.

It was at this spot that Belcher and I had to bivouac on our retreat from Yarigatake, soaked through to the skin, without a change of clothing, having had scarcely any food for many hours past, and with no better prospect for many to come. But we were none the worse for it afterwards, and it was with a grim satisfaction that we gazed on the interesting spot, and contrasted our present comforts with former disagreeables.

After a long halt here we set off at noon, and for 45 minutes followed the course of the now attenuated stream until we could leave it for the loose rocks and steep grassy acclivities to the W. Yarigatake now comes in full view once more, and the sight of the great obelisk spurs us on to more strenuous efforts, which at last land us on the long wide slopes of snow which lend a pleasant variety to our climb, and bring back recollections of happy days spent in Alps of far wider fame than these of Japan are ever likely to know.

Above the last snow-slope a wilderness of rocks piled up in unutterable confusion has to be traversed before the base of the final peak is reached, and one is reminded of the 'aspect of destruction' in the broken cliffs of the aiguilles of Chamonix to which Ruskin refers in the well-known magnificent passage in the fourth volume of his 'Modern Painters.' Some of the larger fragments of rock that have here been rent from the ridges of Yarigatake have fallen into such a position as to form caves, and in one of these a solitary hunter had taken up his temporary abode—almost the only person we met during nearly three days away from Shinajima.

At 3 o'clock we were on the saddle from which the arrow-like portion of the peak sharply rises, and then came the grandest bit of the whole expedition—a climb up 400 ft. of steep, smooth rocks on the S.E. arête, the very recollection of which almost makes one's fingers tingle again. This accomplished, a sharp turn takes us westward, and another step places us on the tip of the very 'spear-head' itself. Yarigatake is ours, and, save for 'Fuji the peerless,' we are on the highest point of the fair Empire of Japan.

The summit consists of a short, sharp ridge of bare rock, whose sides plunge down almost perpendicularly, except on that up which we have climbed. The view, as one gazes down into the wild and desolate valleys that stretch away from the base of the mountain, is one of extreme impressiveness.

To the north lie the almost unknown peaks of the range between the provinces of Shinshū and Etchū, whose furthest end slopes steeply into the waters of the Sea of Japan. On the W. towers the rugged form of Kasa-dake, which we think would afford a grand climb if attacked from the valley which separates it from us. Southwards the eye rests on the nearer giants of the Japanese Alps—Hodakayama, with its pinnacles of granite, and the massive, double-topped Norikura (the 'Saddle Peak'); whilst beyond these come Ontake with its near and lofty neighbour Komagatake of Shinshū,

both extinct volcanoes. To the S.E., but far away, rises the great mass of mountains on the borders of Shinshū and Koshū, of which Akaishi San is noticeable, with its sharp, triangular top.

But most striking of all is the stately cone of Fuji, rising with its majestic sweep supreme above all else, its unbroken contour showing clear against the sky at a distance, as the crow flies, of nearly ninety miles.

To enumerate all the summits to be seen from our point of vantage would be to give a list of the grandest mountains in Japan. Beyond Fuji lie the blue waters of the Pacific Ocean, and only the haze in the N.W. prevents our panoramic view from embracing the Sea of Japan in the Bay of Toyama, so that nearly the whole expanse of the central portion of the main island at its widest part is included in this magnificent prospect.

The height of Yarigatake is 10,300 ft., and the peak, which is probably the oldest of all these giants of Japan, consists of a hard, weather-resisting, brecciated porphyry, traversed by numerous foliated siliceous bands, inclined at high angles and frequently contorted. Here and there beautiful pieces of quartz are to be seen. It is to this hard porphyry breccia that Yarigatake owes its height, and to the siliceous bands the jagged, spear-like appearance from which it gets its name.

Leaving the summit at 4.30, a quick descent over the screes, followed by glorious glissades down the welcome snow-slopes, and then a frantic scurry down the torrent-bed, lands us just before nightfall (6.30) at the *Akasaka no iwa-goya*; for daylight dies early in these sequestered valleys, whose sides rise too abruptly to allow the sunlight long to linger within them.

By the time we reach the cave one of the three hunters has just returned from the lower camp with supplies, for which we sent back when we were at this spot in the morning; and presently we are chatting over the fire about all the events of the day with the coolies, who are delighted at our success. Our evening meal done, we 'turn in' under the lee of the sloping rock, our beds consisting of a few ferns and leaves, over which we spread our shawls and sleeping-bag sheets, whilst for pillows a rucksack and a camera suffice. With an umbrella opened, by way of screening off the night breeze that pierces the crevices at our head, and a bright fire blazing at our feet, we sleep the sleep of the satisfied.

On the following day a stiff march of 12 hrs., including a halt at the lower camp, to pick up the rest of our baggage, took us into Hashiba once more. Near the top of the Tokugo-tōge, on the western side, the little dog our hunters had with them fell foul of a *ten* (*Anglice*, oddly enough, 'marten'), and, after a sharp tussle, slew him. It was within two or three miles of the same spot that, the year before, our party disturbed a magnificent eagle in the act of devouring another animal of this species, but none of our hunters was a sufficiently good shot to bring down the monarch of birds as he wheeled his flight away towards the top of the opposite hills across the valley.

II. HODAKAYAMA.*

In August 1893, towards the close of another summer holiday, I again found myself at the Tokugo hut, unfortunately without either of my former cheery companions, but piloted by a couple of sturdy hunters from Shimajima, having, as the object of my visit, the first ascent by a foreign traveller of Hodakayama, the loftiest granite peak in Japan.

Some of the lower ridges of the mountain seem to have already been climbed by the hunters who come for the chamois which are to be found in the neighbourhood, but on one occasion only had the highest point been reached—just a fortnight before my coming—the successful climber being a Rikugunshō (War Office) surveyor, whom I met at Furōtaira, on my way up the Tokugo-tōge. He had a terrible fall near the summit, and, after being carried down the mountain by his guides, and taken over the pass to Furōtaira, was resting there to recover from his injuries.

My leading guide, Kamonji by name, a curious-visaged, sturdy little fellow, had found the way up for him, and I considered myself fortunate in securing his services. On arriving, in the afternoon, at the hut we found one of its two, now rather dilapidated, rooms tenanted by several peasants, who had driven over from Matsumoto a small herd of cattle, for the sake of the pasturage that is to be found more readily here in the lofty valleys than in the sun-scorched plains 3,000 ft lower down. These gave us a cordial welcome, but could offer nothing more, as they had barely enough for their own subsistence in the way of food, though I managed to obtain the loan of a *futon* (thick cotton quilt) for the night.

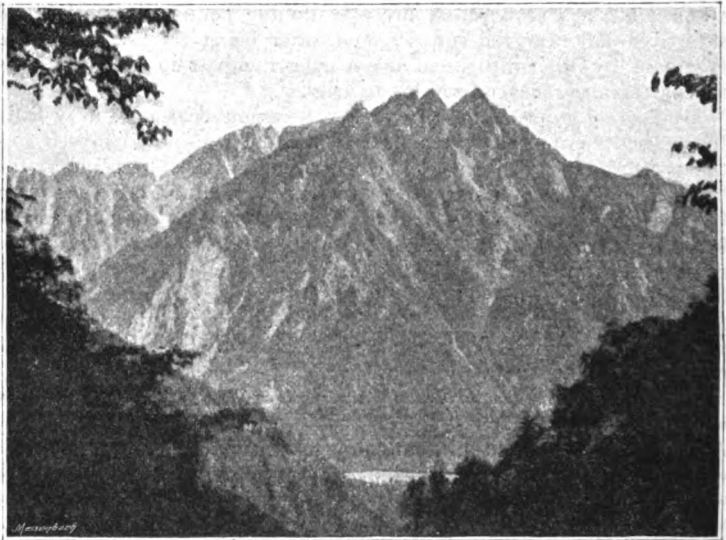
As Kamonji had a private 'hunting-box' of his own (really a shanty built of branches and bark) on the opposite bank of the Adzusagawa, I allowed him to go over to spend the night there, on condition that he should be back at the hut in readiness to start with me at daybreak as the accounts he gave of the difficulties of the ascent of our peak were such as to make it evident we should need all the daylight we could get.

The morning broke dull and chill, but I breakfasted and packed early, and only awaited my guides' arrival to be on the move. Kamonji and his companion, however, were nowhere to be seen, and a couple of hours or more dragged slowly by before the stunted form of the sturdy little guide was observable pushing through the

* Hodakayama, or Hodakadake (*yama* and *dake* being the same), has also another name, Myōjindake, which means 'the Mountain of the Illustrious God.' Whilst the former is the geographical and, so to speak, *secular* name the latter has a *religious* signification. The one refers to the shape of the peak (cf. p. 239), and the other to the Great Spirit whom the hunters, who almost alone set foot on it, believe to dwell there. Hodakayama is the only name, however, marked upon the maps of the Japanese Government Geological Survey. The accompanying photograph was merely a snap shot in the early morning, taken by a 'detective' camera, and gives no fair idea of the fine position and proportions of the peak.

trees on the right bank, and carefully making his way across the ford towards the hut. On his arrival I enquired why he had not appeared at sunrise, according to agreement. 'Oh,' he replied, 'the weather looked too threatening, and I thought the climb couldn't be done if it were wet.' He also talked of the Yarigatake expedition as mere child's play compared to this, and averred that we should certainly be benighted, and have to sleep out on the rocks, if we were rash enough to make the attempt.

However I insisted on trying, believing that, as I had often found to be the case in other instances, the guides' estimate of the perils and difficulties of the ascent would prove to be an exaggerated one. After some time had been wasted in useless argument the leader gave in,



HODAKAYAMA FROM THE TOKUGO PASS.

and at 7.45 A.M., taking in my rucksack plenty of food and some extra clothing, in case of emergencies, we started off for the mountain. Crossing the Adzusagawa at the ford, we quickly sped through the lower part of the forest which covers the level ground on its right bank, and, after half an hour's walk up the valley towards the Yokoōdani (on the way to Yarigatake), a sudden turn westwards brought us to the mouth of a small mountain torrent, hidden in the denser trees at the E. base of Hodakayama, which now towered above our heads in all its majesty.

Judging by the extraordinary way in which Kamonji forced the pace as he led through the forest, regardless of obstacles, which were indeed both many and various, it was quite evident he had no intention whatever of spending the night on the inhospitable cliffs of

Hodakayama. There was no path of any kind, and we had to cut or push our way through as best we might; and whether Kamonji went hard in the hope of tiring out his travellers, or of only ensuring a timely return, I am not quite certain, though he evidently hoped at first that the attempt to continue the climb would not be finally persisted in. However, I thought the best plan was to follow the example of Uncle Remus's friend 'Brer Rabbit,' to 'lie low and say nuffin;' so on we went, now plunging through the icy cold water of the torrent, again jumping from boulder to boulder or scrambling over the fallen tree trunks that often barred the way when we had to take to the banks. A good deal of trouble was caused by the closely interlacing undergrowth, whose cord-like creepers would persist in turning themselves round the ankles of the unwary one, greatly to his confusion. Sometimes the leader had to cut through the undergrowth or lop off an overhanging bough with his great knife—a welcome diversion, however, this, for the person in the rear of the caravan, since it afforded both breathing time and space for reflection on the novelty of a situation which seemed to promise developments more interesting than anything I had yet witnessed.

After an hour or so of this work we emerged from the denser part of the forest, near whose upper limits we were able to part with the stream; but then came a tiresome struggle through a stretch of bamboo grass, wet with the early morning rain, a good deal of which transfers itself at every step to our clothing and persons. Long before this stage, however, we had got thoroughly soaked, so we pushed on regardless of more moisture until we found the going better on a long scree stretching down from the base of the broken cliffs in front. Here we halted a few minutes for food, and shortly after resuming our climb I suddenly became aware of a familiar scent, suggestive of an English fruit garden, but quite foreign to those of Japan. What the fragrance came from for a little while I could not discover, until at a short distance higher up I found myself face to face with a clump of black currant bushes. The find was as welcome as it was surprising, and the spot was not left until I had indulged in a satisfying feast. I was already aware that this plant had been introduced from abroad into Japan, although, except in the north, in the neighbourhood of Hakodate, it rarely flourishes for any length of time; but this proved to be the first occasion on which the black currant has been found growing wild in this country, as is known to be the case in some parts of Russia. The altitude at which I found it growing was about 7,500 ft., and further on I also fell in with wild raspberry bushes bearing a magnificent-looking fruit, quite the finest of the kind I have met with in Japan. The sweetness of the berry, however, was by no means proportionate to its size, as it was distinctly inferior to two other slightly different varieties I found in adjoining valleys.

On getting clear of the bushes and undergrowth beyond the forest the impracticable nature of the cliffs above us forced us across the scree to the right, after traversing which we found ourselves on the crest of a sharp ridge up which we climbed above the western side of a small pool. Looking over this ridge we saw that far beyond us

stretched a mighty couloir that ends on the right in a precipice over the edge of which a cascade, fed by the snows far above, falls with sullen roar, whilst its upper end, to the left, gives access between walls of wild cliffs to the main arête of the mountain. In order to reach the couloir we had to surmount the ridge and pass across the face of a nearly perpendicular wall of rocks, where the only hand-hold was afforded by the creepers and ferns that grew in the crevices. As we started across this Kamonji, whose face had now assumed a somewhat anxious look, turned round to me and asked, 'Can you do it? It needs *great care.*' Reassured by the reply he proceeded, and after an exciting scramble we descended into the couloir and turned our faces eastward towards the final ridge. A rapid climb up some big loose rocks led us, at 10.30, to the base of an overhanging cliff on the right, where we halted half an hour for another breakfast, for hard work made us hungry amazingly soon.

Resuming our climb over broken, but firm, slabs of granite, we reached the first snow-slope at 11.30, at an altitude of rather under 9,000 ft., the inclination of the slope being about 40°, the steepest angle at which I have found snow lying in summer on any of the peaks or passes I have been on in Japan. After a few hundred feet of this we were again able to take to the rocks, and from here to the summit was the most enjoyable part of the whole ascent. The rocks were firmer, larger, and steeper than any we had yet had to climb, and it was a real pleasure to be obliged to put forth one's best energies in overcoming the obstacles before us. At 12.45 we were actually on the arête, and as Kamonji pointed excitedly to a huge rock pinnacle to the right he exclaimed exultingly, 'Ah, there's the top! we shall soon be on it.' 'But *that* can't be the summit,' I objected. 'Look at the tower over there on the left; that must certainly be higher.' 'Wait a moment, then, whilst I go and see,' answered Kamonji, and turning the corner at the foot of the pinnacle on our right he climbed quickly up and out of sight to reconnoitre. In a few minutes, however, he was scrambling back, with monkey-like agility, to where I stood, acknowledging, as he rejoined me, that my surmise was correct; so, without further delay, we applied ourselves to the remainder of our task. What a grand scramble it was, and the appropriateness of the name Hodakayama ('the Mountain of the Tall Ears of Corn') is all the more apparent when once one gets up among the great *gendarmes* or pinnacles of rock, that rise at intervals from the main ridge.

The summit was finally gained at 1.15 P.M., or 5½ hrs. from the start; but unfortunately the clouds which rolled in ragged masses round the top prevented one from enjoying what must be undoubtedly, next to that from Yurigatake, almost the finest view of the interior of Japan. Occasionally the grey curtain would part for a moment, and a glimpse of Asama Yama, of the plain of Matsumoto, or of the long serrated outline of Ontake's volcanic ridge would show itself. As the mountain is so similarly situated, and so near to Yurigatake, one could form a fair idea of the prospect it affords. But a cold wind was blowing from the S.E., and the ragged state of my nether

garments, now hanging partly in ribbons about my legs, and fluttering wildly in the breeze, made a long stay undesirable, especially as we had arrived thoroughly soaked through by the rain in which we had been climbing for some hours until shortly before the end. On the top, driven into a cleft in the rocks, I found a little stake, a memorial of the visit of the Rikugunshō official two or three weeks before. As I looked down the rocks where his fall took place it seemed almost incredible that he should ever have survived, and the only wonder was that the aforesaid stake had not also been requisitioned as a monument of his destruction as well as a token of his triumph. The main mass of Hodakayama is composed of a very hard, close-grained granite of a dark colour, and the height of the loftiest peak I made, by the R. G. S. mercurial barometer I carried, 10,150 ft. The appearance of the precipitous depths and snow-filled gullies, above which rose so steeply the jagged masses of granite, was wild and desolate in the extreme, more especially on the western side of the main ridge. Leaving the top at 1.45, we descended quickly until we reached the foot of the cliff under the shelter of which we had stopped for breakfast on the way up, and while again resting here for a similar purpose I noticed a cloud of small flies hanging about, which immediately upon our arrival began to pester us unmercifully, and continued to do so for several hours afterwards, several times getting into our eyes at such inconvenient moments as to almost cause serious disaster. The guides told me these insects are particularly fond of worrying the chamois found on these peaks, and that it is usually near the haunts of those animals that they are to be found.

As far as the pool to which I have already referred our line of descent was the same as that we had taken on the way up; but here we changed our course, bearing southwards, so as to avoid the descent down the torrent bed, and also to make a more direct course for the sleeping-tent. Down the loose rocks we went—vivid and unpleasant reminders that they are of the tiresome moraines of Alpine glaciers—and then through the tangled undergrowth and dense bamboo grass until the more level ground of the forest was reached, so that the lower we got the higher our spirits rose, and we began to congratulate ourselves on a successful issue to our expedition. However, as I think a French proverb puts it, 'it isn't well to whistle until you are out of the wood,' we now learned by reason of a remarkable diversion that happened. Kamonji had just stopped to make some remark to me about a fallen tree trunk that lay in our way, when, to my amazement, his whole appearance, without a moment's warning, suddenly underwent a most extraordinary change. Instantaneously his face assumed the aspect, and his form the attitude, of one of the *Ni-ō*, the guardian demons with which travellers are familiar who have visited the great shrine of Iyeyasu at Nikkō.

Even at ordinary times Kamonji's features are odd-looking enough, but on this occasion they were transformed into the likeness of those of a being from another world. On my hurrying up to learn what this strange transfiguration meant, he began to leap about in the wildest manner, and my first idea was that he might have gone mad at some

sudden thought of our having insulted the spirit of the mountain by the intrusion of a foreigner within his sacred fastnesses. So for a moment I prepared myself to resist an onslaught from the hunter, but the next instant I found out that the real danger was from quite a different quarter, an attack against which resistance seemed almost hopeless. For Kamonji had stepped upon a wasps' nest, and the creatures were just rising in their fury as I approached him! The tight-fitting, tough, hempen garments my companion wore protected him fairly well from the pitiless onslaught, but the great gaps in my thin flannel knickerbockers and the exposed condition of my neck and arms offered a grand field for their operations, and in a few seconds I found myself the selected target of ten or a dozen stings. Only by dint of much painful self-flagellation, aided by well-meant violence on the part of Kamonji, was any relief obtainable, though I still continued, at intervals, to receive from various hidden corners of my nether garments painful proofs of the presence of the foe. I was reminded of the condition of Mark Twain's friend in the 'Tramp Abroad,' where on a memorable occasion an unpleasant experience on the part of Harris reduces him to a sad condition, so graphically described—'When the musing spider steps upon the red-hot shovel he first exhibits a wild surprise, and then shrivels up.'

It was some little time before we could well move on, and the incident served as a vivid illustration of the Japanese proverb which corresponds to our own saying that 'troubles never come singly.' The proverb in question runs, '*Naku tsura wo hachi ga sasu*'—i.e. 'It is the weeping face that the wasp stings'—and seeing that but a few minutes before I had been mourning over the huge rents in my clothing, and the loss of the heel of one of my boots, which had been torn clean off during the rough descent of the broken rocks, the Japanese rendering of the old adage seemed to hit off the situation with singular appropriateness.

Shortly after leaving the scene of this disaster we reached Kamonji's shanty, called 'Miyagawa no Koya,' picturesquely situated close to the still waters of a secluded mere, whose glassy surface mirrors the form of the giant cliffs at the foot of which it nestles so securely. Crossing the river ford again, we reached the Tokugo hut at 6.15, our expedition having occupied but 10½ hrs. from start to finish.

Both for variety and interest it stands out in my memory as the finest scramble I have had on any single peak in the 'Land of the Rising Sun.'

Not that the interest of that day's doings by any means ceased with the conclusion of the climb, for the most curious experience was yet to come.

On our return to the hut Kamonji had a good deal to say about our adventures, especially with regard to the wasps, which in more ways than one had produced such an impression upon us both. Amongst the various remedies suggested for my wounds was the employment of *kuma-no-i*, or bear's gall, said to be an infallible cure for the stings. No bears, however, being handy, and as I could not well wait until the winter hunts began, something else had to be done, and one of the

Japanese of my party conceived the idea of remedying the deficiency in a manner as novel to me as it was unexpected.

I was standing by the fire in the middle of the hut, busily hanging up wet garments to dry, when Nakazawa, the person in question, came in and said, 'Will you kindly tell me where the wasps stung you?'

Pointing out the wounds on my legs, neck, and arms, I took no more notice, and went on with my drying operations. At length, to my astonishment, I saw that Nakazawa was solemnly engaged in making a series of mesmeric passes over the injured parts, at the conclusion of which he went to the door of the hut, turned his face towards the sombre, precipitous cliffs of Hodakayama, now wrapped in the dark shadows of night, and then, clapping his hands together before his face, as the Japanese always does when wishing to attract the attention of the object of his worship, he bowed his head in an attitude of prayer. As soon as his orisons were over he once more clapped his hands, and then returned to where I stood with the remark, 'This is what is called *majinai*' (i.e. exorcism); 'you will be all right in the morning.'

As a matter of fact, though the severe pain caused by the stings effectually prevented me from sleeping much that night, the inflammation had sufficiently subsided by morning to allow me to get over the Tokugo-tôge to Hashiba and Matsumoto in good time. The strange incident, however, led me, on my return to Kôbe, to enquire into the curious practices of this kind, of which, though they are widely spread amongst the Japanese, so very little is known to foreign residents. The result has been truly astonishing: for there are varieties of 'hypnotic' phenomena, exorcisms, *et hoc genus omne* known and practised to an extent such as scarcely any one but the people themselves has any conception of. Indeed, to describe all in detail would need more than the space of a large volume, though I hope elsewhere to be able to record what is more particularly connected with the mountains and the country folk who dwell within their shadows.

And so for another year I had to bid good-bye to the Alps of Japan, whose beautiful peaks and valleys it almost seems as if Ruskin must have had in mind when he wrote, 'How many deep sources of delight are gathered into the compass of their glens and vales; and how, down to the most secret cluster of their far-away flowers, and the idlest leap of their straying streamlets, the whole heart of Nature seems thirsting to give, and still to give, shedding forth her everlasting beneficence with a profusion so patient, so passionate, that our utmost observance and thankfulness are but, at last, neglects of her nobleness and apathy to her love.'

NEW EXPEDITIONS IN 1894.

[Contributors of 'New Expeditions' are requested to observe the following rules:—(1) To forward their accounts in the form in which they are to appear. (2) To prefix the name of the peak or pass from the best map, and the altitude both in mètres and feet in a parenthesis after the name. (3) To give the date of the ascent, and the names of the party. (4) To give exact references to any previously published descriptions of allied routes to which they may have occasion to refer. (5) To write the description with the best existing map before them, and to quote the figures of any measured point their route may touch. (6) To use always the points of the compass instead of the misleading words 'right' and 'left.' (7) To record their 'times' exclusive of halts. (8) To make their descriptions as brief as possible consistently with the above considerations. (9) To write on one side of the paper only, leaving a large margin, and to begin a new sheet for each expedition.]

Dauphiné District.

POINTE DE LA MUANDE (3,319 m = 10,890 ft.); SOMMET DES ROUIES (3,634 m. = 11,923 ft.) BY THE S. ARÊTE. *July 18.*—M. Auguste Reynier, with Maximin Gaspard and Joseph Turc, made both these climbs for the first time. Starting from La Lavey, the party followed the usual route to the Col de la Muande till within 5 or 10 min. of that pass, and then ascended the Pointe de la Muande in 1 hr. Descending on the N. side of this peak to a snowy gap, they gained the base of the S. arête of the Rouies in 20 min. from the top of the Pointe. Thence they climbed up the S. arête direct to the cairn on the summit of the Rouies (2½ hrs.). The descent to La Bérarde was made by the ordinary route.

Eastern Graians.

TOUR DU GRAND ST. PIERRE, BY THE W. RIDGE (3,692 m.=12,113 ft., Italian map; 3,697 m. = 12,130 ft., Paganini). *August 19.*—Messrs. P. E. Lord and G. Yeld, with François and Sylvain Pession, of Val Tournanche, having reached the Col Monei in 3 hrs. 55 min. from the Monei huts, made what is believed to be the first ascent of the St. Pierre by the W. ridge. The climb from the col to the summit took 5 hrs. 16 min., very brief halts included. There are many towers on this arête (separated by curving snow ridges), some of which were climbed, others turned. The party passed close to the top of the Pic du Retour,* though not actually over it. Through anxiety to avoid Messrs. Pendlebury's route † they kept afterwards too much to the right, and made the last bit of the ascent (very difficult) from the S. They descended by a variation of the usual route by the N. ridge (which was harder than usual), suffering much from a fierce wind, to the col between the St. Pierre and the Tour St. André, and then by the rocks to the right of the col, and over a big bergschrund reached the Glacier de Monei. This descent from the col is probably

* See *Climber's Guide to the Mountains of Cogne*, p. 71.

† See *ibid.* p. 70; *Alpine Journal*, vol. viii. p. 102.

new; it is certainly the easiest way of getting off the mountain. (This route was followed a few days later by Messrs. F. W. Oliver and Hiatt C. Baker, with Alexander Burgener.) The party descended by the Col Monei to the Piantonetto refuge, having been out 18 hrs. 7 min., of which 2 hrs. 6 min. was spent in halts.

LES JUMEAUX DE LA ROCCIA VIVA, W. PEAK (3,618 m. = 11,871 ft., Paganini). *August 21.*—Mr. G. Yeld, with François and Sylvain Pession, of Val Tournanche, made the first ascent of this fine peak. They left the Piantonetto refuge at 4.45 A.M., going round the Monte Nero spur to the Roccia Viva glacier. At 7.15 they reached the big rock under which they had sheltered from the thunderstorm in 1893, where they breakfasted. They reached the summit at 10.45, after an arduous climb, not unattended with risk. One piece about 45 min. from the top was very difficult. The day was splendid, but the wind on the summit cold. After a halt of 15 min. they went down in 20 min. to the col between this peak and the Roccia Viva, over difficult rocks plastered with snow in places, and there halted for lunch. Leaving at 12, they descended on the very edge of Messrs. Coolidge and Gardiner's couloir* (this year well grooved by stones in its centre), as near the rocks as possible, and sometimes upon them. When they had passed the big rock shelter before mentioned they raced on to the glacier, crossing two bergschrunds on the way, as hard as possible (for fear of stones), and reached it at 12.45—*i.e.* in 45 min. very fast going from their lunch place. They descended to the refuge by the Bocchetta di Monte Nero, and arrived at 2.5 P.M. Approximate halts during the day, 2 hrs. The eastern peak (11,776 ft., Paganini) was ascended by the same party in 1893. †

PUNTA LAVINA, N. SUMMIT (3,273 m. = 10,739 ft., Paganini's map); S. SUMMIT FROM THE N. (3,308 m. = 10,854 ft., Italian map). *August 25.*—Mr. R. S. Mushet, with Gabriel and Joseph Taugwalder, made the first recorded ascent of the N. Summit, and a new route up the S. Summit of this peak. Starting from the Col des Eaux Rouges, the party followed the N.E. arête to the top of the N. Summit, descended to the gap between the two summits, and gained the S. Summit by means of the broken rocks on the E. face or slope.

In the 'Cogne Climber's Guide,' p. 36, lines 1 and 2, transpose the words 'N.' and 'S.'

COL DE L'ABEILLE (3,852 m. = 12,640 ft., Paganini's map). *September 3.*—The same party effected what seems a new descent from this pass to the Noaschetta glacier, climbing down the rocks under the Cresta Gastaldi in an easterly direction.

Mont Blanc District.

COL DES COURTES. *August 2.*—Messrs. G. Hastings, and A. F. Mummery, and Dr. J. Norman Collie left the Chalet de Lognan at

* *Climber's Guide to the Mountains of Cogne*, p. 76; *Alpine Journal*, vol. xiv. pp. 484-5.

† *Alpine Journal*, vol. xvi. p. 508.

12.40 A.M., and reached the foot of the steep slopes leading up to the pass at 5 A.M. The bergschrund proved very formidable, but this obstacle being passed, a rib of rock on the 'Courtes' side of the ice wall afforded a fairly easy way to the ridge (8.45). The traverse of this ridge to the point where it is lost in the upper plateau of the Glacier des Courtes occupied rather more than an hour. Owing to numerous halts the Col de Triolet was not reached till 10.30. The descent to Courmayeur was made by the usual Col de Triolet route.

COL SUPÉRIEUR DU TOUR NOIR. August 16.—The Rev. A. C. Downer, with François Mugnier and H. Schuler, started from Lognan at 3.30 A.M., reached the foot of the rocks S.W. of the Améthystes glacier at 5.55 A.M., halted for breakfast at some water at 7.40 A.M., and reached this pass at 10.40, or in about 6 hours' actual walking. Many crystals were found en route. This seems to be the first time that this pass has ever been attained. A snowstorm forced the party to descend by the same route, after building a cairn. Later, from the Col des Essettes ridge, they saw that the ascent to the pass on the E. side did not present serious difficulties.

COL DES ESSETTES. August 23.—The same party left the new Saleinaz Club hut at 8.10 A.M., and crossed the Col de Planereuse (3,063 m.) to the Planereuse glacier. They went round the head of this glacier, neither ascending nor descending very much, but preserving the contour lines on the Siegfried map, and crossed the ridge between the Planereuse and Darrei glaciers probably at a point which is just E. of the 'i' in the word 'Darrei' on the Siegfried map (a route taken on August 10, 1893, by Monsieur H. Rieckel, with G. Coquoz and Pierre Dévouassoud, on their way up the Darrei). Crossing the head of the Darrei glacier they then reached (c. 1 P.M.) a point on the rocky ridge between the Darrei and La Neuva glaciers, which may be called the *Col des Essettes*, as this ridge has never been previously crossed by a traveller at any point. The exact position of the new pass cannot be precisely fixed, but possibly was that marked 3,222 m. or that marked 3,124 m. on the Siegfried map, the uncertainty arising from the fact that the party were unprovided with this map. Threatening weather forced them to abandon their scheme of attaining the Col Supérieur du Tour Noir from the E., so from the pass they went down the rocks in a direction following the course of the glacier, keeping the La Neuva glacier on their right, later descending to the glacier, and so reached the level of the Ferret valley.

Grand Combin District.

PETIT MONT FORT (c. 3,100 m. = 10,171 ft.). July 9.—From the foot of the S. face Messrs. E. F. M. Benecke and H. A. Cohen climbed steep but easy rocks in $\frac{3}{4}$ hr. to the top. This whole face is rock, not partly snow, as shown on the map; the peak, too, is a double-headed rock peak, not a snow hump. From the top down to the col 3,026 m. took $\frac{1}{4}$ hr. over easy rocks; from there to the lake, down a shale couloir, 20 min. more.

The history of the peaks S. of the Mont Fort is as follows:—

Bec d'Aget (2,983 m.).—Apparently easy to ascend from the side of the lake and from elsewhere, but apparently not climbed.

Bec des Rozes (3,225 m.).—A fine double-headed rock peak, with a stone-man on each summit.

Due S. of the above is a very marked rock needle, not shown on the map.

Then, due S. again, is the *Bec Termin* (3,052 m.).*

POINTES DE TORBESSE (3,050 m. = 10,007 ft.).—These are three in number, two close together and of nearly equal height, the third some way along the ridge to the S.W. This last is a curious rock needle, a good deal lower than the other two, but a striking object from the Sevreu Alp.

On July 10 Mr. E. F. M. Benecke went from the Sevreu Alp over grass and shale in $1\frac{3}{4}$ hr. to the W. foot of this peak, and climbed pretty straight up the rocks, which are decidedly interesting, in $1\frac{1}{2}$ hr. to the top. He descended the S. face by rocks and a shale couloir in $1\frac{1}{2}$ hr. to Le Crêt, reaching Fionnay in $1\frac{1}{2}$ hr. more.

On July 12 the same gentleman, with Mr. Cohen, went from the Sevreu Alp over grass and débris in 2 hrs. to the col between the Pointes de Torbesse and the point 2,960 m. From there the party walked over snow and a few rocks in $\frac{1}{2}$ hr. to the top of the highest Pointe de Torbesse.

From here they went over snow, keeping always a little on the N. side of the ridge, in 1 hr. 20 min. on to the W. ridge of the *Parrain* (3,262 m. = 10,702 ft.), getting to the top of the latter in 10 min. more. They descended by the S. face over débris, and reached Fionnay, *via* Le Crêt, in 2 hrs. 40 min. Between the *Parrain* and the *Rosa Blanche* there are at least three distinct peaks; all, however, looked quite easy.

PETIT MONT CALME (3,229 m. = 10,594 ft.). July 13.—The same gentlemen went from Fionnay to the last rocks below the Col de Cleuson in 4 hrs. 5 min.; from there over snow, in $\frac{3}{4}$ hr., to the S. foot of the *Petit Mont Calme*, and then up by the S. arête (a good climb) in $1\frac{1}{2}$ hr. They descended by the easy N. arête in 50 min. to the col between the two *Monts Calme*, and from there reached the Col de Cleuson in 20 min.

The *Petit Mont Calme* seemed easily accessible over débris on the W. face; the E. face is very steep. The *Grand Mont Calme* (3,211 m.) seemed accessible either from the S. or the W.

MONT GELÉ BY THE S.E. RIDGE (3,517 m. = 11,539 ft.). July 16.—The same gentlemen went from Chanrion over the *Crête Sèche* glacier in $2\frac{1}{4}$ hrs. to the foot of a broad couloir on the N.E. face of the *Mont Gelé*, and mounted by rocks in 1 hr. 5 min. to the frontier ridge. This they followed (on rocks practically the whole time) over the top of a lower peak to the top of the E. summit in 1 hr. Here they turned down on to the snow on the Italian side, and reached the main summit in about $\frac{1}{2}$ hr. This route is no doubt longer than the ordinary

* *Alpine Journal*, vol. xvi. p. 63, and *Echo des Alpes*, 1891, pp. 45-8.
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one, but, when the snow is bad, it is decidedly drier. People with time to spare might follow the ridge all the way to the W. summit.

LA SERPENTINE FROM THE S. (3,691 m. = 12,116 ft.). *July 17.*—The same gentlemen, as soon as they had reached the top of the Breney icefall (3 hrs. 40 min. from Chanrion), bore due N. up a pretty steep ice-slope (about 1 hr.'s step-cutting), and then up steep but easy rocks, varied by a short snow-slope, straight to the top (1 hr. 35 min.). They then followed the N. ridge over or round several little snow-peaks down to the Col de la Serpentine in 1 hr. 20 min.

COMBIN DE ZESSETTA (4,078 m. = 13,380 ft.). *July 21.*—The same gentlemen from the upper plateau of the Corbassière glacier went S.E. over the face of the Grand Combin, striking the arête just E. of the snow hump 4,080 m., and following thence a broad snow ridge to the top (2 hrs. 35 min. in all). The descent by the same route took 55 min. There are no difficulties, but there is of course a certain amount of danger from falling ice.

Arolla and Valpelline Districts.

DENTS DES BOUQUETINS, SOUTH PEAK (3,690 m., Swiss map; 3,691 m., Italian map = 12,110 ft.). *July 18.*—Mr. Alfred G. Topham, with Jean Maître and young Pierre Maurice, made the first ascent of this peak. Having on several occasions attempted the ascent on the Swiss side from Arolla, they determined to try the Italian face, the upper part of which had always looked to them impracticable. For this purpose they slept at the Stockje and crossing the Col de Valpelline arrived under the east face of the mountain at 5.20 A.M. From the glacier there appeared to be two chimneys leading up to the last rocks, the one S.W. and the other N.E. of the peak, the former apparently the more direct. The lower part of the ascent was made up an easy rock staircase for one hour. Here it was seen that the S.W. chimney would not go, so they made for the N.E. one, and ascended it for $\frac{1}{4}$ hr., until they were forced on to the rock wall on their right. They ascended straight up this to the main arête N. of the peak at a point a quarter of the distance between the S. peak and the point on the arête above the couloir gained by Mr. Topham in his ascent of the highest Bouquetins by the S. arête.* The E. face of the mountain is exceedingly steep, and does not resemble the W. face, which slopes away in snow and smooth rocks from the top of the ridge to the Arolla glacier. From here they followed the arête to the top of the S. peak in $\frac{3}{4}$ hr. (10 A.M.). They left again at 11 A.M. and descended by the same route as far as the chimney (1.30). Starting again at 2.15, they crossed the chimney and traversed on to a narrow ledge of rock and snow which runs under the rock wall of the peak above the easier rocks: this ledge leads on to the main S. arête of the S. peak at a 'plateau of loose stones' and snow mentioned by Mr. Barnes in his paper on an attempt on this peak in 1886 † (3.30). From here they descended the arête to the 'band of snow' mentioned by Mr. Barnes, and then straight down the rocks to the N. of the conspicuous

couloir running up from the Glacier de Za de Zan and S. of the spur marked 3,097 on the S. map (5 P.M.). This route Mr. Topham had ascended on two previous occasions, on both of which he crossed over the point reached by Mr. Barnes's party into the big depression on the arête to its N. An outline sketch of this range accompanies the paper written by Mr. Barnes.* Mr. Topham's party reached Arolla at 7.25 P.M. This peak bears the local name of the Aiguille du Midi.

MONTE CERVO (3,430 m. = 11,253 ft., Italian map); COL BETWEEN THE RAJETTE (Swiss map) and THE BEC DE CIARDONNET (3,347 m., I. map; 3,398 m., S. map), about 11,000 ft. July 20.—The same party made these two expeditions. The position of the peak, well detached from the main chain, makes it a fine point of view. The party left Arolla at 2 A.M., and crossed the Col de la Vuignette and the Col de Chermontane. They descended the Glacier d'Otemma until they came under the rocks of the Tourme de Bouque (8.45). They crossed by these on to the névé above the ice-fall of the lateral glacier which descends from between the Gran Epicoun (I. map) and the Becca Rajette (I. map) or Bec d'Epicoun (S. map). They crossed this glacier and ascended to and crossed a minor col (10 45) between the Jardin des Chamois and the Becca Rajette. This col brought them on to the lateral glacier which leads to the Col de Ciardonnet. They crossed under the W. face of the Becca Rajette (12.30) and ascended a wall of ice and rocks to the col (2 P.M.). This col lies to the S.W. of 'the Rajette' of the S. map,† and is at the head of the névé of the Ciardonnet glacier. It is proposed to call it the COL DE LA RAJETTE. The party left the col at 2.30 P.M., and circled round the head of the glacier until they could ascend on to the N. arête of Monte Cervo. This they ascended (3.45). They left the summit at 5 P.M. by the same route, and regained the névé. The long ice-fall of the Ciardonnet glacier was easily turned by the avalanche snow and rocks on its left bank. A final descent over moraine brought them to the Verdecampe glen at the point where the Col de Ciardonnet route diverges. Bionaz was reached at 8 P.M.

The Monte Cervo had been previously ascended in August 1892 by MM. L. Kurz and H. Rieckel, with Justin and Joseph Bessart, of Chables. From the Bec d'Epicoun (3,527 m., S. map) they went up the Cervo by its easy snowy N. arête, which does not start from the Bec itself (as wrongly figured on the I. map), but from the point marked 'Rajette' on the S. map.‡

BECCA DES LACS (3,412 m. = 11,195 ft.); AIGLE ROUGE (3,037 m. = 9,964 ft.). July 23.—The same party made the first ascents of these points, which are prominent objects in the view from the Col du Mont Collon. They left Prarayé at 3.40 A.M. and ascended the Comba d'Oren for 1 hr. Thence they ascended steep grass slopes, always working to the S., and a final $\frac{1}{4}$ hr. straight up brought them to a

* *Alpine Journal*, vol. xiii. p. 529.

† Conway's *Central Pennine Guide*, p. 28.

‡ *S.A.C. Jahrbuch*, vol. xxviii. p. 398, and *Schweizer Alpen-Zeitung*, 1893, p. 31.

big buttress descending from the Aigle Rouge. This was ascended to the top in 4 hrs. from Prarayé (7.40). They descended into the small col W. of the peak, and kept along the arête until the summit of the Becca des Lacs was gained (10.20). The party left again at 11 A.M., intending to descend straight down the W. face; but they were compelled to traverse in an easterly direction, and finally descended by an awkward chimney on to the small ridge which lies to the S. of the Lac Mort, unmarked on the Italian map (2.30). Prarayé was regained at 5 P.M.

PUNTA DEL DRAGONE (3,394 m. = 11,136 ft., 3,369 m. = 11,053 ft., and 3,230 m. = 10,598 ft., Italian map). *July 24.*—The same party made the first ascents of these points, which form the northern portion of the Punta di Fontanella ridge, but are unnamed on the Italian map. Punta del Dragone is a local name taken from the lake immediately under the peak on the Valtournanche side.* They left Prarayé at 5 A.M., and ascended the Valpelline to the top bridge, which they crossed, and then ascended the grass for 5 minutes, when a plank bridge was found. By means of this the torrent which descends from the Petit Glacier Bellaza was crossed. Thence they mounted rock and grass slopes to the foot of the broad buttress which is at the base of the W. arête, and marked 2,843 m. on the Italian map (7.40). Crossing over this they followed the rock arête, and finally proceeded for 1 hr. up a snow arête and face to the top of point 3,394 m. (11.15). They followed the ridge to point 3,369, and returning (12.15) descended the E. arête over point 3,230 on to the Col de Bellaza (1.30). Thence they ascended to the Col de Vofrède, and reached Breuil at 6.15 P.M.

L'ÉVÊQUE (3,738 m. = 12,264 ft.) FROM THE S.W. *August 18.*—Messrs. R. A. Robertson and Howard Barrett, the latter having with him Miss Agnes M. Barrett and Mr. Edmund H. Barrett, with the guides Jos. Quinadòz (Evolena) and Alois Tembl (Sulden, Tyrol), made the first ascent, as far as can be ascertained, of l'Évêque from its S.W. side. From the Col de l'Évêque they mounted a small glacier-covered eminence to its N.E., marked 3,393 m. on Siegfried's map. Hence they bore away a little to the left, intending to strike and ascend the great couloir that divides this side of the mountain into vertical halves. Finding the rocks steep, smooth, and iced, they altered their course and ascended directly for a short time, but, no improvement being gained, bore up to the right to gain the arête. This was adhered to for a time, until a rock was reached that looked far more formidable than it proved. It is, perhaps, 30 feet in height, smooth, and of a steep roof-like shape, inclined at an angle of not less than 45°. One climbs along its ridge, where there is but little hand- or foot-hold. Just after this the way led a little on to the S. face, and to a curious traverse along a narrow ledge under a more or less overhanging rock, very like that near the summit of the Zinal Rothhorn; thence to the top the route is obvious. Time, 2½ hrs.; but it could

* *Alpine Journal*, vol. xvi. p. 265.

be done more quickly by a smaller party, and if the arête were followed from the beginning.

This is a rock climb throughout that can be recommended when the rocks are in good order, as it provides enough difficulty to give interest. Future parties by this route, if any, will be well advised, however, to go by the arête throughout.

Zinal District.

TÊTE DE MILLON (3,698 m. = 12,133 ft.) FROM THE S.W. *August 21.*—Mr. O. K. Williamson, with Pierre Epiney, of Zinal, ascended this peak by the S.W. arête from the Crête de Millon. They left Zinal at 5.23 A.M., and reached the Crête de Millon just N.E. of the point 3,216 m. (Swiss map) at 8.28 A.M. From this they again started at 8.55 A.M., at first keeping on the crest of the arête and then traversing slightly below the crest on its N.W. face, to avoid several gendarmes. There was some fresh snow on this face, which in places is exceedingly steep, and care is necessary, as the rocks slope the wrong way and are loose. Half an hour below the summit they were again able to take to the crest of the arête. Halted 25 min. to photograph, and reached the summit at 11.55 A.M. Left the summit at 1.20 P.M. Descended by the ordinary route to the Col de Tracuit (reached at 2.20 P.M.); regained Zinal at 4.25 P.M. The S.W. arête affords most interesting climbing.

Monte Rosa District.

DOM AND TÄSCHHORN IN ONE DAY.—On July 26 Messrs. R. Corry and E. J. Garwood ascended the Dom and Täschhorn in one day for the first time. Mr. Corry writes—

‘We left the Dom hut at 2.36 A.M., and reached the top of the Dom at 7.11. We took to the arête at 7.17, and got two-thirds of the way to the Domjoch without any difficulty in an hour. Here we were detained 20 min. by a gendarme which had to be climbed over, and we reached the Domjoch at 9.18, after two traverses on the E. side over very rotten rocks. Mr. Conway’s estimate that we should require two hours to reach the Domjoch was, therefore, singularly accurate. After halting 20 min. on some rocks just above the pass, we got to the top of the Täschhorn at 10.37. The ridge throughout was in very good condition, and we did not find the climb at all difficult. The descent of the Täschhorn by the ordinary route in thick mist and snow was much more troublesome, and though we left at 10.46 we were not over the bergschrund till 2.15 P.M. We crossed the bergschrund by the aid of a spare cord fastened over an alpenstock and ice axe which were left last year. The mist was so dense that we were never able to see the other side from above, and of course we could form no opinion as to whether the bergschrund could be more easily crossed elsewhere. We reached Randa at 7.40, having halted 40 min. on the descent. The times were as follows: 4 hrs. Dom hut to Dom; 2 hrs. Dom to Domjoch; 1 hr. Domjoch to Täschhorn; 8 hrs. Täschhorn to Randa—all exclusive of halts. Our guides were César Knubel and Roman Imboden.’

Lepontine Alps.

UNTER SCHIENHORN (2,904 m. = 9,528 ft.). *June 18.*—Mrs. and the Rev. George Broke, with Adolf Andenmatten, turned N. from the Geisspfad path at a point about 10 min. above the upper Messern hut, passed over the knoll marked 2,152 m., and crossing the Lengbach followed the whole length of the W. arête of this peak to the summit in 2½ hrs. No trace of any previous ascent could be found, and at Binn the peak was said never to have been climbed. In the descent the arête was followed for 20 min., and then the party descended on to the N.W. slopes, then covered with snow, and always bearing to the W. regained the Geisspfad path at Lochji in 1½ hr. from the top.

HÜLLEHORN (3,186 m. = 10,453 ft.) FROM THE S.—*August 11.* Mr. J. A. Luttman-Johnson, with the guides Augustin Gentinetta and Franz (Weisshorn) Biener, starting from Berisal, effected the ascent of this peak by a route distinct from any of those described in the 'Climbers' Guide to the Lepontine Alps' or in Mr. Coolidge's article in the 'S.A.C.J.,' vol. xxviii. p. 102. Having reached the Steinen Glacier, the party directed their course towards the Bocca Mottiscia, the notch in the frontier ridge between the Bortelhorn and the Punta Mottiscia, crossed the bergschrund at its foot, and cut steps up an ice-slope to the col. Thence they climbed to the Punta Mottiscia (3,156 m.) entirely by the rock ridge, which runs south-west from that mountain. At the Punta Mottiscia they quitted the frontier ridge, which here bends east to south-east, and descended to the gap (Hüllejoch) at the southern base of the Hüllehorn, which, viewed from this side, is an imposing tower of rock. Proceeding for a few steps on the snow to a point directly under the summit they climbed straight up the eastern face, gaining the actual crest a few feet to the south of the cairn. In all previous ascents the final rock tower appears to have been climbed by its northern ridge, but Messrs. Stable and Broke rightly conjectured * that the rocks could be scaled directly.

The party descended from the Hüllejoch to the Steinen Glacier by Messrs. Stable and Broke's route.†

Although the ascent by way of the Bocca Mottiscia and the S.W. ridge of the Punta Mottiscia is circuitous it may be recommended to climbers starting from Berisal as affording an interesting scramble on rocks, and undoubtedly very fine views.

Owing to the frequent halts rendered necessary by the thickness of the mist no times were taken.

Bernese Oberland.

ALETSCHHORN (4,182 m. = 13,821 ft.) BY THE W. ARÊTE. *July 5.*—The Rev. W. A. B. Coolidge and Mr. W. Larden, with Christian Almer, jun., and his brother Rudolf, made what seems to be a new route up the Aletschhorn. Starting from the Ober Aletsch Club hut, they went up the Ober Aletsch Firn till some way W. of the rocks

* *Alpine Journal*, vol. xv. p. 550.

† *Ibid.* vol. xv. p. 550, and *S. A. C. J.* vol. xxviii. p. 103.

marked 2,828 m. (1 hr.). Thence they mounted N.E. up the rather crevassed glacier (many concealed crevasses) which flows from the snowy depression just W. of the Aletschhorn and E. of the snowy hump (E. of the Sattelhorn) named 'Klein Aletschhorn' (c. 3,750 m.) by Dr. Schulz, and so gained the aforesaid depression (2 hrs. 55 min.). They then mounted the W. arête in all its length. A first snow slope was followed by several rocky pinnacles and towers, which had mostly to be turned by the snow at their N. base. Beyond these an easy snow ridge led to the summit (3 hrs. 25 min. from the gap). The descent was made by the S. arête.

The W. arête *may* have been previously climbed, but there seems to be no record of any such ascent, and the Belalp guides denied that it had ever been done before. The practicability of this route was pointed out many years ago by Dr. Schulz in his narrative of his ascent of the Sattelhorn and Klein Aletschhorn,* but his suggestion seems not to have been hitherto acted on. The new route enables a party to traverse the Aletschhorn, starting from and returning to the Ober Aletsch hut.

RÄZLI PASS. August 29.—Messrs. Frederick Corbett and Seymour Williams, and Miss Ethel Corbett, accompanied by Joh. Pieren, of Adelboden, crossed from the new inn on the Engstligenalp to the new Hotel du Parc at Montana, above Sierre, by way of the Ammertén Pass and the Ammertén, Rüzli, and Plaine Morte Glaciers, quitting the last-named near the source of the Derzence, almost due N. of Tubang. From the Ammertén Pass the party followed the usual Wildstrubel route along scree to the E. moraine of the Ammertén glacier. They then left that route, crossed the moraine, and took to the Ammertén glacier *below* the icefall. Traversing the glacier in a S.W. direction, almost on a level and a little above the rocks forming the S. boundary of the Ammertenthäli, they gained the rocky waste S. of the Ammerténhorn. Bearing due S. till near the Rüzli glacier, they went up the rocks under the W. peak of the Wildstrubel to that glacier, reached at about the point where is the contour line 2,700 m. on the Siegfried map. The Rüzli glacier was then crossed in a S.W. direction to the point marked 2,930 m. W. of the Todthorn. Hence there are several routes to Montana, the most direct being that by the W. slope of Tubang, the Col de Pochet, and the summit of Zabona, accessible by a chimney 5 min. E. of the col. (Other routes are to keep E. of Tubang and Zabona and go by the Pépinet huts, or to keep along the W. bank of the Derzence, and follow the mule-path on the E. side of the ravine of the Liene.) Nine hours' leisurely walking (an hour might have been saved) was taken from one inn to the other.

JÄGIHORN (BALTSCHIEDER) (3,416 m. = 11,207 ft.). July 23.—This is the mountain ascended by Dr. Häberlin's guides (Peter and Johann Siegen), September 27, 1869.† It must not be confused with the Jügihorn ascended by Mr. Yeld in 1884.‡ It lies at the extremity of

* *S. A. C. Jahrbuch*, vol. xix. p. 34.

† *Ibid.* vol. vi. p. 116.

‡ *Alpine Journal*, vol. xii. p. 123.

the ridge which, starting from the Breitlauhorn, runs in a southerly direction, and separates the Innerer and Aeusserer Baltschieder Firn.

Mr. J. A. Luttman-Johnson, with the guides Augustin Gentinetta and Franz (Weisshorn) Biener, starting from the Hotel Neethorn at Ried, reached the Baltschieder Joch in 3 hrs. 50 min. actual walking, and thence crossed the Aeusserer Baltschieder Firn in 1 hr. to the foot of the rock wall which supports the snow field lying below the depression between the Jäghorn and the next high point on the north. This rock-wall consists of alabs of the prevailing granitic gneiss, and was found to be in places coated with ice. By cracks and ledges, and readily avoiding the ice-coated portions, the party scaled the rocks and cut steps up the snow above in the direction of the rocks on the right, by which, and finally by the crest of the northern ridge, they reached the summit in $\frac{3}{4}$ hr. from the glacier.

A cairn was found on the top, but no cards or other means of tracing former visitors, and no ascent except by the Siegens seems to have been previously recorded.

Adula Alps.

PIZZAS D'ANNAROSA (3,002 m. = 9,850 ft.) FROM THE N. August 22. —Mr. Coolidge, with Christian Almer, jun., climbed this peak, the second highest of the 'Splügen Dolomites,' by two new routes.

From Splügen village they followed their last year's route* over the Alperschelli Pass to the Furcla d'Annarosa, 2,596 m. ($3\frac{1}{4}$ hrs.). Then they skirted round the W. flank of the desired peak, mainly by great slopes of stones, till they reached its N.W. flank. Hence (keeping always to the W. of the ridge connecting the peak with the Furcla dil Lai Grand, 2,662 m.), they mounted a great couloir, then the summit between the two steep gullies in which it ends. The rocks here were very rotten indeed, and covered with much fresh snow. Keeping to the left bank of the easternmost of the two gullies, the party, when some way below its upper end, bore to the right up a narrow crack in the rocks which led to a gap in a buttress, whence an easy traverse brought them to the gently-sloping plateau of stones which lies just W. of the highest summit. Going up this, and climbing an easy rock ridge, the summit of the peak was gained (3 hrs. 5 min., slow going, owing to the snow). Here was found a cairn with the cards of the two previous parties which had reached the peak—Herr Max Schlesinger, with Chr. Klucker, June 9, 1894, and Herr C. Hössly-Imthurn, with Peter Schwarz, of Splügen, July 23, 1894—but neither party stated on their cards by what route they had come up. According to 'Oe.A.Z.,' 1894, p. 183, the first party went up by the S.W. couloir and W. ridge, and according to 'Alpina,' vol. ii. p. 151, the second by the S. face and W. ridge. On the descent Mr. Coolidge and his guides retraced their steps down the final rock ridge and over the plateau till rather E. of the point at which they had gained it on the ascent. They now found themselves at the head of a broad snow-filled couloir which furrows the N.E. flank

* See *Alpine Journal*, vol. xvii. pp. 52-3.

of the mountain. The highest rocks were very rotten, but lower down those on the left bank of the couloir and the snow in it were easily descended, the foot of the couloir being gained in 1 hr. 20 min. from the summit of the peak. Hence a traverse E. over a small glacier (above the Lai Grand) not marked on the Swiss map, then stones, snow-fields, and grass led to the Furcla dil Lai Pintg, 2,594 m. ($\frac{2}{3}$ hr.). The views of the many-pinnacled ridge of the Annarosa were most striking during this traverse. Grass and stones led down to the highest Cufercal hut (40 min.), whence $1\frac{1}{2}$ hr. very leisurely walking sufficed to reach Sufers, $2\frac{1}{2}$ miles below Splügen, which was regained in a *char*.

Taken in connection with the explorations of this region made in 1893 by the same party,* this expedition completed their examination of the 'Splügen Dolomites.' A cairn (non-existent in August 1893) was seen on the Steilerhorn, and also one on the Cufercalhorn, both having been built in June 1894 by Herr Schlesinger (*loc. cit.*). With reference to certain remarks in Herr Hössly's interesting account of his attempts on the P. d'Annarosa in previous years,† it may be remarked that an apparent inconsistency between his views and Mr. Coolidge's as to the final ridge of the peak is easily solved. Herr Hössly approached it from the E., on which side it is a succession of difficult and fantastic rock towers. Mr. Coolidge referred to the sloping upper plateau at the W. end of the final ridge, seen by him in 1893 from the Alperschellhorn, and reached by him (as well as by his two predecessors) in 1894. It is quite certain that the nameless peak 2,641 m. (easily gained from the Furcla dil Lai Pintg) and the Piz Calandari (2,543 m.) are composed of the same Dolomite rock as the higher peaks of the 'Splügen Dolomites.'

Albula District.

E. SURETTAHORN (3,039 m. = 9,971 ft., S. map; 3,021 m. = 9,912 ft., Italian map). August 25.—Mr. Coolidge, with Christian Almer, jun., made the second ascent of the peak by a new route. Starting from the village of Splügen they followed their track up the W. Surettahorn, 3,025 m. (ascended by them on August 20), as far as the snowy depression between it and the point marked 2,922 m. on the S. map ($3\frac{1}{2}$ hrs). Thence they traversed round the head of the extensive Suretta glaciers, crossing two rocky spurs, but keeping always above the séracs, and so gained the foot of the rocky spur running N. from the desired peak (1 hr.). By the easy broken rocks of this spur they easily gained the highest ridge (25 min.), just between the two small cairns built by Dr. L. Darmstädter and Dr. Helversen, with J. and G. Stabeler, on June 28, 1894. That party ‡ had gained the summit by way of the shattered N.E. ridge from Piz La Mutalla, and descended by the steep S.E. rocky face to the Emet glen.§ Both parties were con-

* *Alpine Journal*, vol. xvii. pp. 52-4.

† *S. A. C. Jahrbuch*, vol. xxix. pp. 303-9.

‡ See *Alpina*, vol. ii. p. 132.

§ For an attempt on the peak from the S. see *Rivista Mensile*, 1892, pp. 314-5.

vinced that the W. peak of the Surettahorn is certainly higher than the E. one, so that for the latter the figures given on the Italian map are to be preferred to those on the Swiss map. The first party named the peak 'Ferrerahorn,' or 'Piz Ferrera,' but for several reasons it is better to retain the name of 'E. Surettahorn,' proposed by Herr Imhof in his excellent 'Itinerarium d. S.A.C., 1893-5,' p. 205.

After enjoying the wonderful view which extended from the Mönch to the Ortler, the party of August 25 returned by the same route to the foot of the N. spur ($\frac{1}{4}$ hr.), then completed the traverse of the Suretta glaciers to the wide opening (2,712 m.) N. of Piz La Mutalla ($\frac{1}{3}$ hr.). Stones and grass led down to the level of the Emet glen, the stream in which was crossed (1 hr. 40 min.) in order to gain the hamlet of Canicùl or Inner Ferrera ($\frac{3}{4}$ hr.). This is certainly the climber's route from Splügen to Avers.

AVERSER WEISSBERG (3,044 m. = 9,987 ft.). August 30.—The long limestone ridge of which this is the culminating point forms one of the most striking features in the Avers valley. The peak has often been reached by travellers, but the route taken seems always to have been direct from Cresta on the S. by way of the stony hollow between the points 3,041 and 2,970.

Mr. Coolidge and Almer struck out a new and quite as easy a route, which has the advantage of enabling a traveller to climb this fine point on his way from Avers to Mühlen, on the Julier road. Starting from Cresta they mounted by Hubelboden and Am Bühl through the Thäli glen to the pass at its head, 2,802 m. ($2\frac{1}{4}$ hrs.), called Thäljoch by Herr Imhof.* Descending on the Mühlen side for a short way (13 min.), in order to avoid a precipitous spur, they then bore W. up stones, small ice and snow slopes, and stones again, to a rocky hump between 2,987 m. and 3,041 m. (40 min.). Thence the easy broken rock ridge (the usual route) was followed over 3,041 m. ($\frac{1}{4}$ hr.) to 3,044 (5 min.), now crowned by a great cairn, built in 1894 by Herr Reber (the Federal engineer engaged in the new triangulation of the district). The view included the Schreckhorn, the Mischabelhörner, and the Ortler, as well as the village of Cresta.

The party descended by the yellowish stones on the N.E. face of the peak to the small glacier flowing into the Starlera glen, crossed this glacier from W. to E., traversed the rocky spur coming from the 'hump' above mentioned, and regained their former route (35 min. to the point below the Thäljoch where the knapsacks had been left). Thence they descended by the Gronda and Faller glens to Mühlen ($2\frac{1}{4}$ hrs.).

Bernina District.

MONTE ROSSO DI SCERSCEN (3,967 m. = 13,016 ft.) August 23.—Mrs. Main, with the guides Roman Imboden, of St. Nicholas, and Wieland Wieland, of St. Moritz, ascended the Italian side of this peak by a route which differs in some respects from routes previously taken, and is likely to be adopted in future ascents. They followed Messrs. B. Wainwright's

* *Itin. d. S.A.C.* 1893-5, p. 168.

and E. Garwood's 1886 route* for about one-third of the distance from the bergschrund, ascending a rib of rock close to and west of a couloir swept by falling stones. On reaching the top of a precipitous rock, by means of a steep chimney and a rather difficult traverse of 5 or 6 ft., their route deviated from those previously taken, and continued to follow the rib till a short distance below the main crest of the mountain, which was gained by an easy traverse to the east, the highest point being arrived at by the main ridge from the Schneehaube. Previous parties ascended from the top of the chimney by stone-swept gullies, and arrived eventually on the summit by the ridge running towards Piz Bernina. The mountain was covered with a large quantity of fresh snow. The descent (the first ever made down any part of the east face) was by the same route. At no time were the party exposed to danger from falling stones.

The same party repeated the ascent by this route five days later. The rocks were then free from snow, and the ascent from the bergschrund to the summit took but 2 hrs. 20 min. On this occasion they proceeded along the arête to the summit of Piz Bernina. Though this arête affords a fine climb it is by no means a very hard one when the route is skilfully chosen.

The tariff prices (150 frs. for the Scerscen and 190 frs. for the traverse of the arête to the Bernina) are absurd overcharges.

Langkofel Group.

PLATTKOFEL FROM THE S.S.W. *July 12.*—Mr. Norman-Neruda climbed this peak by a new route from the S.S.W. It is not difficult, but is certainly more interesting than the ordinary way. Those who wish to enjoy the remarkable view from the summit of the Plattkofel are advised to go up by the new route and down by the usual one. The way is obvious from the first.

Rosengarten Group.

EASTERN AND WESTERN GRASLEITENSPITZEN. *August 1.*—Mr. and Mrs. Norman-Neruda left the Grasleiten hut at 8.30 A.M., reached the Molignon Pass at 9.11, left it at 9.19, and stood on the summit of the 'Eastliest' Grasleitenspitze (Östlichste Grasleitenspitze) at 9.26. Rest till 9.50. They then went down in a northerly direction, turned to the left, and traversed into the gap between the 'Eastliest' and the Eastern Grasleitenspitzen (10.20-10.40). The ordinary way from here is described as leading to the left towards the summit, but the party went up by a chimney beginning at the gap, then traversed to the right, ascended a rock-wall, and again traversed to the right until they stood at the foot of a yellow wall. They now climbed straight up (very difficult) until they reached a hole in the mountain. Here it was necessary to climb out to the right, and over an overhanging block on to easier rocks above. The summit-ridge was reached shortly after, and turning to the left the party stood on the summit at 11.35.

* *Alpine Journal*, vol. xiii. pp. 127, 300 *sqq.*

At 12.15 they proceeded to climb the Western Grasleitenspitze, hut, owing to the uncertainty of the information received as to the correct line of ascent, they climbed up over a difficult chimney and partly overhanging rock-wall to the S.S.W. of the summit, instead of taking to the East arête. Summit, 1.45-2 P.M. The same way was taken on the descent. Eastern peak, 3.20-3.40. Eastliest peak, 5.30-5.45. Molignon Pass, 5.49-5.52. Grasleiten hut, 6.12.

THE TWO HIGHEST VALBUONKÖPFE. *August 2.*—These peaks are separated from the Grosse Valbuonkogel by the Valbuonkopf Scharte, and from the Grasleitenspitzen by the Grasleiten valley. Mr. and Mrs. Norman-Neruda left the Grasleiten hut at 9.29 A.M., and reached the Valbuonkopf Scharte at 10.36. Left at 11.30, climbed into a chimney on the right, and up it, until they had to leave it and continue the way over an extremely brittle wall. It was then possible again to take to the chimney. They then got on to the shale, and reached the summit of the higher tower over fairly easy rocks (12.20 P.M.). Left at 1.20 for the gap between the two towers. Here it was necessary to take a very long step on to the rocks of the second tower. Then they traversed upwards from left to right, and reached the second summit, over easy rocks, at 1.32. Left at 1.42, returned to the higher tower, arrived on the Valbuonkopf Scharte at 2.30, left 2.55, and regained the Grasleiten hut at 3.25.

THE TWO GRASLEITENTHÜRME. *August 4.*—These two towers are separated from the Western Grasleitenspitze by the Juni Scharte, and seen from the Grasleiten valley lie to its left. Mr. Norman-Neruda left the Grasleiten hut at 10.46 A.M., and made for a perpendicular chimney easily discernible from the hut. He reached its lower end at 10.55, and left it at 11.15. The first few yards were very difficult, and after having climbed up some 20 mètres, it was necessary to traverse out of the chimney on to the very steep rock-wall on its right. He then climbed straight up, until a perpendicular rock-wall made further progress in that direction impossible. He then turned to the left, climbed up a difficult, partly overhanging chimney, and traversed from the right to the left. This traverse is very exposed and difficult. Its length is about 25 mètres, the same as the first traverse, so that Mr. Norman-Neruda at its end found himself nearly perpendicularly above the first chimney. Here he took to the stone couloir coming down from the Juni Scharte and found a way up to the latter. He then ascended the rocks to the left, in places extremely brittle, and stood on the western summit at 1.8 P.M. Left at 1.22. It was now necessary to climb into the gap between the two towers, a not easy task, owing to the instability of the rocks. From the gap upwards the climb to the summit of the eastern tower is very difficult and exposed, though short. Eastern tower, 1.40-1.45. Juni Scharte, 2.20-2.35. End of first chimney, 3.35-3.50. Hut, 3.55.

The above-mentioned expeditions were accomplished without guides. Herr Treptow, of Berlin, with the guide Anton Mühlsteiger, of Inner Pflersch, made the second and third expeditions on the same day.

Central Caucasus.

BAKH (11,739 ft.). *July 23 and 24.*—This is the name given by the natives to a mountain above Betsho on the S. side of the river Dobra, or Dola-Chala, which flows from the Betsho Pass past Maseri.

Messrs. J. Collier, Newmarch, and Solly, starting from the Gul camping-place, and passing through Maseri, crossed the river by a bridge above the village, and followed its right bank for some distance till they reached the first large valley, which has a glacier stream issuing from it, by which they ascended to a gîte near the foot of the glacier. Leaving the gîte at 3.30 A.M. on the 24th, and ascending the glacier in $1\frac{1}{2}$ hr., they reached a conspicuous snow saddle on the N. side of the peak. Turning to the S. in another $1\frac{1}{2}$ hr., by a steep snow slope, and then by an easy snow arête, they reached the summit, from which magnificent views of Dongusorun and the mountains W. of Betsho were obtained. The descent was made by the same route. No trace of any previous ascent could be found.

THE BEAR PASS (about 10,600 ft.). **GUL TO MESTIA.** *July 28.*—The same party left the Gul camping-place and in $2\frac{1}{2}$ hrs. reached the low pass S.S.E. of Gulba.* Diverging from the route taken in 1893, they then descended in $2\frac{1}{2}$ hrs. more the steep slope leading to the névé of the Chalaat glacier, and in about 4 hrs. more reached the end of the glacier. The glacier at first falls towards the N.N.E., and then turns sharply to the S.E., and in rounding the corner it is best to keep a good deal to the left, then after the bend to descend the last icefall near the right bank.

There is no footpath from the end of the glacier, and one awkward corner at the beginning of the woods had to be turned by a struggle through the trees; but very soon a track was found close to the river bed, which continued until the meadows above Mestia were reached. A party could go from the Gul camp to Mestia in about 12 hrs. of actual walking.

This is a much finer route than that of 1893, and the scenery is exceedingly grand.

MACHKHIN (11,700 ft.). *August 7, 8, and 9.*—Messrs. Solly and Newmarch, with a native hunter named Moratvi, left Latal on August 7, and after crossing the river Ingur ascended by a steep path through beautiful woods for about 5 hrs., and then for about 2 hrs. more along the slopes of a grassy ridge to a smooth grassy plateau almost due north of Machkhin. Leaving this at 4.30 A.M. on August 8, and keeping to the left of a rocky ridge which runs down between the central and easternmost of the three glaciers on the north side of the mountain, the party ascended principally over easy rocks until at about 10.15 they reached a snow arête immediately under the summit, which was gained at 11.20. The summit is a short snow ridge of almost equal height for over a hundred yards. The party left the top about noon, and descending the snow slopes by a series of

* *Alpine Journal*, vol. xvii. p 169

glissades were clear of the snow by 3.30 P.M. After a halt of an hour and a quarter the stream was followed until 7.45 P.M., when it was too dark to go further.

The next morning they started at 4.30, and reached Lentechi at 2.30 P.M. For parts of the way a very good path was followed, but, owing to several bridges having been washed away, it was impossible to follow it throughout, and the torrent had to be crossed several times. The summit is nearly due east of the Leila, and is probably the highest point between the Leila and the Latpar Pass.

The names of the principal peaks from the Leila to the Latpar Pass were given by Moratvi as Leila, Lakora, Machkhin, Dadash, and Lasil.

Mr. Collier started on this expedition, but being unwell was unable to complete it, so went round on horseback over the Latpar Pass to Lentechi.

The party also made an attempt on the S. peak of Ushba by the rocks on the S.E. face, but, after reaching an estimated height of 12,000 ft., were turned back by a couloir which, in the then state of the mountain, it would have been dangerous to cross. Any further attempt on Ushba was prevented by unsettled weather.

SVYETGAR (13,482 ft.).—This name is given in the 1-verst map to the highest peak between the Mestia and Thuber valleys, south of the upper part of the Leksur glacier, figured in the illustration from M. de Déchy's photograph in vol. xiii. p. 504 of this Journal. Starting from a camp about an hour above Mestia, on the left bank of the torrent from the Chalaat and Leksur glaciers, the party followed the track of the Mestia Pass to the point where it leaves the left bank of the Leksur glacier to cross to the north, then keeping on the south side of the glacier, camped, after about 8 hrs. actual walking, on some grassy rocks on the left or south bank of the glacier. Starting before daylight next morning, the party ascended the glacier for a short distance, and then turned southwards up a glacier (unnamed) between Svyetgar and a point marked on the map 1,672, and ascended this to a snow saddle north-west of the peak. From this it seemed possible to ascend by a continuous arête, mostly of snow or ice, to the top, but, after cutting many hundred steps, and reaching a height estimated to be nearly 13,000 ft., the party had to turn, owing to the excessive steepness of the slopes and the very thin covering of snow over the ice, the ice itself not being thick enough for good steps to be cut in it. An attempt was made to continue the ascent by the rocks, but these were found to be glazed with ice and dangerous. The party reached their higher camp just before dark, and spent the second night half an hour lower on a rhododendron-covered slope, and reached camp next morning about 9 o'clock.

Another attempt on this mountain and several other expeditions were frustrated by the weather, which was, if anything, worse than in 1893.

[Many 'New Expeditions' in the Alps and in Norway are held over till the February number.]

IN MEMORIAM.

PERCY W. THOMAS.

Few names have been better known to Alpine men than that of Percy Thomas; few faces have been more universally welcome at the meetings and social gatherings of the Club. The news that he had passed away came very unexpectedly upon his many friends; and all who knew him will feel poorer for the knowledge that his bright smile and genial presence will be seen and felt no more.

Percy Thomas was born in 1854, and was educated at Harrow. The love of his old school was an influence which he carried through his life, and which, as an interest outside his home circle, was second only to his love of mountaineering. This latter was intense and catching, for he possessed the rare power of communicating, to those who had never seen the Alps, some of his own enthusiasm. His lectures, which were illustrated by coloured lantern slides of his own painting, were well received and equally appreciated by audiences of every intellectual grade. As a mountaineer he was keen and energetic, and in 1890 made some interesting expeditions amongst the Rockies, whilst on a business tour in Colorado. In the Alps he effected the first ascent of the Lysekamm by the S. arête; and, amongst other unrecorded work, made a series of attempts upon the then unconquered Aiguille du Géant.

In Percy Thomas the Alpine Club loses a valued member of nearly twenty years' standing, who has rendered good service both on the committee and as a contributor to the 'Alpine Journal': in him the mountaineering fraternity loses an expert and ardent climber, who yet knew well the principles which underlie the craft, and never allowed his enthusiasm to overstep the limits which prudence would dictate: in him the world loses a true, kind, and single-hearted man who, in spite of more trouble than was his share or his due, ever retained a bright face and a bright mind, and whose influence upon his fellow-creatures was for good.

C. W.

ALPINE ACCIDENTS IN 1894.

THE summer of 1894 will fortunately be remembered rather for its nearly continuous bad weather than for the number of fatal accidents in the Alps by which it was marked. Yet eight valuable lives have been thrown away, either on the higher peaks, or on the lower summits which are not the resort of the ordinary tourist. Many of these, it will be seen, were lost through neglect of the most obvious precautions, solitary and ropeless climbing accounting for several, though such practices go dead against one of the fundamental rules of mountaineering. But it is useless to shut our eyes to the facts that both solitary climbing and ropeless climbing are rapidly increasing, and it is certainly desirable that some joint action should be taken by the leading Alpine Clubs to mark their utter disapproval of such practices. This

would call the attention of inexperienced climbers to the dangers of dispensing with well-recognised precautions, and it is inexperienced climbers who, as a rule, pay the penalty of not observing them.

The first fatal accident of the season in the High Alps occurred on July 28. On that day two parties left the E. Sella Club hut, above Macugnaga, for the New Weissthor. One of these consisted of several travellers with one guide, the other of a teacher from Saxony, Herr G. A. Meyer, who, despite all remonstrances, persisted in going quite alone. He followed the guided party at some distance, and when they were on the pass was seen by them on a ridge below. Thinking that he had preceded them on the descent, the large party did not look for him on their way back to Macugnaga. It was only later that he was missed, and searched for. His body was found four days later on the glacier, at the foot of a rock precipice. He had apparently kept too much to the right on the way up, the rocks there being harder than on the usual route, while stones fall in those parts frequently.*

Solitary climbing has thus claimed another victim, and cannot be too strongly discouraged, even in the case of experienced climbers, among whom Herr Meyer was, it is said, not to be numbered.

The next accident was the death, on the Grenz Glacier, of the Baron Luigi de Peccoz, well known as the host, at Gressoney, for several years, of the Queen of Italy. He formed one of the numerous caravan which, on August 25, accompanied Her Majesty across the Lysjoch on the way to the Riffelalp. The party, on four distinct ropes, had successfully reached the pass from Italy, and were working their way down through the crevasses on the Swiss side. The second detachment consisted of the guide Welf, M. de Peccoz, the Queen, one of her ladies in waiting, and two other guides. All went well for about 3,000 ft. on the Swiss side. The Baron seemed in excellent spirits and in perfect health. Suddenly he uttered a cry, and fell down on the glacier. Death seems to have been instantaneous, and was later discovered to have been due to aneurism of the heart. M. de Peccoz is stated to have suffered from heart disease, and, though advanced in years, was robust; but his physicians had dissuaded him from undertaking long and fatiguing expeditions. One can easily understand his eager desire to accompany his Queen and guest on an excursion among his native mountains, but his sad end shows that persons who are no longer young and are aware that they have weak hearts should refrain from over-exerting themselves; some may do it with impunity, but the majority should remember that long expeditions at great heights, even though the climb is in no way a dangerous or difficult one, require more considerable exertions than they think.†

Two more fatal accidents occurred in the Dolomites early in September within three days of each other.

* The above particulars are taken from the *Rivista Mensile del C.A.I.*, October, 1894, pp. 367-8, which derives its account direct from a gentleman member of the search party.

† The above details are taken from the *Rivista Mensile*, 1894, pp. 327-8, which is the official account sent to the Italian Alpine Club, and corrects various erroneous notices published in the daily papers.

Of that on the Euringerspitze on September 6, we have received the following account from Mr. Norman-Neruda.

‘On September 6 two parties, one consisting of Herr Johann Pemsel, of Nuremberg, and the guide Angelo Zangiacomi, of Cortina; the other of Dr. Walther Schultze, of Halle, and the guide Sepp Innerkofler, of Sexten, joined forces to ascend the Santnerspitze and the Euringerspitze, two remarkable rock-towers belonging to the Schlern.

‘The ascent of the former had been accomplished without noteworthy incident, but when about 25–30 mètres from the summit of the latter Herr Pemsel, who had insisted on going without being roped to his guide, let go his hold, and, sliding down the first 20 mètres, fell over the formidable precipices of the mountain, a distance of some 400 mètres. The body was recovered on the following day. It is difficult to say whether Herr Pemsel slipped, or whether the accident was due to sudden failure of the action of the heart. The latter seems not improbable, if it be true that Herr Pemsel had early in the spring several times complained of the unsatisfactory function of that organ, and that his father died of heart disease.

‘This view would be corroborated by the fact that he did not make any attempt to save himself by clutching at the rocks as he gently slid down the first 20 mètres, and that no exclamation of surprise, dismay, or terror was heard by the other climbers, who were quite close by him.

‘No blame can be attached to the guide Zangiacomi for not roping his traveller, for he had repeatedly that day requested him to put on the rope when they came to more difficult places. It seems that Herr Pemsel always wished to go without the rope, and before he went on an expedition gave his guides a certificate exonerating them from blame in case of accident.

‘It has been stated that Herr Pemsel was a very experienced and an exceptionally good climber. Sepp Innerkofler, however, who knew him of old, told me that he did not go as well as might be expected from one who had climbed so much in the Dolomites and who insisted upon going unroped, and that he had gained no real experience. His one object in mountaineering seems to have been going without a rope. Not many days before the accident he, with that excellent guide Antonio Dimai, climbed the Fünffingerspitze from the S. (Robert Hans Schmitt’s route of 1890). After the climb he is reported to have said that had he known it to be *so easy* he would not have used the rope. That the climb is not only *not easy*, but one of probably unparalleled difficulty, I, for one, can state from personal experience,* and this opinion is further borne out by the fact that only one guide has ever dared to take that route, *in spite of its great reputation*—viz., Antonio Dimai. No experienced climber would call it easy.’

The following additional details are furnished by Dr. Walther Schultze in the ‘Mittheilungen d. D. und Oe. A.V.,’ pp. 239–240. The party were on the side of the peak towards the Schlern, and were aiming at a gap between two rock towers, not far below the summit.

* See *Oesterreichische Alpen-Zeitung*, 1894, p. 194.

To reach this gap it was necessary to overcome a smooth and steep rock wall. To the right of this wall a cleft in the rock afforded good handhold, and below it was a good knob on which one could stand, and this route was taken by Dr. Schultze and Innerkofler. Herr Pemsel, however, insisted on trying to get up on the left side of this wall, in which there was no cleft nor any good foothold below. Zangiacomì succeeded in effecting the ascent, and then asked whether he should not let down the rope to his 'Herr,' a course which was also advised by Innerkofler. Herr Pemsel would not hear of this, but when two-thirds up the wall, from some reason or other lost his hold, and fell, as described above. Dr. Schultze expressly states that both he, as well as both guides, had repeatedly urged Herr Pemsel to rope, but in vain. Not the slightest blame can therefore attach to any of the other members of the party. He adds that in 1891 Sepp Innerkofler broke off his engagement to Herr Pemsel on the express ground that the latter refused to make use of the rope, alleging that he had a perfect right to risk his life if he chose. He states further that, probably in consequence of a rapid series of great climbs in the Dolomites this summer, Herr Pemsel had complained of the irregular action of his heart. A fresh attack may therefore have been the immediate occasion of his slip, but there can be no doubt that his obstinate refusal to rope was the principal cause of his death. It is indeed possible to put on the rope in places where it is not really needed, but the reverse plan of not putting it on at all, even in the case of an experienced climber, seems to be fast coming into popularity. We may smile at the extra caution of the former practice, but no words are too strong to condemn the wilful neglect shown by those who adopt the latter foolish habit. It is better to be too safe than to dispense with a long settled rule, even if the rope affords moral rather than material support.

The other accident occurred on the Marmolata on September 8, and resulted in the loss of a traveller and his guide. The following narrative is based on that sent to the 'Mittheilungen d. D. und. Oe A.V.,' 1894, pp. 240-241, by Dr. Schelcher, of Dresden, who was in the second party, and was an eyewitness of the catastrophe. Herren W. E. Kahl (a young Bohemian climber, aged twenty-six) and G. Seidel, with the guides Johann Villgratner (*vulgò* Tschöll), of Tiers, and Simon Verra, of Fedaja, started from the Fedaja Pass on September 8, and, following the ordinary route, had commenced the ascent of the final snow slope of the Marmolata; behind came Dr. Schelcher and two guides. There had been a great fall of snow the day before, and the going in the snowy hollow of the glacier was very heavy. On the last slope a layer of fresh powdery snow was found overlying the old firm snow. Neither of the local guides (of whom there was one with each party), however, had any idea of danger, and so both parties went on. All at once the upper layer of fresh snow gave way, and a great snow-cloud enveloped Dr. Schelcher's party, all of whom were carried off their feet. Luckily they were able to plant themselves firmly, and when the cloud passed off looked round for their comrades. Herr Seidel and Verra were soon rescued unhurt, as they had sunk deep

into the snow. The rope between them and their two companions was, however, broken. These unfortunate men had been carried down a long way over a high rock wall, and their bodies were found below the bergschrund.

It does not seem quite clear whether an avalanche fell from above at or about the same time that the fresh snow began to move; in any case the advance party had to bear the brunt of the shock, and it is marvellous that only two of them perished. Possibly, had the rope not broken, all might have been saved; but it is also possible that if it had not done so, all might have been carried away by the rush and weight of the snow. It is stated that hitherto no danger from avalanches has ever been feared on this bit of the Marmolata, which is notoriously a very easy climb. [But it would appear as if the local guides, at least, ought to have been aware of the state of things, or even the other guides, for the travellers were provided with the proper number of professional guides. Most probably the true explanation is to be sought in the fact that guides in the Dolomite districts have so little opportunities of learning snow-craft that they do not realise that under certain conditions even an easy snow-peak may become temporarily dangerous.]

On September 20th an accident occurred on the Zinal Rothhorn, in which Joseph Mariè Biner, a well-known Zermatt guide, lost his life. The other members of the party were Dr. Peter Horrocks and Peter Perren, both of whom are to be congratulated on their very narrow escape. The party had already effected the ascent of the mountain, and were descending towards Zermatt. On reaching the well-known 'Blatte' overlooking the Durand glacier, the usual precautions were observed. Biner, who was leading, crossed the awkward slab, and planted himself firmly on the opposite side. Perren, who was last, was standing behind and holding on to a fair-sized rock, round which he was paying out the rope; while Dr. Horrocks crossed the slab, and Biner gradually pulled in the slack. Suddenly the rock in which Perren placed such confidence came out, and bounded down the mountain side. Perren slid rapidly down the steep rocks; Dr. Horrocks, who had no foothold and very little handhold, was jerked from his position, turning a somersault, and becoming momentarily stunned from his head striking against the rock. The strain on the rope was too great for Biner to withstand, and he was dragged down too. The whole party half tumbled, half slid, down the very steep smooth rocks for 30 ft. or 40 ft., when the rope between Dr. Horrocks and Perren caught behind a projecting rock, and brought them both to a standstill. Perren found himself landed in a small patch of soft snow some 15 ft. below the rock which had so fortunately engaged the rope, while Dr. Horrocks, some 7 ft. higher up, though at first suspended with his back to the steep rocks, was very soon able to get more or less foothold. Poor Biner had the extra length of his own rope still to fall, and, when the strain came, the rope broke, according to one account, halfway between him and Dr. Horrocks; according to another, rather nearer to the latter. Biner fell down on to the Durand glacier some 2,000 ft. below, whence his mutilated body was recovered by a search

party which crossed the Trift Pass, carried the body down to Zinal, and so by road and train brought it to Zermatt, where the funeral took place. Dr. Horrocks and Perren were rescued from their dangerous position, some 10 or 12 min. after the accident occurred, by the guides Emile Gentinetta and Edouard Julien, who were following down the mountain with another party.

Such are the facts. It remains for us to consider the cause, or causes, of this lamentable catastrophe. The two primary causes were obviously (1) the unexpected detachment of the stone in which Perren was trusting, and (2) the breaking of the rope. Had not the rope broken, it is possible that all three might have perished; but, on the other hand, all three might have been saved. Only one other element can be brought in as a cause, and that is a degree of perhaps pardonable carelessness on the part of Perren in not testing more carefully the rock which proved to be so insecure. Had the place been one unknown to him, he would, no doubt, have exercised more care; but the rock was one he had often trusted to, and it had been used that very day by both parties whilst ascending. We do not think that any blame attaches to Perren; but the accident is one which should stimulate us all to use great care in testing all important holds, whether we have reason to consider them safe or not. One question remains to discuss. Why did the rope break?—and it is not one which can be answered with certainty. It has been said that the rock which caused the accident fell on to the rope, and partially cut it; but, considering the position of the party and the point at which the rope parted, this explanation is hardly tenable. A member of the Club, who saw the rope, informs us that there was a mark upon it between Perren and Dr. Horrocks which might perhaps have been due to this cause, and that the fractured end was jagged, 'and looked as if it might have been cut by a very blunt instrument.' Dr. Horrocks, on the other hand, states that 'the broken ends were like a horse's tail,' and the fracture looked to him as if produced by a pure break. In our opinion it was, in all probability, partly cut by catching upon some sharp rock, and was completely severed by the final strain. A pure break would have probably taken place at one of the knots, which have been shown by numerous experiments to be the weakest points in a knotted rope.* The rope was an English made Alpine rope, and had the red line of thread running through it. It belonged to Peter Perren, to whom it had been given by an English climber, after using it a few times. All who saw it have said that it appeared to be a good rope in good condition. We have made efforts to secure a piece for examination, and may yet succeed in this endeavour. Failing this, it is impossible to speak more definitely as to its condition, nor are we able to report with certainty whether it was or was not manufactured by Messrs. Buckingham.

To sum up, we should say that this accident is one of those comparatively rare ones which cannot, without undue straining, be attributed to any preventible cause. Climbing must always possess some

* *Alpine Journal*, vol. xvi., 'Equipment Report,' p. 7.

elements of danger; but, had we only accidents of this class to chronicle, its statistics would show it to be less fraught with danger than almost any other form of sport.

Poor Biner died, through no fault of his own, whilst in the discharge of his duty. He leaves a widow and seven young children, who are entitled to the widespread sympathy of mountaineers. The subscription list, which was started for their benefit, has hitherto realised the sum of 10*l.* Further contributions will be very gratefully welcomed, and may be sent either to Madame Seiler, or to Dr. Horrocks, 26 St. Thomas's Street, S.E.

Thus there were at least five accidents last summer in what may be called the 'High Alps,' and these cost six precious human lives.

Two other mishaps may properly be mentioned here, for though they took place on comparatively low mountains, yet the climbing is not easy in either case, and once more solitary and ropeless clambering stands self-condemned.

On July 1, Herr Klausz, a Hungarian from Presburg, then a student at the Federal Polytechnic School at Zürich, was killed while trying to force a new route up the Vrenelisgärtli, one of the peaks of the Glärnisch. He and his companion started from the Gleiter hut, and gained all right the gap between the Vorder Glärnisch and the Vrenelisgärtli. They then went along the ridge towards the latter peak. At one point it became necessary to force their way across a precipitous rock wall of 250 to 300 ft. in height. Two slightly different accounts have been published of the manner in which the accident took place. That which seems the most trustworthy* states that after several failures Herr Klausz had been pushed up about 8 or 9 ft. by means of the ice-axe of his companion (a young student). He managed to get some sort of hold, but soon began to shudder, gave a loud cry, and fell head-foremost, grazing his companion as he fell. The latter was holding the rope in his hands (having previously unroped, as he desired to go back, but was unluckily over-persuaded), and, of course, it slipped through them, though it may be doubted whether this was of any real importance. The unfortunate man fell 1,400 to 1,600 ft. on to a snowfield, and was of course picked up dead. According to the other account,† Herr Klausz had tried to fix his axe in a cleft in the rock, intending to pull up his friend by the rope; either the axe slipped or the hold gave way, and so he fell. Whether his companion would have been able to hold him had they been tied together by the rope is uncertain, but in any case the spot of the accident seems to be one where the very greatest care was essential. The friend who sends the narrative to the 'Oesterreichische Alpen-Zeitung,' adds some details which apparently make it clear that it was the unhappy victim's foolhardiness and rashness which was the real cause of the accident. Herr Klausz, it seems, had only begun to climb in 1893, and Vrenelisgärtli was but his twentieth expedition, great or small. He is said to have climbed in a very careless fashion, not

* *Oesterreichische Alpen-Zeitung*, 1894, pp. 183-4.

† *Alpina*, vol. ii. p. 118.

looking out for firm rocks or good handholds, or even considering whether a bit was passable or not. His second climb had been up the Tödi alone, and in a pair of lightly nailed boots, while he intended to do the Finsteraarhorn and other high Oberland peaks alone. Twice in his short Alpine career had he already met with accidents, which seemed to make no impression on him. His friend concludes his letter by saying: 'My opinion is that seldom has a man so well earned his fate as in this case. Sooner or later a fatal accident was certain to befall him.' Our readers will probably long ago have come to the same conclusion.

Mr. D. W. Freshfield sends us the following note on an accident which occurred near Pontresina.

'On September 2 Herr Wilke, of Hamburg, lost his life by a fall while descending along the face of the western of the two rocky points near Pontresina known as the Sisters (*Zwei Schwestern*). The rocks are precipitous, and the foot- and hand-holds difficult to see from above. Though frequently traversed by parties, the place is not one where it is prudent for any solitary climber, however experienced, to venture for the first time without companions. It would be well if a notice were put up on the top of the western "Sister" warning those who have followed the good path from the Schafberg so far, that the remainder of the traverse is perilous except for roped parties. Tourists may otherwise easily be tempted, by the signs of frequent passage visible on the further peak, to attempt to go on to it; and the traverse is, as the recent catastrophe shows, unsafe even for a fairly experienced climber.'

Besides these seven fatal accidents, there have been many on minor summits which it is unnecessary to enumerate here. But a word of commiseration may be permitted as regards the two unlucky tourists (a Frenchman and a Belgian) who were killed on September 1 by lightning between the big hotel near the summit of Pilatus and the top of that well-known point of view. An even sadder case is that of a young Grindelwald guide, Peter Bohren (son of Christian), who perished at the age of 28 in August close to a frequented path. He had made some great ascent, and was returning late in the evening with his party to Grindelwald. They were coming down from the Bäregg inn, and had reached the place where there is a rough stony descent, close under the precipices on the right, but some way above the upper edge of the forest. Bohren stumbled on the path, and fell to the left for a short distance on to a side path leading to one of the refreshment booths near the Lower Glacier. (This path joins the Bäregg path a few steps below the spot where the accident happened.) In his fall, he unfortunately (as the slope is mainly a grassy one) struck his head against a rock, and was instantly killed.

ALPINE NOTES.

NEW MAP OF THE CHAIN OF MONT BLANC.—It is now recognised on all hands that there is no published map of the Mont Blanc chain which is at all up to modern requirements. The older maps (such as Mr. Reilly's and Captain Mieulet's) fail in various respects, while that announced by MM. Vallot will not be completed for many years. It is, therefore, with great pleasure that we are enabled to announce the speedy publication (perhaps even in 1895) of a detailed map of that portion of the Alps which extends from the Col du Bonhomme to Catogne, including, therefore, the French, Italian, and Swiss slopes of the Mont Blanc chain. The materials have been collected on the spot, in the course of explorations continued during many summers, by M. L. Kurz and M. A. Barbey. The map itself has been drawn by Herr Imfeld, and is to be engraved by Herr Leuzinger, so that all possible guarantees for its accuracy and technical perfection are secured. It is on a scale of $\frac{1}{300000}$, and will be printed in eight colours, but will have no contour lines, for these (as pointed out by Professor Heim, of Zürich) are mere geometrical abstractions and are never geometrically exact. Its size will be 90 centimètres by 40 centimètres. The nomenclature has been corrected throughout, and 129 new names inserted. More than one hundred heights have either been revised or measured for the first time. Professor Heim, after inspecting the manuscript, writes that it is the most perfect map that has yet been made, by reason of its clearness, its intelligibility, and its effectiveness.

The owner of the map, M. Barbey, of Lausanne, proposes to issue the map to subscribers in two forms—the ordinary at 7 frs. 50 cent. and a numbered and limited *édition de luxe* at 20 frs. (both prices excluding postage). The English agent is Mr. Edward Stanford, 26 Cockspur Street, London, S.W.

A NEW ALPINE PERIODICAL.—We are asked to state that the Lyons section of the French Alpine Club have decided to replace their 'Bulletin' (issued every two years) by a monthly review, to be entitled 'Revue Alpine.' A specimen number was issued on November 1, but the regular issue will start from January 1, 1895. The new periodical will run to 9 or 10 numbers a year (*i.e.* not appearing during the summer months) and each number will contain 24 pp. as well as a phototype. It is well known that the 'Bulletins' of the Lyons section are always full of good reading, which augurs well for the success of our new contemporary.

THE MOUNTAINS OF ALASKA.—A Washington correspondent, under date September 11, writes as follows:—

'The advance guard of the surveying parties that have been engaged during the summer in completing the survey of Alaska have returned to this city. This season's work is supposed to finish the joint survey of the boundary by Great Britain and the United States, and put the matter into such shape that the State departments of the

two Governments can get to work and arrive at some conclusion regarding the validity of their respective claims, which are very conflicting.

'One of the results of the season's work was to settle that the top of Mount St. Elias, so long regarded as the giant mountain of the continent, is not in the United States territory. It was also settled beyond dispute that the mountain was not the tallest on the continent, there being two or three others a little further inland that overtop it by some hundreds of feet. They are all in British territory. The height of St. Elias, according to this year's determination, is 18,023 ft. Of the higher inland peaks Mount Logan is 19,534 ft., and there are two other nameless peaks that a little overtop St. Elias.

'The surveying parties of the two nations were mixed in each case, the English having representatives with our Coast Survey men, and the Coast Survey sending men with the English parties. There were some narrow escapes in the course of the season's work, several of the boats being upset at different times, and part of the provisions, clothes, and instruments lost.'

THE 'ALPINE POST.'—This well-known journal, formerly the 'St. Moritz Post,' has introduced a new feature, to which climbers may be glad to have their attention directed. It publishes twice a week a list of guides desirous of accepting engagements to travel beyond the limits of their own district. The list is only open for guides who have already travelled in at least one district other than their own. The idea seems a good one.

BOUQUETINS.—Signor G. B. Rimini, the librarian of the Florentine section of the Italian Alpine Club, has courteously drawn my attention to an important privately printed book about bouquetins which was not mentioned in my article in the August 'Journal.' It is by C. I. Forsyth Major, M.D., and is entitled 'Materiali per servire ad una storia degli Stambecchi.' It was printed at Pisa in 1879, fills fifty-six large pages, and contains several lithographs; it seems to be a comparative study of the skulls of bouquetins of various races.

W. A. B. COOLIDGE.

A NEW ZEALAND CLIMBING PARTY.—We are informed that Mr. E. A. FitzGerald, a member of our Club, has sailed for New Zealand, where he intends to climb during the coming season. He has taken with him as guide Mattias Zurbruggen, of Macugnaga.

THE LIBRARY.—The following additions have been made since March 1894 :—

Yung (E.). Zermatt and the Valley of the Viège. 4to. Illustrated. Translated from the French. Geneva and London, 1894.

Thurling (Prof.). Oberstdorf. Maps. 8vo. 1894.

Die Schweizer Reise des Messischen Instituts (1845). Coloured illustrations. 8vo. Neuwied, 1847.

Tuckett (Miss L.). Beaten Tracks; or, Pen and Pencil Sketches in Italy. Illustrated. 8vo. London, 1866.

Ritter (E.). Les Massifs de Beaufort et du Grand Mont. Pamphlet. 8vo. Geneva, 1894.

Whymper (E.). The Great Andes of the Equator. Second edition. London, 1892.

- Richter (E.). Erschliessung der Ostalpen. Parts 20-24. (Complete in 24 parts.)
 Dauphiné Tourists' Society. Annales, 1877 et 1880-1885.
 Zeitschrift des D. u. Oe. Alpenvereins, 1880.
 Ungarisches Jahrbuch, 1879.
 Itineraria S.A.C., 1869, 1870, 1872, 1873, 1875, 1878-79, 1888, 1890-91, 1893-95.
 Schröter (L.). Alpine Flowers. Coloured illustrations. Fourth edition. 8vo. London, 1894.
 Purtscheller (L.) and Hess (H.). Der Hochtourist in den Ostalpen. Maps. 2 vols. 8vo. Leipzig, &c., 1894.
 Norske Turistforenings Aarbog for 1894.
 Labrousse et Saint-Saud (Comte de). Tour du Monde. Two numbers. Containing 'Pics d'Europe.' 1894.
 Elton (Charles). Shelley's Visits to France, Switzerland, &c. Illustrated. 8vo. London, 1894.
 Haskett-Smith (W. P.). Climbing in the British Isles. Illustrations. I. England. 8vo. London, 1894.
 Trautwein. Tirol, &c. Ninth edition. 1894.
 High School Student. June 1894. Bridgeport, Conn. (First Ascent of Gaurisankar by F. L. Waldo.)
 Coolidge (W. A. B.). Range of Tödi. (Climbers' Guides.) London, 1894.
 Miles (E. J.), M.D. Byways in Southern Alps. Illustrated. 8vo. Zürich and London, n.d. (1893.)
 Oesterreich. Touristen Club. Chronik, i.-x. (1880-1889.)
 " " " " Jahrbuch, i.-xii. (1870-1881.)
 Zsigmondy (E.). Die Gefahren der Alpen. 8vo. Leipzig, 1885.
 Billy (M. E. de). Changements des Glaciers de Gorner et de Findelhorn. 1866. (Extr. Bull. de la Soc. Géolog. de France.)
 Hirzel-Escher; Wanderungen in weniger besuchte Alpengegenden d. Schweiz. Small 8vo. Zürich, 1829.
 Martins (Ch.). Les Glaciers du Spitzberg comparés à ceux de la Suisse. Pamphlet. 8vo. n.d. (c. 1840.)
 Tourte-Cherbuliez (Mme.). Deux Excursions à la Vallée de Grindelwald en 1793 et en 1839. Pamphlet. 8vo. n.d. (c. 1840.)
 Blas (Dr. J.). Ueber die Glacial-Formation im Innthale. (Extr. Zeitschrift d. D. u. Oe. A.V.) 8vo. n.d. (1885.)
 Felbinger (Ubaldo). Deutsche Bergnamen in den Ostalpen. Pamphlet. 8vo. Vienna, 1892.
 Conway (W. M.). Climbing and Exploration in the Karakoram Himalayas. Maps. 2 vols. London, 1894.
 Jahrbuch des Ung. Karpathen-Vereines, 1894.
 Vernes (M. F.). Voyage Episodique et Pittoresque aux Glaciers des Alpes. 8vo. Paris, 1807.
 Paterson (M.). Mountaineering below the Snow Line. Illustrated. 8vo. London, 1886.
 Bourrit (M. T.). Description des Aspects du Mont-Blanc, &c. 8vo. Lausanne, 1776.
 Bourrit (M. T.). Itinéraire de Genève, des Glaciers de Chamouni, &c. 8vo. Genève, 1808.
 Deluc (J. A.). Lettres Physiques et Morales sur l'Histoire de la Terre et de l'Homme. 6 vols. 8vo. Paris et La Haye, 1779.
 Martel (E. A.). Les Abîmes, les Eaux souterraines, &c. Illustrated. 4to. Paris, 1894.
 Weld (C. R.). The Pyrenees. 8vo. Illustrated. London, 1859.
 Davies (Rev. J. S.). Dolomite Strongholds. London, 1894.
 Deluc (J. A.). Recherches sur les Modifications de l'Atmosphère. 2 vols. Large 8vo. Genève, 1772.
 Grillet (J. L.). Dictionnaire des Départements du Mont-Blanc et du Léman. 3 vols. Chambéry, 1807.

- Annuaire du C.A.F., 1893.
 Mourier (J.). Guide au Caucase. 8vo. Maps. Paris, 1894.
 Report (1893-94), Lands and Survey, N.Z.
 Stephen (Leslie). Playground of Europe. 2nd edition. 8vo. London, 1894.
 Parisi (F. M.) (C.A.I.). Edelweiss. Genoa, 1894.
 Brusoni (Ed.). Guida alle Alpi Centrali Italiane e Regioni Adiacenti della Svizzera. 8vo. Maps. Domodossola.
 I. Valsesia, Lago d'Orta, &c. 1892.
 II. (Part 1) Alpi Comasche. 1893.
 Bollettino del C.A.I. 1893.
 Jahrb. Schweiz. Alpenclub, 1893.
 Whalley (Rev. T. S.). 'Mont Blanc,' an Irregular Lyric Poem. London and Bath, 1788.
 Catalogo della Biblioteca della Sezione Fiorentina del C.A.I. Florence, 1894.
 Jubiläumsgabe, D. u. Oe. A.V. (München). 1894.
 Smithsonian Institute Report. 1892.
 Güssfeldt (Paul). Der Mont Blanc. 8vo. Illustrated. Berlin, 1894.
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REVIEWS AND NOTICES.

Diplomite Strongholds. By the Rev. J. Sanger Davies. Illustrated.
 (London: Bell and Sons. 1894.)

WE are informed on the title page of this book that it contains an account of ascents of the last untrodden Alpine peaks—namely, the Croda da Lago, the Little and Great Zinnen, the Cinque Torri, the Fünffingerspitze, and the Langkofel. The title is itself somewhat misleading. Of the six peaks described the Cinque Torri may be dismissed as scarcely coming within the category of an Alpine peak, being merely an overgrown 'Kletterstein.' The Langkofel was ascended twenty-five years ago, in 1869, or eight years before the ascent of the Meije and nine years before that of the Aiguille du Dru. The Grosse Zinne was scaled in 1872, and a good account of it is given in the 'Alpine Journal' for 1874, whilst the Kleine Zinne has been vanquished for thirteen and the Croda da Lago for ten years, since which such peaks as the Aiguille des Charmoz and other important points have been ascended for the first time in various parts of the Alps.

The book, therefore, does not claim to be a description of new ascents, or even of new routes, although the ascent of the Fünffingerspitze by the S.E. side, or 'Daumenscharte,' a route first taken by Mr. H. J. T. Wood, in 1890, has, we believe, not been previously described in English. One is interested, therefore, in discovering for what class of readers the book has been written, and what are the special qualifications of the writer. We see from the preface that it is intended for the general public, whom it endeavours to stimulate with a desire to 'go and do likewise;' but we fear we cannot congratulate the author on having succeeded better than those others 'whose descriptions of rock-climbing are notoriously unsatisfactory.' Unfor-

tunately in describing these rock-climbs our author has no experience of other districts with which to compare the difficulties and peculiarities of these peaks, his previous mountaineering experience being confined, we are told, to the memory of youthful scrambles on the cliffs of Britain. Notwithstanding this warning the reader acquainted with the district will hardly be prepared for the highly-coloured description of these ascents. Thus in speaking of the Kleine Zinne 'traverse' he expresses the opinion that it ought to be taken without a rope, as 'there was absolutely no safe hand-grip from end to end' of the traverse, which he estimates at '100 yards long going and 50 yards returning,' with an absolutely vertical drop of nearly 2,000 ft., while he further states that the rope is of no possible use, as 'in such a place no man can help his brother.' Any one who turns to the illustration on p. 55, and observes the manner in which the rope was used, will readily acquiesce in this statement, as we hardly think this is the method of ensuring safety during a traverse recommended by the 'Alpine Code.' In point of fact there is scarcely five yards at the end of the traverse without excellent hand-hold, and here the leading guide is directly over the traveller and situated in one of the 'firma loca's' which we hear a good deal about in the rest of the book. The length assigned to the 'traverse,' estimated even at 50 yards, appears much exaggerated; perhaps if the author renewed the ascent he might be induced, on further acquaintance, to 'let it go at 40 yards going and 20 returning,' which would not, perhaps, be much under the mark. And can the drop from this ledge be really 2,000 ft.? The height of the summit of the Kleine Zinne above the 'grava' is, according to Wundt, 1,200 ft., and the traverse occurs about two-thirds of the way up! Again, if we have understood the description aright, all the party appear to have climbed the difficult chimney near the top head downwards, some with their head in the cave and their feet leading, others with their legs tucked into the hole, and swinging head downwards in search of hand-holds, as shown in the remarkable illustration facing p. 58. These things are a matter of taste, and doubtless the author's party preferred doing it this way; but we hasten to inform the timid reader, who might have had designs on the Kleine Zinne before reading this book, that this is neither the necessary nor usual way of surmounting that obstacle.

The above somewhat misleading descriptions are typical of many others in the rest of the book. Thus in the 'Croda da Lago' we are told of a 'traverse' where the last guide had apparently passed the traveller, and was seen 'clinging to the ledge and stooping, while the other, straining upwards, spreading his body to the face of the rock, was gradually hoisted upon his companion's shoulders, and *ultimately on to his head,*' &c. &c. We know of no such place on the mountain, and can only suppose that the methods adopted are another illustration of the climbing idiosyncrasies of the author and his party.

The book is illustrated (!) with a map and 10 full-page photographs and drawings, 2 coloured, besides 25 smaller illustrations in the text, chiefly from drawings by the author. On the whole we have no hesitation in saying that they are the worst which we have come across

in any Alpine book. The photographs are decidedly poor, and the drawings, apart from their artistic merits, in no way resemble the places they purport to depict; a moment's comparison of the illustrations in the chapter on the Kleine Zinne with Herr Theodor Wundt's beautiful photographs of that peak brings this home pretty clearly. Again, the sketch on p. 11 of Constable X. apparently in hot chase of the culprits who are disappearing over the orchard wall resembles nothing to be found on the Croda da Lago, while the only place resembling the numerous 'firma loca's' described as occurring on the same peak (illustrated on p. 14) is a large cave, into the depths of which there can be no possible reason for retreating. The artist, did not apparently feel himself equal to representing the bedding planes of the limestone rocks, so that, instead of the innumerable ledges and hand-holds almost invariably present, we have, in most of the drawings, blank paper, which the affrighted reader is left to fill in with whatever form of abyss he prefers. It is, no doubt, greatly due to this fact that the drawings fail to convey a true idea of the places they profess to represent. Thus the rocks at the beginning of the Fünffingerspitze, which Luigi Bernard is represented as climbing, resemble no rocks which we have come across, least of all Dolomite; while the picture of Monte Civetta strikingly recalls the weird microscopic sections of anatomical preparations at the Photographic Society's exhibition in Pall Mall. Many also will smile at the pictures of the 'Ice Camino' and 'Cascade on the Langkofel,' whilst 'Between the Zinnen' might have done duty for the oyster supper of the walrus and the carpenter in that other book on Wonderland. For the rest, the book, which is brightly written throughout, contains interesting descriptions of Dolomite scenery, but we fear it can hardly be classed among the excellent series of 'Climbers' Guides' published on other districts, and we sometimes wonder whether it was altogether by chance that the book appeared in the publishing announcement column of a leading 'weekly' under the heading of 'Fiction.'

Mr. Conway's Karakoram Map. (London: Stanford. 1894.)

No reader—not of the lending library class—of the ordinary edition of Mr. Conway's travels but must have missed a map on which his ascents could be followed in detail. This want is now supplied—and, thanks to the Geographical Society, very handsomely supplied—at an extremely small cost.

The original map, drawn out with great care and labour by Mr. Conway, has been reproduced by the Society in two sheets on a scale of half an inch to the mile, half that of the original drawing. It has been printed in colours, and is sold by Messrs. Stanford. If in reduction and transfer some of the detail of the original has, as Mr. Conway says, been lost, enough remains to make these sheets the most graphic representation of the physical features of a portion of the Himalayan chain yet produced.

Mr. Conway had the advantage, as he fully acknowledges in the valuable note issued with his map, of having the positions of the great peaks fixed trigonometrically for him by the Indian Survey. But the

glaciers of the Indian Atlas have no névés; those of Mr. Conway's maps are real glaciers. He has availed himself freely of the resources of photography for the record of detail. It is instructive to compare the map and photographs, and to note how characteristic a feature of the Karakoram is that alternation of steep ribs and gullies which strikes one at first on the map as exaggerated or conventional.

There is every reason to hope that the issue of this map will have effects in India similar to those produced by Adams-Reilly's work in the Alps. It should stimulate our countrymen to fresh exertions, and introduce a higher standard of delineation of the features of a mountain region into Eastern cartography. Surely the day is not far distant when Hunza will be the Engadine of Asia, and eager explorers will wander into the snowy recesses, only indicated as yet, on either side of our traveller's route, and bring back information to supplement and complete his labours. Mr. Conway has supplied an example of what may be done by one man in one season, as well as a foundation for his successors to work from.

D. W. F.

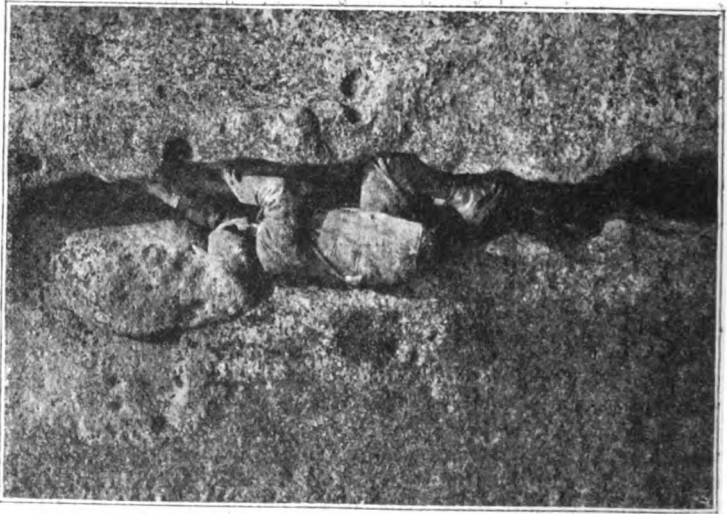
The Playground of Europe. By Leslie Stephen. New edition.
(London: Longmans, Green, and Co. 1894.)

The reissue of this Alpine classic will be a great boon to the younger generation of mountain lovers, many of whom have doubtless unsuccessfully endeavoured to procure copies of the first edition, long out of print. The author states that he has 'suppressed two chapters, one upon the "Eastern Carpathians" as irrelevant, and one upon "Alpine Dangers" as obsolete,' and that he has 'substituted for them three papers written at a rather later period—one upon the "Col des Hirondelles," from the "Alpine Journal," and two, "Sunset on Mont Blanc" and "The Alps in Winter," from the "Cornhill Magazine."' Whilst regretting the loss of any of the contents of the original edition we welcome the additions, and especially the 'Sunset on Mont Blanc,' where once again the great peak's supremacy is affirmed and an admirable word picture given of one of the glorious effects which this mountain provides in almost unique profusion.

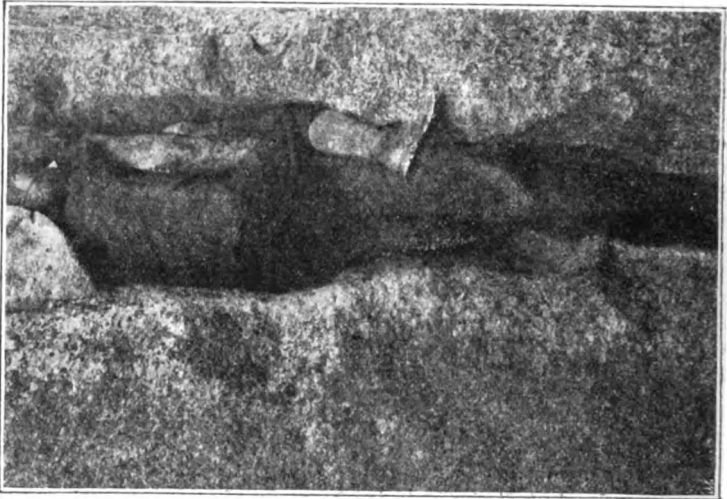
Climbing in the British Isles. I. England. By W. P. Haskett Smith, M.A.
With illustrations by Ellis Carr. (London and New York: Longmans, Green, and Co. 1894.)

This little work of less than two hundred small pages marks a distinct epoch in British holiday-making. It admits publicly, if not proudly, that there is a class of travellers who 'climb for climbing's sake,' to whom the ordinary guide-books are unattractive or useless, and who value hill scenery not in proportion to the majesty of outline or grouping, or even the height of the mountains, but for the number of 'good bits' to be found in the rocks and gullies. To such a class the mountains at the head of Windermere are of little interest compared with the precipices of Great Gable or the pinnacles of Scafell. We are told upon the first page that this book is one of a series of three, and that volumes upon Scotland and Wales are in preparation. Why

CLIMBING IN THE ENGLISH LAKES.

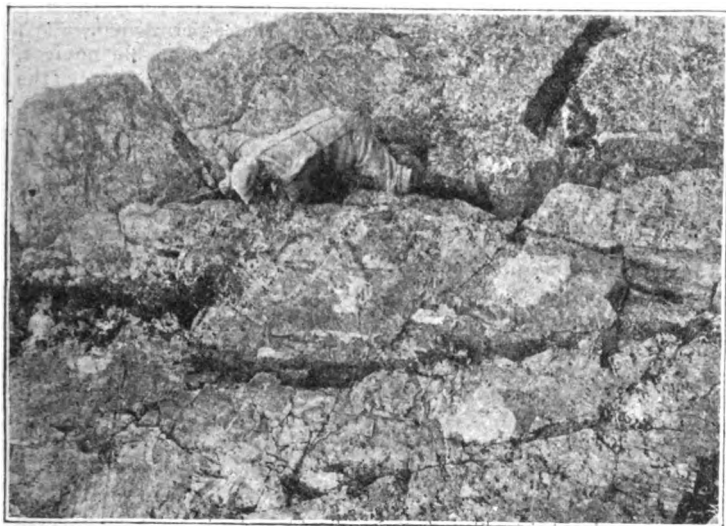


AN AWKWARD CHIMNEY. A. Holmes, phot.

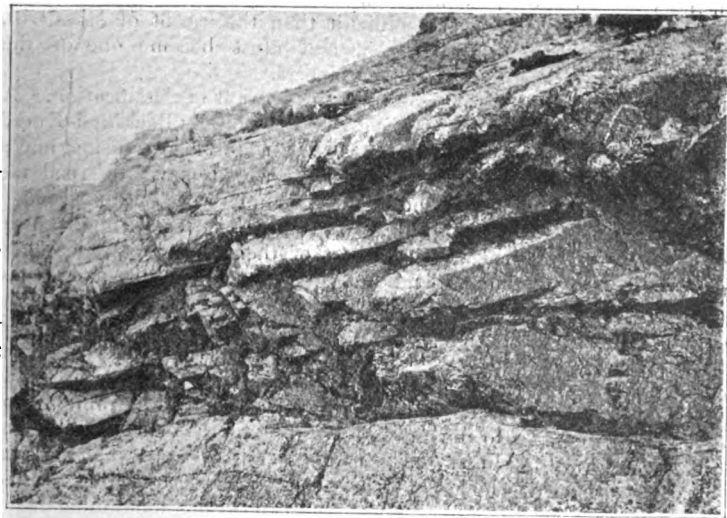


'STUCK.' A. Holmes, phot.

CLIMBING IN THE ENGLISH LAKES.



A. Holmes, phot.
ASCENT INTO SAVAGE GULLY, PILLAR ROCK.



A. Holmes, phot.
NEEDLE ARÊTE, GREAT NAFES.

Ireland should not also have a volume we do not know, as there must be many cliffs and precipices on the west coast and elsewhere well worthy of the attention of even the most experienced cragsmen.

Mr. Haskett Smith tells us that his aim has been to enable novices, first, to find suitable places where they may test and apply the principles of climbing as laid down by acknowledged authorities, and, secondly, to understand the technical and local terms so frequently used in the descriptions already published, and with this object he has given us an introductory chapter, and a long strictly alphabetical catalogue of climbs, principally in Cumberland and Westmorland, mixed up with explanations of various names and technical phrases, together with a number of admirable illustrations by Mr. Ellis Carr. Of these we cannot speak too highly. Omitting much of the detail which so often makes photographs unsuitable for illustrating a climb, but without losing all the beauty of the pictures, Mr. Carr has succeeded by a few bold lines in bringing out the main features, or, as it is sometimes called, the 'bone,' of the mountains, and has not only made it easy for the traveller to find his climbs, but has shown him beforehand something of the nature of the different obstacles.

The descriptions of the climbs are clear, and as far as the present writer can judge most accurate. The principal regret is that the natural modesty of the author has prevented him from sufficiently recording his own share in the exploration of the cliffs of the Lake District. To have made the first ascent of Napes Needle, the Scafell Pillar, Steep Gill, and the Ennerdale face of the Pillar Rock proves him to have both perseverance and skill of the highest order. It is to be regretted that this last climb, with the several variations recorded in the *Wastdale Book*, has not been more fully described, as now that the routes are known it is less difficult than the ascent of Moss Gill, to which seven pages are given, and must become one of the favourite expeditions for good mountaineers.

The fault of the book is, we think, in the want of classification. A list containing such various headings as 'Pot-holes,' 'Back-and-Knee,' 'Steep Gill,' 'Patriarch,' and 'Somersetshire' must be confusing, and a stranger going to any particular centre would have to read the whole book before he could find out what climbs were within reach.

The definitions of technical terms and expressions might have formed one chapter, especially as most of them will be applicable to the two proposed volumes, and the entries as to climbs outside the Lake District might have been collected into a second. It would also certainly have been convenient to have had the climbs on each of the well-known mountains, such as Scafell and Great End, described consecutively.

In conclusion we wish to draw attention to the admirable introduction, particularly to the author's warning of the dangers to be met with. It is known that several very good climbers have had falls in the Lake District, which would have been very serious but for the precautions taken. That a climber has ascended big mountains in the Alps with guides is no proof that he is qualified to lead a party in the Lakes, when life may depend upon his being constantly on the

alert and ready with the rope. As Mr. Haskett Smith says, men must be content to serve an apprenticeship in climbing, as in all other sports.

Report of the Department of Lands and Survey, New Zealand, for the Year 1893-4.

The Government of New Zealand is showing from year to year praiseworthy zeal not merely in the exploration and survey of the fine chain of the Southern Alps, but in the immediate publication of the results obtained by its officers. The present volume contains interesting reports on geysers and thermal springs, and on the present state of the country immediately round the site of the famous eruption of Tarawera in 1886; but the contributions of chief importance for mountaineers are those dealing with the Westland Alps, by Mr. C. E. Douglas, and with the Franz Josef glacier, by our member, Mr. A. P. Harper, both freely illustrated with photographs, maps, and diagrams. We gather that animal and vegetable life ceases in this region at a relatively low level. Spiders, as in other glacial regions, are common on the ice. Scrub begins at 3,000 ft. and ends at 6,000 ft. The highest vegetation found was at 8,000 ft. Birds are being destroyed by cats run wild. Edelweiss is common. Of the exploration of the Franz Josef glacier made by these two gentlemen we shall speak in a later number of the 'Journal,' but a few facts of scientific importance demand notice here. Remarkable changes in the snout of the glacier were observed during the hot weather. The level of the ice at the snout fell about 70 ft. between November 1 and the end of January, and the snout retreated as much as 2 chains, though during a short period it advanced. It seems probable that the glacier advances in the winter, though on the whole it has retired during the last twenty years. To measure the rate of the glacier's motion two lines of rods were set up across it. In the lower the daily rates of motion were at the side 5 in., and in the middle 132·75 in.; in the other, higher up, they were 23·6 in. and 207 in. respectively. Observations were also made proving that the surface ice moves much faster than the ice beneath it. The exceptional rapidity of the movement of this glacier is probably to be accounted for by the fact that it descends to within 700 ft. of the sea-level.

Catalogo Generale della Biblioteca del C. A. I. (Florence Section.) (Florence, 1894.)

The second edition of this catalogue shows how actively the interests of mountaineering are pursued, not merely by the central organisations of the foreign Alpine clubs, but by the principal sections. The library of the Florentine section, we learn, now consists of over 1,000 volumes. Mr. Budden, in an introduction, points out the importance to mountain students of the power of access to such a collection, and takes occasion to mention some of the best existing private collections of Alpine books. Would it not be a good thing if our own members were to form such libraries in the chief provincial cities? One is, we understand, actually in process of formation by the 'Yorkshire Ramblers,'

who are thereby setting a good example. The application of the section system to England, in a modified form, might perhaps be productive of this amongst other valuable results.

Bollettino del C. A. I. Vol. xxvii. or No. 60. (Turin. 1893.)

This volume of the 'Bollettino' contains several articles of special interest to English mountaineers, the most remarkable being Signor Guido Rey's on the Colle Gnifetti, and that by Signor C. Restelli on the ascent of the Nord End from Macugnaga, both expeditions accomplished in the first week of September 1893 under Mattias Zurbriggen's leadership. Our Italian colleagues have not yet begun to suffer from the blight that has overtaken Alpine literature in England. They do not hesitate to tell their tale in a leisurely manner, as though they enjoyed the telling of it. The Gnifetti col is situated between the Zumstein Spitze and Signal Kuppe (or Punta Gnifetti) of Monte Rosa. The ascent was made from the Marinelli hut, and coincided with the Italian route to the Dufour Spitze as far as the bergschrund below the highest rocks. The ascent was completed by a long traverse to the left. It is known that the Nord End was climbed by Signor L. Brioschi from Macugnaga in 1876, but no account of the ascent was published. Signor Restelli's researches have supplied that omission, and he has made the ascent by another route. Both lines of ascent start from the Marinelli hut, but the 1893 party kept throughout to the left of the route followed in 1876. Both routes are clearly marked on an excellent diagram. Signor Sinigaglia's account of a series of expeditions made in the Dolomites will be useful to the future guide-book writer, and the same will be true of Signor Gerla's article on the Weissmies Grat and of two others dealing with the Charbonel region. The whole volume is full of interesting matter and is well illustrated.

An Account of Shelley's Visits to France, Switzerland, and Savoy in the Years 1814 and 1816, with Extracts from 'The History of a Six Weeks' Tour,' and 'Letters Descriptive of a Sail round the Lake of Geneva and of the Glaciers of Chamouni.' First published in 1817. By C. I. Elton, with illustrations. (London: Bliss, Sands, and Foster. 1894.)

Shelley was assuredly no mountaineer, nor, so far as we know, is our only possible Poet Laureate a seaman. Yet both Shelley and Mr. Swinburne have described mountains and sea with the utmost felicity. Short cuts are possible to genius, and poets have the privilege, in common with painters like Turner or Mr. Watts, of grasping, as it were by intuition, knowledge that comes to others only by long experience.

It must, however, always be worth while to ascertain exactly the extent of a poet's travels, and to peruse the first record of his impressions. With regard to Shelley and the Alps, it has not been easy for the public to do this of late years, and Mr. Charles Elton has done well in reprinting the extracts and letters mentioned in his title. They give a first-hand account, in Shelley's own phrase, 'of the desultory visits of a party of young people to scenes which are now familiar to their countrymen.'

Any one who takes the trouble to read among the journals of the early visitors to Chamonix must be struck by their uniformity. The rôle of the tourist was cut out for him already. The Mont Envers and the source of the Arveiron were the inevitable excursions; on the path half-way to the former was a 'mauvais pas,' where silence was enjoined by the guides on account of avalanches. The Shelleys do not escape from the programme. They do not even avoid the conventional comparison between Savoy and Matlock! They think Ducrée (Ducroz?), their guide, 'the only tolerable person in the country.' But how different to most diaries are the eloquent descriptions of the beauties of the Vale of Servoz—hardly known to a generation which travels by the new highroad—and of the sublimity or 'horror' of the Mer de Glace. 'Horrible deserts' the poet still calls the snow wastes, reflecting for a moment the old feeling he was to do much to destroy. And how true and vivid are the few lines in which the scenery of Geneva and Luzern and the Jura are in turn characterised!

Mr. Elton has written a long introduction, a running commentary on the diary and letters, which is pleasant reading. In matters of detail it is here and there scarcely exact. Byron adopted 1,000 ft. as the depth below Chillon from contemporary measurements of the deepest part of the lake. We have now the elaborate surveys of the Federal staff, and 'if close to the walls the water is said to be 800 ft. deep' the saying is not in accordance with fact. Shelley's 'Morche' is the Mortine, an old name for the Buet. The 'Chartreuse du Reposoir' never 'stood in the flat valley near Siongy,' nor has it been destroyed. It stands to this day in the seclusion of a high glen under the cliffs of the Pointe Percée. Passy was never, we believe, in 'the Salassian territories,' nor do the inscriptions found there necessarily 'indicate a trade route.'

Mr. Elton supplies a picture of the Lac de Chède, but gives no hint that it has for years ceased to exist. He writes, 'It is believed that a few bouquetins remain on Mout Iséran, where they are strictly preserved by the King of Italy.' In this Journal it is quite needless to correct the old confusion between the Grand Paradis, an old pass, and a minor summit involved in this statement. 'Plainpalais' does not extend from the walls of Geneva to the Mont Salève; according to works of the beginning of the century, it was limited by the Arve. But these are all trifling blemishes, which may easily be removed when a second edition of this elegant volume is called for.

Mr. Elton mentions the curious fact of the existence, in his possession, of an English translation in MS. of Gruner's 'Eisgebirge,' which has never been published in this country.

D. W. F.

Relation inédite d'un Voyage aux Glacières de Savoie en 1762 par le Duc de la Rochefoucauld-d'Enville. Avec Introduction et Notes par Lucien Raulet. (Paris: Club Alpin Français. 1894.)

This reprint of an article first issued in the 'Annuaire' of the French Alpine Club is a useful addition to the records of visits to Chamonix in the last century. The value of it is greatly increased

by the care and knowledge with which M. Raulet—who is the honorary librarian of the Society of Commercial Geography at Paris—has edited the Duke's manuscript and the numerous references he has given to works of the last century containing mentions of the famous 'Glacières de Savoie.' French writers have been severe on the claims of our countrymen Pococke and Windham to be in *any sense* called discoverers. Here is what the first French tourist to visit Chamonix, writing in 1762, says: 'Cette année-là (1741) devait être à jamais fameuse par la grande découverte des glacières. M. Windham, jeune Anglais, qui avait alors à peu près vingt ans, entreprit ce pénible voyage et mit l'aventure à fin: il fallait être Anglais ou chevalier errant; il était Anglais.' The Duke had a turn for science and carried instruments. Like many mountaineers he had the misfortune to break them at starting. But he collected all the information, topographical and general, he could. At Chamonix the party lodged at the Priory in preference to the 'cabaret.' Eggs and milk and strawberries, he reports, is the only food, and those who want salt meat must bring it with them. Gambling was not unknown, having been introduced by the members of the commune who had spent their youth in Paris. He thinks it desirable to take pistols, if only for the sake of the echoes. He repeats a most fantastic glacier theory suggested to him by Abauzit. The whole account is entertaining. Unluckily the map alluded to by the Duke as accompanying it has not been recovered. D. W. F.

Vade-mecum to the Alpine Flora. By L. and C. Schröter.

We have received a copy of the fourth edition of the English translation of this useful work, perhaps on the whole the handiest and most lucid of the many publications of its class, intended for the use of beginners in Alpine botany.

Les Abîmes. By E. A. Martel. (Paris: Ch. Delagrave. 1894.)

This handsome quarto volume, with its 200 maps or plans and 120 illustrations, though not exactly falling within the area of publications ordinarily reviewed in this 'Journal,' deserves, at any rate, a brief mention. It records the exploration of caverns in France, Belgium, Austria, and Greece, made by the author and others during the years from 1888 to 1893. The volume is well produced, and the illustrations, always useful and sometimes beautiful, add greatly to its value.

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CLIMBING IN THE SELKIRKS AND ADJACENT ROCKY
MOUNTAINS.

BY WM. SPOTSWOOD GREEN, F.R.G.S.

(Read before the Alpine Club, December 17, 1894.)

TO the westward of the Great Prairies of the North-West territories of British North America, the Rocky Mountains rise abruptly as a line of purple peaks clad in glaciers, and extend along the horizon as far as sight can reach to the north and south. This first rampart as seen to the west of Calgary contains many peaks of 11,000 ft., from which the glaciers descend to about 5,000 ft. above the sea level.

To the westward of the first barrier there is the deep Valley of the Columbia, and beyond it the Selkirks rise into another glacier-clad range, on which the forests grow more luxuriantly, and from which glaciers descend to about 4,000 ft. above the sea.

It is about this Selkirk range I have been asked to speak to you this evening.

My first ideas of the beautiful Alpine scenery of the Selkirks were derived from descriptions brought home by my kinsman, the Rev. Henry Swanzy, who, with Mr. Barrington, crossed the Selkirks with pack-horses in 1884, before the railway was constructed, by the pass discovered by Major Rogers. Mr. H. W. Topham, of our Club, visited this region in the winter of 1887-88, and in the summer of 1888 I went there with Mr. Swanzy, our object being to climb some of the peaks. Also I wished to commence a survey of the range, of which no map, except that of the railway-track, had yet been attempted. Accepting the railway-track, as previously determined, the extreme limits

of my survey included a section of country containing about 500 square miles. We commenced this survey on July 16, and brought it to an end on September 1. Mr. H. W. Topham returned to these ranges in 1890, and met there Messrs. Huber and Sulzer, of the Swiss Alpine Club. They made several ascents, and between them they produced a map * including a region to the south of my map, which addition ought to measure about 250 square miles, and they corrected my map with regard to the junction of the Deville and Illecellewaet glaciers, which I had wrongly assumed.

In 1891, Mr. W. S. Drewry, one of the surveyors of the Dominion Government, carried the trigonometrical survey into the Selkirks, and to his interesting expeditions I shall refer later on.

Travellers from the United States have not been idle. Mr. H. P. Nichols, of the Appalachian Mountain Club, published in 1893 an interesting account of his ascents.

This maze of mountain-glaciers and forest has thus gradually been unravelled, and still beyond the known lies the unknown, and there are fine peaks within comparatively easy reach as yet unclimbed. I say comparatively easy reach, and this brings me back to what may be of more immediate interest this evening—viz. what mountain-climbing in the Selkirks is like.

British Columbia is famous for its magnificent cedars and pines, and the forests of these trees which extend into the valleys of the Selkirks form the first and greatest difficulty in exploration.

On one occasion, after a very hard day's work, we found ourselves camped only $1\frac{1}{2}$ mile from where we started in the morning. We were carrying double packs, and the only difficulty in our way was forest. But such forest! The trees were tumbled about and packed almost like the sticks in a rook's nest.

On reaching Glacier House by rail we decided on making it our base of operations. It is admirably situated near the foot of the great Illecellewaet glacier, and most comfortable in every way. Mount Sir Donald's great rock peak, 10,625 ft. high, from here looked most attractive, and from the upper portion of the glacier it seemed as though we might find our way to its summit. Before trying this, however, we

* See *Proceedings of the Royal Geographical Society* for September 1891, and *Jahrbuch* of the Swiss Alpine Club for 1890-91, vol. xxvi.

ascended a lower peak, from which I could take plane-table observations, and advance our survey from the base-line we had measured on the railway.

A few days later we camped close under Sir Donald, and ascending the great glacier turned off to the eastward, and climbed a peak on the south shoulder of that mountain, about 10,000 ft. high, but cut off from the main peak by a deep cleft which we could not cross. This gave us our first good idea of the formation of the district, and was a most interesting and useful point of observation.



ON THE WAY TO MOUNT BONNEY.

During this ascent I first saw the high rock-cliffs of Mount Bonney (10,620 ft.) rising over several intervening ranges, out of a bed of glaciers, and the Dawson range away to the southward. The strangely straight Valley of the Beaver lay at our feet, and the flat-topped Prairie hills beyond. If I could reach the summit of Mount Bonney and the summit of the Dawson range I felt my mapping

work would be complete. I hoped that I might have a try at Sir Donald by some other route, but our expeditions for the present had all to lie in other directions. To carry our camp across the Illecellewaet névé was our first thought, but to do this we needed help. After some difficulty we settled with two young men of the railway gang to come as porters, and on our second day out we got our 'outfit' up to the great flat summit of the glacier. If now we could part with our two assistants all would go well, but our provisions would soon come to an end with four men to feed. We discussed the matter with them, but as they were quite unused to mountain-travel I feared to send them back by themselves. We were therefore compelled, after a reconnoissance down the Geike Glacier, to return with them to a patch of rocks which I called Perley Rock, and camp there for the night; from this they could safely return next day. Unfortunately, however, the weather, hitherto splendid, broke that night; thunder and lightning, followed by storm and rain, which lasted until morning, ushered in a spell of broken weather, during which we descended to our base. After the weather cleared we started again by our two selves to find Mount Bonney. Camping in the forest for three days near its base, we ascended a glacier coming out of a glen to the south-westward, and reached the arête. The arête was very easy, until we came to a small peak rising abruptly from it to a height of about 300 ft. This had to be passed some way or other, and the snow was not in a safe condition to leave the arête and go around it; so we climbed its face. Shales covered with soft snow formed a most insecure foothold, and the axes were almost useless, except to scrape away and dislodge as much of the loose rocks as possible. We at last reached its top, and found ourselves on easy slopes of snow, by which we gained the summit in about eleven hours out from our camp.

The view was simply entrancing, looking down as we did upon a world almost quite unexplored. Swanzy busied himself with his camera, while I set up the plane table, and an hour on the summit passed all too quickly. Our minds, however, were far from being restful, for the thought of having that bad spot in the descent troubled us. We determined to avoid it, so descending to the left of the arête, Swanzy fixed himself firmly in the snow, while I descended by the rope to test the snow-slope on the face of the peak and see could it be thus turned.

No sooner did my feet touch the slope than it began to

slide, and, like a snowball gaining in size, it soon resolved itself into a huge avalanche, which went roaring into the valley thousands of feet below. This was evidently not the way down; and with heavy hearts, after I had scrambled back to a place of safety, we trudged up the slope, no route being possible but the arête by which we had come up.

Taking off the rope and making a bowline hitch on one end, we descended, trusting to the rope for hand-hold, then, jerking it clear of the rock it was fixed to, we hitched it on



MOUNT BONNEY FROM THE NORTH.

to one lower down, and thus reached safe footing. All now went well until we got down to the glacier, when dark night closed in, and stumbling back through the forest in utter darkness to our camp, which we reached shortly before midnight, was an experience not easily to be forgotten. The day after this ascent we were compelled to return to our base, having eaten through all our provisions.

I shall not now trespass upon your time by describing

other expeditions which we undertook, sometimes with a pack-horse, and at other times 'packing' our goods on our own backs. I must briefly sketch out what has since been done.

Mr. Harold W. Topham, in his 'Notes about the Selkirks,' in the 'Alpine Journal' for May 1891, gives an outline of his expedition in 1890, with some useful hints for future travellers, and readers of the 'Jahrbuch' of the Swiss Alpine Club will be familiar with Herr Emil Huber's paper on his climbing with Herr Sulzer, also in 1890.

Huber's first object after a reconnoissance from the summit of Eagle Peak, was the ascent of Mount Sir Donald. Camping at its foot, they climbed by a small glacier under the S.W. face of the peak to the rock wall connecting the main peak with the little peak we climbed. The passage of the Bergschrund and ascent from the glacier to the arête constituted the chief difficulty, but they gained the summit without much trouble and descended in safety.

Afterwards, combining with Mr. Topham, they made some ascents in the Dawson range and other peaks to the southward. Broken weather then put an end to this interesting expedition.

To the north of the railway track Messrs. Huber and Sulzer ascended a peak in the Rogers range of about 10,600 ft. in height. In 1892 a Government surveying party, under charge of Mr. W. S. Drewry, encamped in the valley of the Incomappleux,* to the south of Mount Bonney, and proceeded with the trigonometrical survey, which had been advanced the previous year from the Columbia to the Valley of Beaver Creek. The sketch-map published in their Report for 1892 is most useful, and, as it includes Mr. McArthur's survey of the adjacent Rockies, will be found most helpful to the future climbers who may visit this region. Mr. Drewry seems to have encountered much bad weather, and he was driven back from an attempt on Mount Bonney by avalanches, after they had waited a fortnight for the weather to give them a chance.

Looking over the maps in search for new expeditions,

* When I struck the head waters of Incomappleux I did not know what river it was, but adopted the suggestion of an old frequenter of the Selkirks that it was the Lardo, and I put this name on my map with a '?' Mr. Drewry followed it downwards, and settled its identity with the river above named.

several interesting ones suggest themselves. Mount Dawson (about 10,700 ft.), in the Selkirks, is a fine peak still awaiting its conqueror. It can easily be attacked by advancing a camp two days' journey from Glacier House.

In the Rockies, Mount Lefroy, if not yet climbed, would be a most interesting expedition, and might be undertaken from Steven House, on Hector Pass.

Much more remains to be done beyond the limits already mapped.

For many years much mystery has hung about the sources of the Athabasca, where Mount Brown and Mount Hooker were supposed to tower above all adjacent mountains to a height of over 16,000 ft. More recent travellers threw much doubt upon these measurements. Mount Brown and Mount Hooker gradually came down in the world, and so rapidly was this descent accomplished, that some United States geographer predicted that in the end it would be found they were no more than hollows in the ground. The downward career of Mount Brown has, however, been arrested, Mr. L. B. Stewart, of Toronto, who accompanied Professor Coleman on his exploring expedition, having recently climbed to the foot of the snow cornice forming its summit. Their interesting narrative, with a map, will be found in the 'Royal Geographical Journal' for January 1895. Mount Brown proved to be only about 9,000 ft. high, but other peaks which were seen, of probably 13,000 ft., will, no doubt, prove worthy of further attention. This expedition started from Morley, on the Canadian Pacific Railway, which, being on a reserve of the Stony Indians, seems to be the best place for obtaining ponies at \$20 to \$30 each, and Indian guides.

Travel in the ranges of the Rockies is much easier than in the Selkirks, owing to the forests not being nearly so dense.

With regard to sport, travellers cannot count on much unless they devote their whole time and attention to it.

In our expedition to the Selkirks we met the white mountain goats. Marmots of large size were numerous, and often proved an acceptable addition to our food-supply, as did also the blue grouse.

There are numbers of small animals, and apparently a great number of bears. We came every day upon their fresh tracks. One day a bear was within a few yards of us in the alder scrub, and yet we never got the chance of a shot.

Mr. Drewry's party was more fortunate. They shot a

grizzly within 75 yards of their camp, and saw another of huge dimensions on the slopes of Mount Bonney. They also met with tracks of deer and cariboo.

We found the climate in the Selkirks all that could be desired, the broken weather lasting for very very short spells, and consisting chiefly of thunderstorms. The weather troubled Messrs. Drewry's party very seriously; he describes it as having rained or snowed on them for fifty-five days in three months.

Everyone who has wandered among mountains far away from the beaten track knows that the greatest of all difficulties is the commissariat. Experience alone can impress this in its full meaning.

An expedition in the Selkirks to be really successful should consist of two sections—(1) the climbing party, and (2) the commissariat. The latter section must consist of one or two good men, who would see that the advanced camp was kept supplied with provisions. It is very aggravating to find on a fine morning when an ascent might be made that you have to trudge back over the ground you have travelled to fetch up the necessaries of life.

At Glacier House, Ben McCord, who accompanied us on two expeditions, can be heard of, and is a good man to organise such work. And Harry Cooper, who accompanied Huber and Sulzer up Sir Donald, is also well spoken of.

All supplies can be obtained in Calgary or Vancouver. Flour, tinned meat, bacon, &c., can be purchased at Donald, only an hour's run by rail from the summit of Rogers Pass.

The manager of Glacier House was ever ready to help us in all these respects.

The mosquitos are very bad in July; therefore take a piece of netting to form a door to your tent. They vanished quite suddenly in August.

Since the time of our visit various paths have been cleared through the forest with a view to make easier access to places from which tourists may obtain good views of the glaciers. As these paths penetrate far into some of the valleys, they will be found of much use to those who may wish to explore the regions beyond.

SPITZBERGEN.*

BY THE EDITOR.

WITH the development of facilities for travel it seems likely that Spitzbergen may be brought, in the near future, within the range of a summer vacation. The name, says Scoresby, is derived 'from the numerous peaks and acute mountains observed on the coast.' The islands present many attractions. The summer climate is agreeable; there is plenty of sport to be had; there are mountains to be climbed and the whole interior to be explored. The glaciers are of vast dimensions. The north coast admits the traveller to truly Arctic scenery, and from the hills that fringe it the northward view is thoroughly characteristic of the highest latitudes. It may not, therefore, be uninteresting to point out what has already been done in this region and what remains to be accomplished. The country is wholly uninhabited. Various parties have wintered in it, and a famous Russian hermit spent no less than sixteen consecutive winters there. The Gulf Stream flows against the west coast and gives to it the mildest climate in the world for so high a latitude. Rain has been recorded as falling there on Christmas Day. The east coast is unusually infested with ice, and even at the end of summer is difficult to approach with ships. The west coast, on the contrary, can be approached very early in the year, and its central harbour, Ice Fjord, can usually be entered in May. June is the spring month, though Parry records three weeks of perfect weather in May; the summer sets in with great rapidity early in July, and autumn before September. On August 20 the sun first sets at South Cape. By the end of September the snow-fall of winter is usually laid upon the islands. July and August are, therefore, the months an intending traveller should choose.

Tromsö is the natural starting-point for Spitzbergen, which lies only about 300 miles off (325 miles east of Greenland). On the way Bear Island is passed, a low,

* These notes are derived from the following authorities: *The Arctic Voyages of A. E. Nordenskiöld*, London, 1879; Parry's *Narrative of an Attempt to Reach the North Pole*; J. Larmon, *Yachting in the Arctic Seas*, London, 1876 (with a valuable table of voyages and dates); Beechy's *Voyage of Discovery towards the North Pole*; W. Scoresby's *Account of the Arctic Regions*, Edinburgh, 1820.

levelish, barren place, rising only at one part to the craggy Mount Misery (1,200 ft.), which falls abruptly to the sea and whose cliffs are haunted by millions of sea fowl. Nordenskiöld landed there in 1864, but had no time to ascend the mountain. Scoresby describes the island as 'somewhat of a saddle form, being high at each end, low in the middle. On the north-east end are three regular hills of considerable elevation, covered, in general, entirely with snow; the south-west end is more irregular. When Barentz and Heemskerke discovered Cherry (*i.e.* Bear) Island, on their advance towards the north, when they also discovered Spitzbergen, some daring fellows among their sailors, who had been collecting birds' eggs, climbed a high, steep mountain, resembling those of Spitzbergen, where they unexpectedly found themselves in a most perilous situation; for, on turning to descend, the way by which they had advanced presented a dismal assemblage of pointed rocks, perpendicular precipices, and yawning chasms. The view of the danger of the descent struck them with terror. No relief, however, could be afforded them, and they were obliged to make the attempt. They soon lost the track by which they had reached the summit, and were bewildered among the rocks. At length, after a most anxious and painful exercise, in which they found it necessary to slide down the rocks while lying flat on their bodies, they reached the foot of the cliff in safety. Barentz, who had observed their conduct from the shore, gave them a sharp reproof for their rash temerity.'

Spitzbergen used to be much frequented by whalers from Holland, Hamburg, and elsewhere; but the whales are now extinct in this region. The memory of the whalers is preserved by many graves; one, in Treurenberg Bay, noticed both by Parry and Nordenskiöld, bears the date 1690. The industry began to flourish in the early part of the seventeenth century, and was still carried on at the time of Parry's voyage in 1827. In its most flourishing period Smeerenburg (Blubber Town), or New Amsterdam—described as perhaps the best harbour in Spitzbergen—on Amsterdam Island, at the north-west angle of the group, is said to have been visited by as many as 18,000 men in a single summer. Indeed, it arrived at such a degree of civilisation that 'hot rolls' were to be had every morning for breakfast. Large train-boiling establishments were erected here by the Dutch. Later, Russians built huts at many points along the coast, and carried on fishing and

hunting, their principal game being walruses, foxes, bears, and seals; but their visits gradually ceased. Only Norwegians now visit the islands for walrus-hunting.

The southern portion of the west island is the most mountainous and the least known. The highest peaks of the group, Horn Sounds Tind, or Hedgehog Mount, are near and lie to the south-east of Horn Sound, the most southerly inlet on the west coast. Here Torrell landed in 1858, towards the end of June, when the snow was melting with incredible speed. He explored the glaciers and country in the neighbourhood, but I am not aware that he ascended any peaks. This harbour does not appear to be a practicable landing-place in all states of the weather, nor early in the season. Unfortunately the southern part of the island, the most interesting portion for mountaineers, is likewise the most infested with fogs. Nordenskiöld, writing in July 1864, says—

‘After passing Dunder Bay an impenetrable fog came on, which did not lighten till midday of the 29th. As it dispersed the most majestic picture that Spitzbergen has to offer, the white tops of Horn Sounds Tind glancing in the sun, became visible. These mountains rise in three steep and pointed summits to a height of 4,500 ft. above the sea, and Scoresby names them as the highest and stateliest of the mountains of Spitzbergen.’*

Lamont, writing of June 26, 1869, says, ‘The day was clear and crisp; bracing air just ruffled the water. Sharp and defined, the beautiful panorama of mountain and glacier stood out against the pearl-grey sky. The view of these splendid peaks was unspeakably grand and magnificent on such a day as this. The granite cone of Hornsund’s Peak was well in sight, though between forty and fifty miles off; the dazzling snow and the rarity of the air reduced apparent distance to a fourth. The especial boldness of this part of Spitzbergen is due to each jagged peak rising at once to its full height.’

The eastern shore of this region is washed by the Stor Fjord, which, being filled by the Polar current and not by the Gulf Stream, is extremely icy. Nordenskiöld saw it (August 9, 1864) when he landed at Whales Point (Stans Foreland, or Edge Island), where there were ruins of a

* The mean of two careful measurements made by Scoresby gives 4,895 ft. as the height of Horn Sound Peak, whilst another peak a few miles further north was 3,306 ft.

Russian whalers' settlement. He climbed to the top of the cape, and describes the view as follows :—

'The whole west coast of Stor Fjord, the extreme point of which, South Cape, could with certainty be distinguished, lay in the most glorious sunshine. It appeared to consist of a confused assemblage of snowy summits of nearly equal height, among which only a few were so remarkable as to be easily recognised, as, for example, the mountains at Whales Head and Agardh's Bay. But over all those thousands of fells there rose, like the tower of a cathedral over the houses of a great city, the mighty Horn Sounds Tind, with an angular height at least double that of the other mountains. It was easy to see from this that this stately mountain is the loftiest in South Spitzbergen.'

The actual west coast of Stor Fjord, to which Nordenskiöld then crossed, is interrupted by a series of enormous glaciers descending into the sea, and divided from one another by black, often conically-shaped, mountain ridges. He landed near Lee's Foreland, on this coast, and climbed a hill 1,000 ft. high, on which he found an old Russian cross.

Before quitting Stor Fjord reference must be made to the two islands, Stans Foreland (or Edge Island) and Barentz Land, that bound it on the east. The west shore of Stans Foreland is formed by a rock cliff, about 1,000 ft. high, which supports a snow-free plateau, and is only interrupted by one great glacier with an immense moraine. There are doubtless, therefore, considerable areas of exposed crag in the interior. Count Zeil and Baron von Heuglin visited this island in 1870, and climbed a high hill at Mount Middelndorf, its N.E. angle, whence they saw, away out in the sea to the east, the little-known Wiche's Land, which was first landed on and sailed round in 1872 by some Norwegian walrus-hunters.

Speaking of the great glaciers on the east coast of Stans Foreland, opposite Ryke Yse Islands, Lamont says they are 'arms or branches of that vast *mer de glace*, or body of solid ice, which occupies all the interior of the country, and which, like an enormous centipede, extends its hundred legs down nearly every valley to the sea on both sides of the islands. On the coast between Black Point and Ryke Yse Islands there are three glaciers. The two southernmost ones are not of any great size or in any way remarkable; they have each a sea front of about three miles, and protrude into the water for one and a half or two miles. The third or northernmost of these glaciers is one of the largest and most remark-

able in Spitzbergen, or perhaps in the world. It has a seaward face of thirty or thirty-two English miles, and protrudes, in three great sweeping arcs, for at least three miles beyond the coast line. It has a precipitous and inaccessible cliff of ice all along its face, varying from twenty to one hundred feet in height. . . . This vast glacier is in three great divisions: the northern and southern divisions are each quite smooth and glassy; but the centre one is broken up, and rough and jagged to a degree that is perfectly indescribable; at a little distance it exactly resembles a great forest of pine trees thickly covered with snow.

‘The low hills which border Deeva Bay have a very strong resemblance to the long, dreary ranges of limestone hills which hem in the valley of the Nile on both sides from Cairo to the Cataracts; and this similarity exists both in their size, shape, slope, and general aspect as well as in the solitude and almost total absence of life and vegetation. The glacier lies about half-way up this west side, and, extending almost into the water, pushes before it a huge moraine of mud and *débris*, the base of which is washed by the sea, rendering the latter quite shallow and muddy for several miles round.’

In Barentz Land, by Geneva Bay, Nordenskiöld, in 1864, climbed Edlund’s Mount and had a fine view. The inland ice was ‘level, and as easy to walk on as a floor.’ Passing through the neighbouring Heelis Sound, he landed on the main island and climbed White Mount, whence, he says in his generous fashion, the view is the grandest to be found on Spitzbergen. Wiche’s Land was visible about 120 miles away to the east, crowned by two cupola-like mountains.

‘Between this land and Spitzbergen the sea was covered with large unbroken ice fields. In the north and north-east were visible, as far as the eye could reach, the mountains of North-East Land and Hinlopen Strait, and the strait itself, with its islands, which now’ (about August 24) ‘appeared to be surrounded with quite ice-free water. Nordenskiöld recognised Lovén’s Mount, visited by him in 1861. Between it and White Mount rose the high, snow-covered fell-tops of Thumb Point, and right behind these ran a long, very crooked sound, into which several glaciers fell. The interior consisted of an endless, desolate snow wilderness, broken only here and there by some black, solitary stone masses, strongly contrasted with the blinding white ground. Far away in the west and north-west more continuous mountain chains appeared. The whole of the west and north coast of Stor Fjord was also visible as far as Whales Head, and the whole

north part of Barentz Land, the northern extremity of which consists of a considerable glacier, much split up, projecting into the sea.'

Lamont ascended two hills in the neighbourhood of Hell Sound. One was 'a truncated cone of plutonic rock, of a singularly grand and picturesque appearance. It seemed to be about 600 ft. high, and two or three miles in circumference at the base. The lower two-thirds of its height consisted of a steep *talus*, covered with beautifully variegated mosses, while the upper third was composed of a series of bright russet-coloured columns of rock arranged perpendicularly, and looked exactly like a number of half-decayed trunks of enormous trees bound together in a sort of Titanic fagot.'

Crossing the mouth of Hinloopen Strait, along whose western shore, according to Parry, are hills of rounded form separated by big glaciers, we come to the fourth island, which is called North-East Land; but, as this is generally approached by way of the north coast, it will be better to return first to the South Cape and consider the west coast and its mountains.

'The whole of the west coast,' says Scoresby, 'is mountainous and picturesque; and, though it is shone upon by a four-months' sun every year, its snowy covering is never wholly dissolved, nor are its icy monuments of the dominion of frost ever removed. The valleys opening towards the coast, and terminating in the background with a transverse chain of mountains, are chiefly filled with everlasting ice. The inland valleys, at all seasons, present a smooth and continued bed of snow, in some places divided by considerable rivulets, but in others exhibiting a pure, unbroken surface for many leagues in extent. Along the west coast the mountains take their rise from within a league of the sea, and some from its very edge. Few tracts of table-land of more than a league in breadth are to be seen, and in many places the blunt terminations of mountain ridges project beyond the regular line of the coast and overhang the waters of the ocean. The southern part of Spitzbergen consists of groups of insulated mountains, little disposed in chains, or in any determinate order, having conical, pyramidal, or ridged summits, sometimes round-backed, frequently terminating in points, and occasionally in acute peaks, not unlike spires. An arm of a short mountain chain, however, forms the southern Cape.'

The next inlet into the west coast, north of Horn Sound,

is Bel Sound, which has been visited often. There are mountains around it, but I have found no record of any ascents. Horn and Bel Sounds lie south of the warm current, and are usually blocked with ice long after Ice Fjord is clear. Horn Sound is often inaccessible till late in July. The Gulf Stream flows against and envelops Prince Charles Foreland, and lapping round each end enters Ice Fjord and King's and Cross Bays. The coasts are colder at points lying either south or north of this current, and the ice lasts longer. Ice Fjord is the main harbour of the west coast and the best known part of Spitzbergen. Its climate is the mildest in the whole country. Hills surround it, and its many branches, and its shores have been landed on at almost every point.

'The entrance to Ice Fjord,' says Lamont, 'is unspeakably grand. To the north Dödmansören (Deadman's Ears)—a prominent headland of stratified rock—stands like a huge sentinel, in all the majesty of its 2,500 ft. of height. Perpendicular buttresses, looking as if regularly built in courses, are varied in one place by an appearance as if a large section of the mountain had slid from above, and turned partly over in its fall. Around Ice Fjord widely-hollowed valleys, having their mouths turned to the sea, are sheltered from the keen winds from the glaciers, and fully exposed to the warming rays of a sun which does not set for four months. Copious streams, issuing from the melting snows on the high ground, water these grassy valleys, and form scattered lakes covered with water-fowl. Assuming the chart to be correct, the head of Sassen Bay, in Ice Fjord, is only twenty-three miles from Agardh Bay, in Stor Fjord; and as the valley looked very level for a long way up, and the walking good, I should think it would not be very difficult to reach Stor Fjord by walking over. There is some magnificent scenery in Sassen Bay. I was particularly struck by the appearance of one limestone mountain, several miles long. It is all one gigantic, buttressed, mural precipice from end to end, and has been appropriately named Temple Mountain.'

North of Ice Fjord, and separated by a sound from the mainland, comes the long, narrow Prince Charles Foreland. The backbone of this island, writes Lamont, 'constitutes a sufficiently striking mountain range, occupying nearly the whole sixty miles length of the island. On the west side the rise from the sea is abrupt and precipitous, but on the east the descent is more gradual.' From off Fair Foreland,

the northern termination of Prince Charles Foreland, Lamont relates, 'a very extensive prospect suddenly opens out. On this clear evening we could almost trace the whole eastern side of the island, the winding channel, the mainland with its long perspective of alternate ridge, glacier, and the indentation of English Bay. Directly ahead was King's Bay, with the Three Crowns and its great glaciers. On the other side we looked up the glowing vistas of Cross Bay, shut in on nearly every side by grand and frowning mountains. . . . It was one of the typical nights one enjoys in the quiet bays of Spitzbergen. At nine o'clock in the evening the air was positively genial. Wonderfully quiet, too, was everything beyond the noises of the ship. Absolute stillness everywhere, save occasionally when the voice of a wild bird comes away over the glassy sea was borne to the ear, or the noise falling of the edge of a glacier, like the sound of artillery discharges, was echoed from hill to hill. A clear, unclouded sky permitted the rays of the evening sun to crimson the snowy peaks, and to throw vast shadows across the glaciers.'

Scoresby, writing of Prince Charles Foreland, says that on it 'is a curious peak, which juts into the sea. It is crooked, perfectly naked, being equally destitute of snow and verdure, and, from its black appearance or pointed figure has been denominated the Devil's Thumb. Its height may be about 1,500 ft. or 2,000 ft. The "Middle Hook of the Foreland," as the central part of the chain of mountains in this island is called, is a very interesting part of the coast. These mountains, which are, perhaps, the highest land adjoining the sea which is to be met with, take their rise at the water's edge, and by a continued ascent of an angle at first of about 30° , and increasing to 45° or more, each comes to a point, with the elevation of about six-sevenths of an English mile. This portion of the chain exhibits five distinct summits, the elevation of the highest of which, as determined by Captain Phipps, is 4,500 ft., and of the lowest, by estimation, above 4,000 ft. Some of these summits are, to appearance, within half a league, horizontal distance, of the margin of the sea. The points formed by the tops of two or three of them are so fine that the imagination is at a loss to conceive of a place on which an adventurer, attempting the hazardous exploit of climbing one of the summits, might rest. . . . To the northward of Prince Charles Foreland the mountains are more disposed in chains than they are to the southward. The principal ridge lies nearly north and south; and the principal valley extends from the head of Cross Bay

to the northern face of the country,* a distance of forty or fifty miles. An inferior chain of hills, two or three leagues from the coast, runs parallel with the shore, from which lateral ridges project into the sea, and terminate in mural precipices. Between these lateral ridges some of the most remarkable icebergs (glaciers) on the coast occur.

Some of the mountains of Spitzbergen are well-proportioned, four-sided pyramids, rising out of a base of a mile or a mile and a half to a league square; others form angular chains, resembling the roof of a house, which recede from the shore in parallel ridges until they dwindle into obscurity in the distant perspective. Some exhibit the exact resemblance of art, but in a style of grandeur exceeding the rounded pyramids of the East, or even the more wonderful Tower of Babel, the presumptive design and arrogant continuation of which was checked by the miraculous confusion of tongues. An instance of such a regular and magnificent work of Nature is seen near the head of King's Bay, consisting of three piles of rocks, of a regular form, known by the name of the "Three Crowns." They rest on the top of the ordinary mountains, each commencing with a square table or horizontal stratum of rock, on the top of which is another of similar form and height, but of a smaller area; this is continued by a third, a fourth, and so on, each succeeding stratum being less than the next below it, until it forms a pyramid of steps almost as regular, to appearance, as if worked by art.

Next to King's Bay comes Cross Bay, which is very deep, after the manner of the Greenland fjords, so that the big glacier descending into it is enabled to form icebergs of considerable size, as in shallow water is not possible. The next inlet to the north is Magdalena Bay, where Nordenskiöld landed in 1861 (July 25), and climbed a hill 2,300 ft. high, on the top of which he found many plants flourishing. He also visited the neighbouring Cape Mitre, one of the few points at which Scoresby landed in the early years of this century, when he climbed to the summit of the mountain.† Beyond Cape Mitre the charts mark the Seven icebergs. These, says Lamont, are 'the extremities of seven glaciers, about equidistant, all alike in size (about a

* It was, perhaps, along this valley that certain wrecked seamen once travelled from Fair Haven to Cross Bay.

† I propose hereafter to reprint his charming account of this scramble.

mile wide and 200 ft. high) and appearance, and all descending to the sea. They are separated from each other by a series of sharp-pointed ridges of crystalline schist.' Scoresby (p. 101) gives an interesting account of these glaciers.

Passing round Amsterdam Island, forming the north-west corner of the group, and with Hakluyt's Headland, a 'bold granitic cape,' for its extreme point, we come to islands and a coast which have been well explored and are frequently visited by hunters. Along this northern shore, and towards the north-east, the land is neither so elevated nor are the hills so peaked as on the western coast. The best known islands are the Norways and Cloven Cliff, in the neighbourhood of Fair Haven. The east end of the Outer Norway Island is a hill, 700 ft. high, with a cairn on its summit. This point has often been used as a look-out station by men from ships detained here by the ice. Lamont (p. 266) describes a day's scrambling on this island and the view from it. Cloven Cliff Island is not unlike Ailsa Craig, and appears to have been climbed. Liefde Bay and Wijde Bay are two fjords which penetrate deeply into the north coast of the west island, the head of Wijde Bay being only separated by a narrow neck of land from the head of one of the branches of Ice Fjord. Near the mouth of Hinloopen Strait, west of it, is Treurenberg Bay, in whose east side is situated Hecla Cove, Parry's starting-point for his great expedition in 1827. Near the cove is Hecla Peak (1,720 feet), which was ascended by Lieut. Foster, of Parry's party, and again in 1861 by Nordenskiöld. South of Treurenberg Bay are mountains of greater altitude which do not appear to have been visited.

Beyond Hinloopen Strait comes North-East Land, a fine view of which is obtained from Hecla Peak. It is very flat along the west coast, with rounded hills of inconsiderable height. The interior appears as a flat table-land, 2,000 to 3,000 feet in altitude. The north coast is broken into many fjords, surrounded by beautiful steep-faced mountains, haunted by millions of sea fowl.

In 1861 Nordenskiöld landed between Bird and Brandywine Bays and climbed a high mountain.

'They came, at a height of about 1,500 feet, to a plateau almost free of snow and bounded on the north by Bird Bay, towards which the rocks rise (? fall) perpendicularly. From this plateau the mountain-top raised itself, covered with snow, or rather loose fine-grained ice. From its highest point there was a splendid and uncommonly extensive view

in all directions, which the glorious weather with which they were favoured enabled the Swedes thoroughly to enjoy. In the north the horizon was bounded by an endless ice field, in which from this height no opening could be distinguished, and whose uniformity was broken only at some few places by the groups of islands lying north of North-East Land, the Seven Islands, Walden Island, Great and Little Table Island, and the land marked on Parry's map "Distant High Land" (part of North-East Land). Towards the east the view was bounded by the high, desolate snow plain which occupies the whole of the interior of North-East Land. In the west, notwithstanding the great distance, it was possible clearly to distinguish the contours of the mountain-tops around the Norways and Cloven Cliff (islands at the N.E. angle of the group). In the south-west Grey Hook and Hecla Mount were visible, and to the south of the latter two isolated, very high, pointed, snow-covered summits, which were believed to be situated on the north shore of Stor Fjord.'

In the same year Nordenskiöld also climbed a mountain of 1,500 feet on the west shore of the bay between North Cape and Extreme Hook. Also, alone and unarmed, he climbed to the highest point of Scoresby Island. On the top he met a polar bear.

'I went,' he relates, 'straight towards him, supposing he would be frightened and run away, as I had always seen polar bears do when a man approached them. I had miscalculated; the bear came nearer, advancing slowly in a half-circle, and we were soon so close together that I could have touched him with a stick. He stood somewhat higher up on a block of stone, hissing and trampling with his fore feet; I stood somewhat lower, crying and hooting all I was able, and threw big stones at him with little apparent effect. At length a big stone hit one of his fore paws resting on a stone, and the pain—or perhaps satisfied curiosity—induced the animal to retreat. I followed him for a short distance till he was concealed behind a projecting rock, and then made my way as fast as I could to the boat. I had not finished relating my adventure to Torell when he interrupted me with the exclamation, "See, there he is!" and pointed to a rock about 400 feet distant, from the top of which the white sovereign of the island was surveying us.'

Proceeding further east along the north coast, Nordenskiöld again landed, and climbed (August 13) a peak of 2,000 feet immediately south of Cape Wrede, which afforded an extensive

view. Towards the horizon two small islands were seen, one high and bold, the other low and inconsiderable. They are named Charles XII.'s Island and Drabanten. They were surrounded in all directions by impassable masses of drift ice, but the sea between was pretty open.

In 1873 Nordenskiöld returned to North-East Land, and landing on the north coast near its eastern extremity he proceeded inland south-westwards over the great level glacier that drains the whole table-land reservoir of the island and empties itself eastward into the sea by a long unbroken ice cliff—the broadest glacier known. Having traversed about two-thirds of the width of the island, he was forced to turn west. Thus in fourteen days he reached the head of Wahlenberg Bay, a deep inlet from Hinloopen Strait. He kept along the north coast of the bay and up the east side of Hinloopen Strait to Shoal Point, where he rejoined his ship.

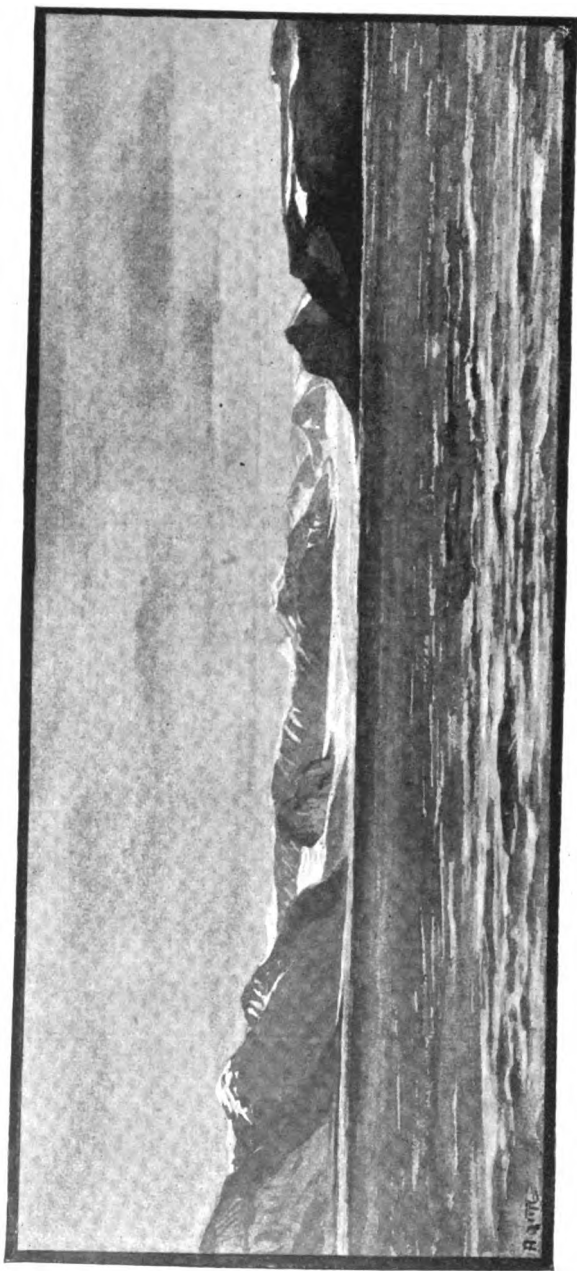
It only remains now to refer to the islands north of North-East Land, though these must remain beyond the reach of summer travellers. The most northerly are the Seven Islands, a group of defiant rocks 1,500 to 1,800 feet in height. South of these comes Phipps's Island, to the top of the south-east point of which Nordenskiöld climbed in 1873, and obtained an extensive view northward over sea covered with confused masses of unbroken ice all wedged together. In 1861 he climbed to the highest point of Martens Island, but a snow storm hid the view; and the same year he reached the summit of the larger of the Castrens Islands (1,000 feet), close to the North Cape.

To sum up: the ascents which have been made in Spitzbergen appear to be only of hills close to the shore. The hills of the interior have not been climbed. Of these the most important are situated in the southern part of the west island, probably along a watershed nearer the west than the east coast, and easily accessible from good harbours. As the islands afford excellent sport it is probable that a party of mountaineers and sportsmen combined would find it well worth while to make Spitzbergen their goal.

In conclusion I will quote Scoresby's description of the general character of the scenery.

'Spitzbergen and its islands, with some other countries within the Arctic circle, exhibit a kind of scenery which is altogether novel. The principal objects which strike the eye are innumerable mountainous peaks, ridges, precipices, or needles, rising immediately out of the sea to an elevation of 3,000 or 4,000 feet, the colour of which, at a moderate

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GRAND GLACIER, SASSEN BAY.
(FROM THE ANCHORAGE.)

distance, appears to be blackish shades of brown, green, grey, and purple; snow or ice in striae, or patches, occupying the various clefts and hollows in the sides of the hills, capping some of the mountain summits and filling with extended beds the most considerable valleys; and ice of the glacier form occurring at intervals all along the coast, in particular situations, as already described, in prodigious accumulations. The glistening or vitreous appearance of the iceberg precipices; the purity, whiteness, and beauty of the sloping expanse formed by their snowy surfaces; the gloomy shade presented by the adjoining or intermixed mountains and rocks, perpetually "covered with a mourning veil of black lichens," with the sudden transitions into a robe of purest white, where patches or beds of snow occur, present a variety and extent of contrast altogether peculiar, which, when enlightened by the occasional ethereal brilliancy of the Polar sky, and harmonised in its serenity with the calmness of the ocean, constitute a picture both novel and magnificent. There is, indeed, a kind of majesty, not to be conveyed in words, in these extraordinary accumulations of snow and ice in the valleys, and in the rocks above rocks and peaks above peaks, in the mountain groups, seen rising above the ordinary elevation of the clouds, and terminating occasionally in crests of everlasting snow, especially when you approach the shore under shelter of the impenetrable density of a summer fog, in which case the fog sometimes disperses like the drawing of a curtain, when the strong contrast of light and shade, heightened by a cloudless atmosphere and powerful sun, bursts on the senses in a brilliant exhibition, resembling the production of magic.'

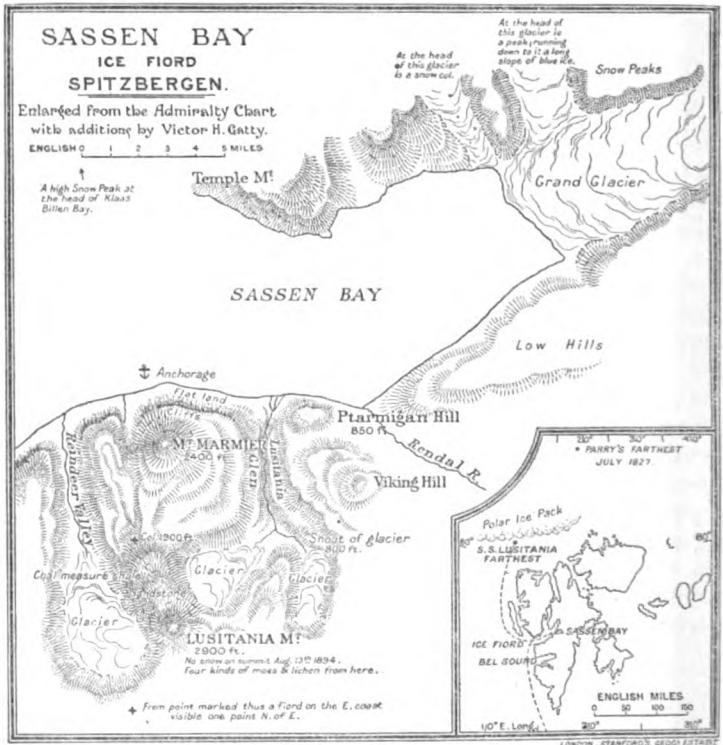
ICE FIORD, SPITZBERGEN.

BY VICTOR H. GATTY.

'IT is a strange taste to undergo so much hardship to gain a point,' said the host of a Norwegian inn to me, in a moment of candour, after a rough day on the mountains.

This taste, which, perhaps, my friend would no longer have considered so strange, the factor of hardship being more than eliminated, was catered for in an entirely new direction by the despatch of the Orient Company's boat 'Lusitania' last August to the outskirts of the Polar ice pack, in latitude 80° 30' north, the first time in the history of travel that the tourist has been found within the con-

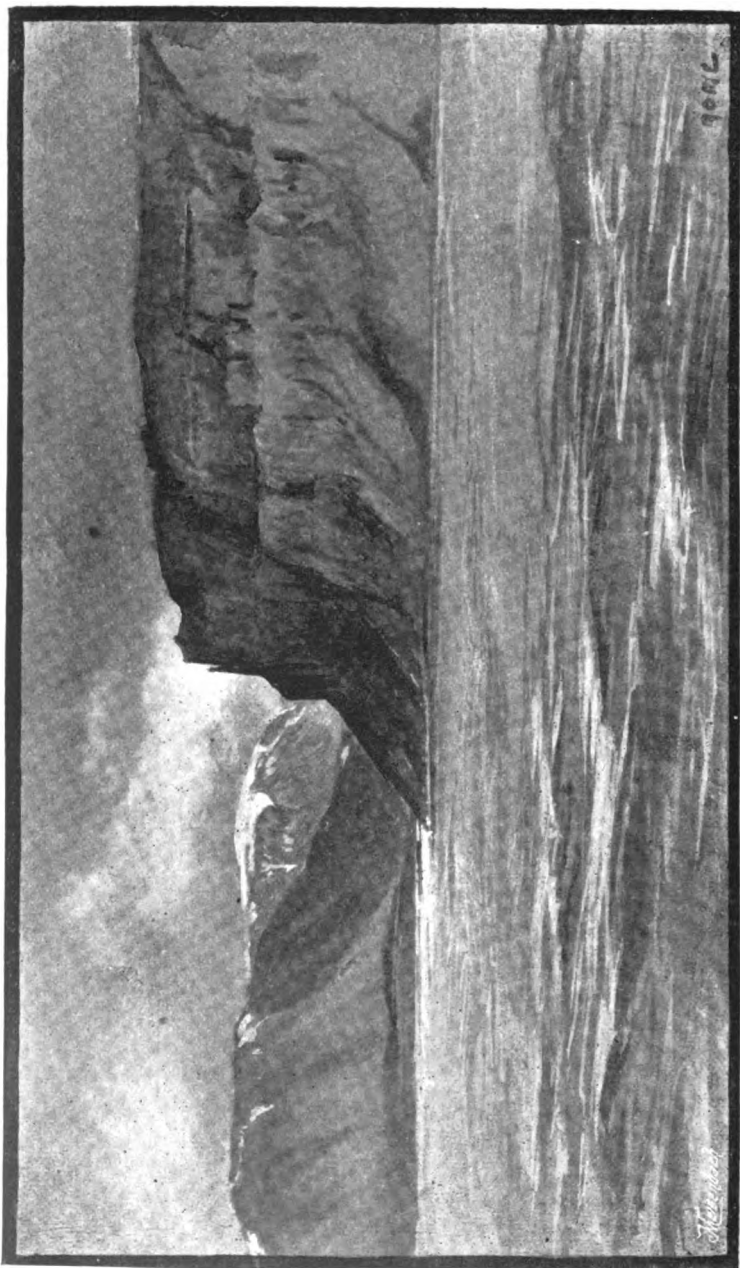
finest of the Arctic world, if a few members of that higher order who cruise in their own yachts be excepted. It is not, however, of seafaring that I have to write, although, perhaps, some excuse for its intrusion in these pages might be found in the circumstance that our decks were above the snow line, but of Spitzbergen, where we anchored some few days.



The scale of miles for the larger map is incorrect, being only two-thirds of the true scale. Below, for 'Four kinds of moss and lichen from here' read 'Four kinds of moss and lichen grow here.'

Some time ago, in a railway carriage in Switzerland, after explaining that a certain encumbrance was an ice axe, I was confronted with the question, 'And where do you find the ice?' Mindful of the excellent maxim which this little incident suggests, I will, without apology, preface my remarks with the explanation that Spitzbergen is the name given by the Dutch navigators of the sixteenth century to a group of large islands, mountainous and uninhabited, lying

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TEMPLE MOUNTAIN, SASSEN BAY, AND HILLS BEYOND KLAAS BILLEN BAY.
(FROM THE ANCHORAGE.)

between the seventy-seventh and eighty-first parallels of latitude, or about 2,000 miles to the north of London, and from 400 to 500 from the most northerly point of Europe. In such latitudes, within 700 miles of the Pole, it might be expected to find the snow line at the level of the sea. Lamont, in his well-known work on the group, compares the country to the Alps submerged to the line of perpetual snow, and it is the object of this paper to investigate, so far as limited observations will permit, how far this comparison holds good.

On the evening of August 11, 1894, we entered Ice Fiord, after a prolonged groping in the sea fog outside, and anchored at the head in Sassen Bay, an event which was celebrated in truly British fashion by a cricket match on deck, whilst the midnight sun gilded the snow peaks at the foot of the fiord; and, lest there should be any misapprehension as to the quality of the display, I may mention that Alfred Shaw, of Notts, was bowling. Ice Fiord is a long arm of the sea running up from the west coast eighty miles into the island of Western Spitzbergen, almost cutting it in half. Probably there is no place where a better idea of the interior can be obtained with less difficulty, and it is the dividing line between two districts of entirely different character.

On the morning of the 12th I found myself on the mossy flat which skirts the southern shore of the bay, and soon afterwards on a low hill to the eastward, crossing on the way a glacier-fed torrent by means of a solid snow bridge little above sea level. This hill, which I have named Ptar-migan Hill, has a broad flat top, covered with moss and shingle, 850 feet above sea level, and is a well-placed viewpoint. Looking westwards the fiord is of the same bright green blue as the glacier stream fed lakes of Switzerland, flecked here and there with white blocks of ice from the surrounding glaciers. Beyond it, cutting off the outlook to the open sea, juts out a promontory, entirely covered by great glaciers, protruding into the water, divided by ridges of low peaks of blue black rock deeply embedded in snow. Right across the bay is the long, level-topped Temple Mountain, rising precipitously from the sea in cliffs of a peculiar formation, common in Spitzbergen, but which I have never come across elsewhere; it has the appearance of tiers of conical-shaped barrels, ranged one upon another, and is crowned by an ice cap which seems to have no motion, as there are no signs of avalanches. To the right

of this are other snow-capped peaks, and between them a small glacier running up from the sea to a snow col, with more rock and snow peaks showing over it. Then running into the water at the head of the bay is the big ice stream named on the Admiralty chart the Grand Glacier; it is divided into two branches, north and east, a medial moraine marking their junction. The latter branch, much the larger, is bounded on the south by a low black plateau, bare of snow, and on the north by a multitude of snow-clad hills. The northern branch runs up to a peak which is sheathed in what appears to be blue ice from top to bottom. These mountains, though snow and ice clad, and rising above glaciers, have something wrong about them to an Alpine eye: the ice and snow appear to be distributed without any regard for consistency, if nature may be charged with such a fault; one peak has snow-covered slopes and a round brown summit; another, embedded in snow, shows shaly flanks above, whilst a third is ice-clad from top to bottom. They suggest rather a hill country after a winter of immense severity, than the upper portion of an Alpine region; the large flat glaciers, owing their origin to the vast inland reservoirs of ice, seem rather to bury than to spring from them.

Westwards of the plateau is a long bare black valley with a straight wide river running down it; at the head is a range of hills, of between two and three thousand feet in height, which might have been transplanted from some Yorkshire dale. Their broad flanks and rounded summits are bare and brown, without a trace of ice or snow, but in every hollow lies a glacier. Their origin in the accretion of winter snow drifts, too deep for the summer sun to melt, is obvious at a glance. They form at once a perfect object lesson in the way that glaciers grow and a picture of our own hill country in the far-off ice age.

The country south of the bay is a land of mossy glens and barren hills, many of them free from snow, excepting in occasional rifts. At the head of the glen running south from Ptarmigan Hill is a glacier of considerable size ending in a tongue-like snout. I afterwards walked up to it, and found it to be 800 ft. above sea level; it has retreated 200 yards from the main terminal moraine, leaving smaller ones between. In other parts of the island glaciers have come down and filled formerly moss-grown valleys, and even anchorages marked in the charts of the Dutch whaling period, so this can hardly be due to an amelioration of the

climate. The hill at the west head of the glen also bears a glacier on its flank, descending in an unbroken sheet of ice almost from the summit—this is the peak named after the ‘Lusitania,’ which I afterwards ascended.

The bibliography of Spitzbergen mountaineering is not extensive; one of the most interesting passages is to be found condensed in a page of Lord Dufferin’s ‘Letters from High Latitudes.’—Describing his visit to English Bay in August 1856, he says that all vegetation ceases when you ascend 20 ft. above sea level, where the thermometer then stood constantly below freezing point, and continues, ‘Every step we took unfolded a fresh succession of these jagged spikes and break-neck acclivities in an unending variety of quaint configuration. Mountain-climbing has never been a hobby of mine, so I was not tempted to play Excelsior on any of these hill-sides; but for those who love such exercise a fairer or more dangerous opportunity of distinguishing themselves could not be imagined. The supercargo of the very first Dutch ship that ever came to Spitzbergen broke his neck in attempting to climb a hill in Prince Charles Foreland. Barentz very nearly lost several of his men under similar circumstances, and when Scoresby succeeded in making the ascent of another hill near Horn Sound it was owing to his having taken the precaution of marking each upward step in chalk that he was ever able to get down again.’ In descending he made what was probably the first *glissade* ever indulged in in Spitzbergen, coming to an expanse of snow which, being soft, he ‘entered upon without fear.’ The snow, however, as is sometimes the case elsewhere, suddenly gave place to a ‘surface of solid ice,’ over which they ‘launched with astonishing velocity,’ whilst their friends below, not unnaturally, ‘viewed this latter movement with astonishment and fear.’

With such alluring prospects a fellow ‘Lusitanian’ and myself set out for an expedition on the hills. Our object was not altogether indulgence in the pure delight of mountaineering, but was tainted with a lust for the blood of reindeer; so, with a view to combining both pursuits, we went armed, one with an ice axe, one with a rifle. The portorage of the latter weapon, it must be admitted, would have been labour entirely in vain had it not been for the unsophistication of a covey of ptarmigan, one of which in the indulgence of a useful curiosity was beheaded with a bullet.

On the morning of the 13th we were put ashore on the south side of Sassen Bay, and commenced to ascend a gully running into the slopes of Mount Marmier. This gully has evidently been formed by the stream which issues at the base, but which no longer runs down it, but comes out of an ice-arched cave in the hill-side at the bottom. All the smaller hill streams are more or less bridged with ice. This one, whilst in that condition, has evidently been covered by a landslip from the hill above, and so formed into an ice tunnel protected from melting for ever. The gully carried a heavy snow cornice on its eastern rim (although the ground above was bare), so we scrambled out on the other side and found ourselves on the E. skirt of the hill above a big glen. In the glen and on the hill-side reindeer had been shot the day before, but nothing now was to be seen except their tracks, which were everywhere in plenty. We followed round the shaly slopes of the hill until a col was reached, 1,900 ft. above sea level, dividing it from another and higher hill beyond. From this point, which is clear of snow and decked with a scanty growth of mosses, a tuft of the rare plant glass, and even flowers, there is a view of considerable extent, reaching over a tract of bleak hills and valleys to a blue fiord on the east coast, just visible below the hanging clouds, its shores still white with snow. To the north across the bay, just west of Temple Mountain, appeared a true snow peak, apparently of considerable height. On each side, looking southwards, there were glaciers filling the heads of the glens on either hand, and between them a ridge running up into the mist which now hung a little way above. I had studied the ridge the day before, and knew that there would be no difficulty in following it; so we went on upwards, resolved to see what greater altitudes could show. The ridge was broad, not very steep, and composed at first of black coal measure shale, and higher up of yellow shale with sandstone crags cropping out in places. Occasionally we came to short slopes of ice, requiring a few steps to be cut, and above the last a short pitch of broken rocks led up to the summit, a rounded shaly ridge a few yards wide, which we reached in $4\frac{1}{2}$ hrs. from the shore. Here, at a height of 2,900 ft., there was no snow, and the thermometer showed a temperature of 42° F., very little less than at sea level; and, contrary to all expectation, here were growing four kinds of mosses—sparingly, it is true. One of them I subsequently met with again on the summit of the Romsdals-horn. Owing to the mist there was no view whatever,

except the beginnings of the ice slopes running down to the glaciers on each side. The foot of the one on the east I had found to be 800 ft. above the sea, so that the ice slopes ran down 2,000 ft. below us, actually springing from a rounded summit very well capable of bearing a snow cap, but instead of which producing vegetation. This is an anomalous state of affairs to be seen on many of these hills, which is apparently due to the vast difference between the long snowy night of winter and the endless summer day, which melts all the snow that has not been consolidated by pressure into ice or drifted into layers too thick to penetrate. We named the peak in honour of the first ocean liner which has ever sailed those northern waters, but forgot to leave our cards on the summit, a courtesy customary on a first ascent which would not have been intentionally omitted on account of the low position of our hyperborean in the rank of mountains, in view of its high advancement in degree of latitude. Going down in our tracks to the col we noticed reindeer slots and droppings on the ridge close below the summit, showing that these animals make use of the practically ice-free summit ridges in passing from one valley to another.

From the col we went over Mount Marmier, which lay between us and the bay. It is a steep mass of soft peaty earth, deeply furrowed by the streams which owe their origin to the complete and rapid melting of the winter snow, with here and there a sheet of ice left to tell the tale. It is a naturally fertile soil, asking only for a remission of the winter's rigor to support a wealth of vegetation which even now in dots of moss and flowers is struggling for existence. The summit, which is curiously peaked, from a height of 2,400 ft. falls sharply to the sea, and soon the desolate shores were again exchanged for the comforts of our floating quarters, the better appreciated as the only spot within many hundred miles where the pangs of appetite which the keen Arctic air engenders could be allayed. Spitzbergen had vouchsafed us nothing worthy of the name of climbing, but there was instead the charm of the unknown and the glamour with which the genius of high northern latitudes—*itself*, I fancy, of the spirit of the summit's kin—invests the commonplace.

These wintry islands, though scarcely likely to attract the climber, present many problems for the solution of which a knowledge of ice work is essential, and doubtless contain many mountains worthy of attack. Hornsunds Peak, reputed to be the loftiest in the island, is still virgin, and,

though little higher than Ben Nevis, a distant view was sufficient to show that it is by no means what a Zermatt worthy used to call, when he wished to be particularly cutting, a 'cow mountain.' It is a far cry from Spitzbergen to the early exploitation of the Alps, but I must mention a connecting link in the person of an old Swiss traveller amongst the passengers on the 'Lusitania'—not a member of the Club—who so long ago as 1846 made expeditions in the Alps, amongst them the passages of the Col du Géant and the Strahleck, with Johann Lauener as guide, when I suppose the glaciers of the Alps were little better known than those of the far north at this day.

THE WESTERN GLACIERS OF NEW ZEALAND.*

BY ARTHUR P. HARPER.

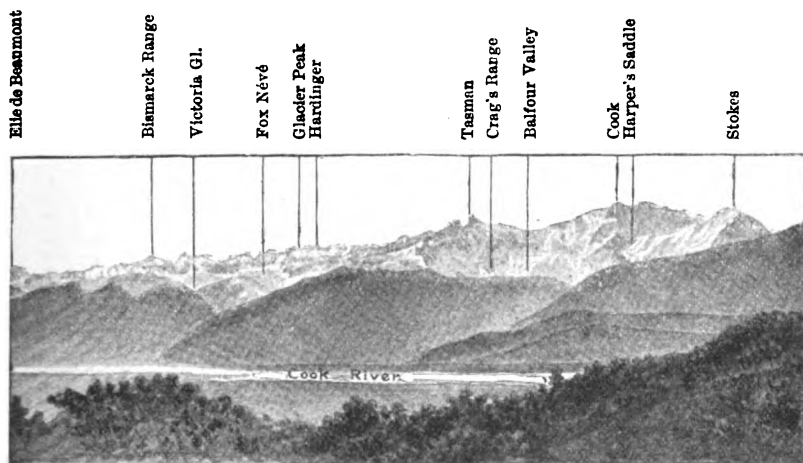
THOSE members of the Alpine Club who take any interest in such an out of the way corner of the world as New Zealand no doubt know, more or less, the geography of our main Alpine district; if they do not, and if there are any who wish to learn, let me refer them to a short article by myself, and map (correct as far as we knew then), published in the first number of the 'Geographical Journal,' January 1893. In it they will find a history of the explorations and climbs on the eastern side of the main range and glaciers of the Mount Cook district, which were explored and mapped by the end of 1890.

The western side of the range, from an Alpine point of view, has been so far neglected, while the glaciers, with the exception of the Balfour and Strauchon, which are entirely moraine-covered, have been left untouched, chiefly owing to the want of a man with knowledge of ice work.

The general formation and nature of Westland must be explained before I go into particulars. The province of Westland embraces a long, narrow strip on the western coast of the south island, and is about forty miles broad in the widest part and sixteen in the narrowest. The boundary line runs along the watershed of the main range. Roughly speaking, for sixty-five miles from the northern end, which is the widest part, the range does not often rise above the

* The illustrations to this article are from clichés kindly supplied by the editor of the *Geographical Journal*.

snow line, and there are several passes under 4,600 ft., the best known being Harper's, Arthur's, Browning's, and Whitcombe Passes, a coach road running over the second, soon to be superseded by a railway. Below the Whitcombe the range begins to rise, till it reaches the highest point in Mount Tasman (11,475 ft.), sending off many spurs and ranges to the eastern side, on one of which is Mount Cook (12,349 ft.), while on the western side it forms almost a wall, coming down to within 500 ft. of sea level in from five to ten miles from the top, leaving from ten to fifteen miles of low country covered with bush and old glacial terraces and moraine heaps. It might be expected that when a range has to rise 10,000 ft. in five or ten miles it



GENERAL VIEW OF THE WESTLAND ALPS.

would do so as quietly as possible, with only a few spurs and offshoots. This, however, is far from the case, for we find so many offshoots from the main range in Westland, with deep valleys between, that it is sometimes hard to believe that so much country can be contained in the space; in fact, the more one sees of this side of the island the harder it is to believe that there is not more country than there is room for.

The whole country west of the Divide is covered with dense bush (forest) up to, say, 3,500 ft., above which is a more dense (if that be possible) mountain scrub for another 500 to 1,000 ft., according to the locality, followed by snow, grass, or rocks to the snow line, which may be placed at

from 6,000 to 6,500 ft. above sea level. The rivers come down through deep and beautiful gorges—beautiful, that is, when one has not the misfortune to be the first to push through—and most of them rise from glaciers of various sizes and altitudes.

The rivers are subject to great changes by reason of the very wet climate ruling on the coast, some 130 inches of rain falling in the year. Thus we find a dry river bed of rough boulders turned into a roaring torrent in a few hours, unfordable by man or beast; and in a gorge during heavy rain a 30-ft. flood above the usual level of the water is almost a common occurrence. In fact, the rivers are more or less in flood once, and sometimes twice, a month the whole year round. However there is one thing to say in their favour—that is, that the smaller rivers go down in as short a time as they take to rise. I have seen half an hour's rain render a small creek unfordable, but on the rain stopping twenty minutes will suffice for the water to go down.

The chief glaciers on this coast lie at the head of the Wanganni, Wataroa, Waiho, Cook, and Karangarua Rivers; but, as the two first-named are really unexplored to their source, I cannot say whether the glaciers are of any importance; the others, however, have some very fine ice fields at their sources. The Waiho River drains the Franz Josef, Burton, and Spencer Glaciers, and the upper ice fields of the surrounding ranges; Cook River comes from the Fox, Balfour, and La Perouse Glaciers, and the Karangarua from the Strauchon Glacier, behind Mount Stokes, with the Douglas Glacier and ice fields on the western side of Mount Sefton. Further south the McKerrow Glacier is one of fair size, after which the range, though still having peaks above 7,000 ft., has no perpetual snow on it until we come to the Aspiring Group of peaks, with their grand ice fields and bold summits, rising to close on 10,000 ft. Mount Aspiring, the highest of this group, is one of our grandest mountains as seen from the coast.

I do not propose to go into the subject of general exploration in this article, but to confine myself to the glaciers and alpine country included in the map published by the Royal Geographical Society, to which I have referred.

Until November 1, 1893, the only glaciers on the western side which had been touched were the Strauchon, Balfour, and McKerrow, all of which Douglas mapped off and traversed with a compass; being covered with surface

moraine they require no ice work. This year Douglas and I have explored the Franz Josef and Fox Glaciers, and Cook River up to La Perouse Glacier, and retraversed the Balfour Glacier to its head, under Mount Tasman. Douglas has been exploring in the Westland ranges, following rivers up to their sources, and generally making reconnaissance surveys, for some twenty years, doing the work mostly without any mate, and only those who know the country can understand what that means. He has done it all in such a quiet way that few people know the extent of his explorations, but I may safely say that no man has done half what he



FRANZ JOSEF GLACIER.

has in the west coast ranges, while one or two have considerably more credit, because they have not only advertised themselves well and made free use of Douglas's work, but left out all mention of him in their accounts. However he has never done any ice work to speak of, nor has any one in Westland; therefore the two largest and most interesting glaciers have remained unexplored, the existing maps only being made from sketches from lower trigonometrical stations.

We have been hearing much lately about climbing in great ranges, and altitudes of 20,000 feet and upwards are

becoming as familiar as the more modest peaks of Switzerland; therefore, as I cannot describe such 'sky-scrapers,' it seems that the best thing is to take the other extreme, and, instead of beginning ice work in close proximity to the stars, to begin as close to the sea as is possible in temperate latitudes. There is an immense advantage in being able to do this, besides the extraordinary interest, for it is easy work to go up a flat river bed for 14 miles from the sea and strike a glacier at an altitude of under 700 ft. above sea level.

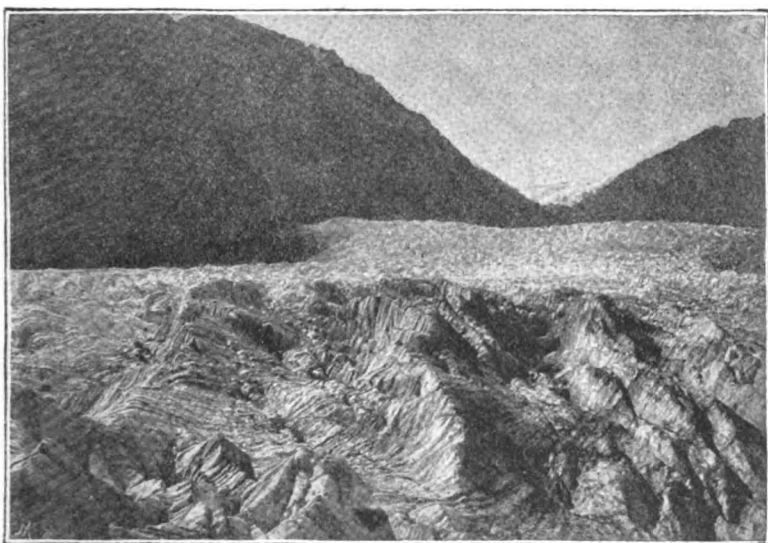
I know it is unusual to see such a mass of ice pushing its way down amongst what you in England would call semi-tropical vegetation, and to find ice, edelweiss, and tree ferns jostling for a place in a narrow valley, but such is the case with both the Fox and Franz Josef Glaciers, while, to make the whole arrangement more curious, we find within a mile of the ice of both glaciers a hot spring—temperature 130°—in which one can lie and stew in full view of snow and ice. If it is too hot to be comfortable it is easy to take a piece of ice stranded on the river bed or let in a little ice water to cool the bath. These springs have rather an objectionable smell. As Douglas said, you smell 'as if you had been having tea with the evil one inside an old gasometer.' He may be correct, but, never having had tea under such conditions, I cannot pretend to give an opinion as to the correctness of the comparison.

I used to look on our work in the Tasman district as hard and uncivilised, but it is easy compared with the work on the west coast. Though the loads to be carried are no heavier we have far rougher country to work in, and the bush work is terrible. Our outfit is very simple, consisting of either a fly and 'batwing' or more often a single fly tent, and when we can find decent shelter no camp at all; but on this coast, owing to the great rainfall, a party must have some shelter for both the fire and themselves, for it is hardly too much to say that in Westland it rains three days a week on an average, and a ten days' spell of fine weather is exceptional.

This condition of things, of course, makes the work doubly hard. For instance, a trip is organised which may take seven or eight days from the head camp. You take ten days' 'tucker,' and have four or five wet days at critical points. The result is, you have to go down and 'punch up' more provisions or go on short rations, an alternative which I'm afraid we generally choose; but it really does not answer

to do it too often when out for a prolonged period from civilisation, as we were.

In the way of eatables we take flour, tea, sugar, oatmeal, cocoa or chocolate, bacon, rice, and treacle, depending largely on birds for meat. Other stores consist of a fly, 9 × 10 ft. ; a 'batwing,' or half-tent, open at the side, made by cutting a 6 × 7 ft. tent in half along the ridge pole, in which we lie 'heads and tails,' having a good fire alongside under the fly, where the other half of the tent ought to be. We thus, though in shelter, have all the advantages of sleeping in the open air. We also take a bill-hook and half-axe for cutting fire wood or



LOOKING UP FOX GLACIER.

blazing a track through the bush, two billies, pannikins, ice axes, ropes, a plate, and sometimes a frying-pan, but we generally cook on the end of a stick and bake bread on a flat stone ; one blanket each and a spare one between us, field books, instruments, pea rifle for birds, camera, one change of shirt and trousers, and as much reading matter as we can manage. This sounds little, and certainly does not mean luxurious living, but for two men it makes up a load of over 50 lbs. each, and we would willingly do with less if that were possible. Our usual working costume is 'neat, but not gaudy,' consisting of a shirt or jersey, and instead

of trousers a close-fitting knitted woollen garment, which we find most healthy in such wet work.

As a rule no horse can be brought further than the base of the hills; after that we have to carry our own loads and keep pushing into the ranges, changing camp sometimes daily, and depending on birds for our food. All our necessaries have to come from the beach, where the chief settlements are situated, such as they are. These 'townships' generally consist of two public-houses and a store, which are kept going by a small number of gold-diggers in the neighbourhood within a ten or twelve mile radius; and sometimes a few settlers are found, also living on the diggers, with small clearings on the densely timbered flats.

A weekly or fortnightly mail, packed on horseback, comes down the coast from Ross, the last point of civilisation, and we get our letters and papers, when we come out of the ranges, if any one has been good enough to bring them from the beach and leave them for us in some digger's or settler's hut near the hills; and a steamer calls in here and there, weather permitting, once in three months, bringing the heavy goods for the above-mentioned stores. Thus it is not uncommon, when the steamer is late by a month, to find a famine beginning in the district so far as certain articles are concerned, such as flour, tea, sugar, &c.; but, curiously enough, a whisky famine is unknown, probably because there is plenty of pain-killer in the district, or some other poison to replenish the supply. I call the liquid 'whisky' by courtesy only. Having shown to some extent the difficulties under which exploration here has to be worked, it is time to turn to our work on the glaciers.

The exact position of the snout of the Franz Josef Glacier is lat. S. 43° 25' 30'', long. E. 170° 10' 58'', or rather nearer the equator than Florence, in Italy. However in spite of this it descends to 692 ft. above sea level, and within 14 miles of the sea beach. It is 53 chains broad on an average, and 8½ miles long, descending 8,928 ft., or an average of over 1,000 ft. a mile, over a very rough bed. This glacier and the Fox both face north, and therefore get the whole force of the sun, the ranges on either side not, to any practicable extent, shading the glacier. The result of this unusual condition of things is that the flow of the ice is very rapid and the surface of the glacier fearfully broken and rotten. It was quite a usual thing to find a route absolutely changed after an absence of a day or two.

I will not enter into further particulars, as I have ar-

ranged to have our official report sent, with maps, to the Club, and would advise those who can to read it, as it contains, I think, many points of considerable interest.

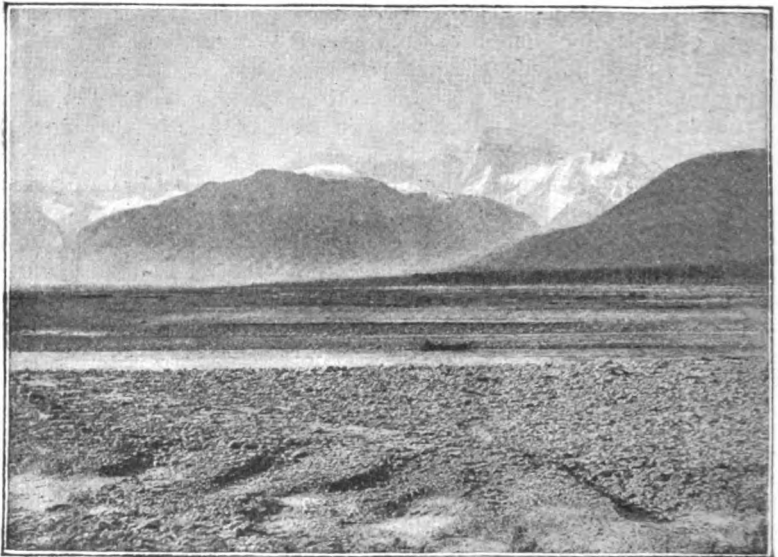
The report also gives in detail our various attempts to find a route up the glacier and their results. By the route we eventually found it took us an hour or so to get through some ten chains of broken hummocks from the side of the glacier to the smoother ice in the centre, and only after sundry gymnastic feats. Such antics are interesting when going with no load, but become very hard work when one has 40 to 50 lbs. to carry; and the unfortunate swag suffers too, being let down and pulled up, regardless of contents. When I remember these performances, combined with one or two other little incidents, coupled with the fact that I had no camera stand, I feel decidedly pleased with the result of my photographs. We were lucky to get any good results, as you will, perhaps, admit when you hear of one or two more mishaps.

After going some 4 miles up the glacier and being baulked on the top of the ice-fall by broken ice, we returned and tried the ridge on the northern side from our camp 2, about $1\frac{1}{2}$ mile from the terminal face. To do this we had to blaze a track through the bush to the grass line, which took us three days; and, on counting the time employed in cutting, I find that it takes 5 min. to cover, after the track is blazed, the distance which took an hour to cut, and, if going up hill, 1,000 ft. a day is good going until the mountain scrub is reached, where 500 ft. only is sometimes the result of 6 hrs. hard work. This route proved a failure, as we found some very shattered ridges, which stopped us. No doubt it was possible to go on, but two of us alone with heavy loads, and in such an uncertain climate, had no right to put such an obstacle between us and our stores; so we decided to try along the ridge on the southern, or rather western, side of the glacier.

Returning down the glacier from camp 2 to the terminal face, we had to blaze a track for 3,500 ft. to the grass line; this took us three and a half days, having some very bad scrub at the top, through which one could hardly have crawled, even without a swag; and after reaching the grass, and proceeding the whole day in a thick fog along the ridge, which was very rough, we camped on a steep, bare hill-side, not exactly knowing where we were, or being able to get down to the scrub, because of the precipices below.

We had to cut a flat place of 6 x 8 ft. to camp on out of the hill-side with our ice axes, and make the best camp

possible in which to face a storm which was brewing, and which burst on us that night and blew all next day. Luckily it was from the north, and therefore not very cold; but its force was terrific, tearing up grass and lilies by the roots and testing our makeshift shelter to the utmost. On the second night we turned into our blankets, Douglas in his shirt and I in a pair of canvas under-standings only, the rest of our clothes being wet. All went well till 1 A.M., when the camp was blown away bodily, leaving us, like sardines when the box is opened, to the full force of sleet, rain, and the gale of wind, which



RANGES FROM COOK RIVER BED.

had shifted to the south, our cold quarter. We had to jump out in our airy costume, to capture the canvas, and battle with the wind and fly to rig up some sort of shelter. Cold as it was, however, I could not help being struck by Douglas's wild appearance in the dim light as his garment fluttered in the wind, and if I had not been so cold I should have smiled; the only thing to be done was to don our wet clothes, having wrung them out, and sit in our wetter blankets and chatter, or rather let our teeth chatter, till dawn.

At daylight, after three hours' trying to get up a fire, we

boiled some cocoa for the inner man, and at noon left our wreck to battle with hail and wind along the ridge for some three or four hours to the shelter of the bush, and so down to the flats to the nearest digger's hut, where we recruited for three days. On returning we found our lower camp had also been overturned, and most of my exposed plates and films had been exposed to four days' rain, while those I had on the hill were also damp. Such are the difficulties under which I had to photograph.

The use to which our ice axes were put in making our camp 7 reminds me of some remarks made on the arrival of these weapons on the coast. One said they were 'grubbers,' another 'fossicking picks;' but, after various theories were rejected, they came to the conclusion that they were 'fixings which Charlie had got to spear eels with'!

From the Franz Josef Glacier we went to those on Cook River, the Fox and Balfour, taking two days *via* the sea beach and up Cook River from Gillespie's. The panorama from the beach is as grand as any I have seen, taking in the range from the south of Mount Sefton to the north of Mount Elie de Beaumont, and being only 17 miles away at the nearest point. The Balfour, like some others on this coast, is a disconnected glacier—that is to say, the *névé* is separated from the trunk of the glacier by a huge precipice of some 2,000 ft., over which the ice breaks off and falls, forming a glacier in the valley. Further south the Bonar and Douglas Glaciers are of the same formation.

On glancing at the map of the 'Central Portion of the Southern Alps' (already referred to) the first thing that would strike an Alpine man is that the Balfour Glacier must be wrongly drawn. Yet it is practically correct, and, absurd as it may seem, the *névé* is no larger than it is shown, though when the extent of the trunk is considered it seems impossible that so large a glacier should come from so small a *névé*.

It must be remembered that Mount Tasman stands 7,000 ft. or more above the main part of the glacier, and is too precipitous to hold much snow, so that in winter the avalanches must be enormous, and would account for the glacier, which lies in a deep basin surrounded by precipices of 3,000 ft. or so, and is blocked at the head by Mount Tasman (11,475 ft.).

The terminal face is 2,400 ft. above sea level. Below it are old terminal moraines, through which the river has cut a passage before it plunges into a magnificent but impassable gorge, descending some 1,800 ft. in two miles. When

coming up Cook River it is annoying to be such a short distance from the glacier as two miles and be blocked by this gorge, and forced to cross Craig's Range by a saddle of nearly 5,000 ft., which is very stiff going and hard work with our heavy loads.

When we went in we had to rely on ducks, but unfortunately only found a few and could not risk being caught in such a trap, in bad weather, without supplies, so after traversing the glacier some six miles to the foot of Tasman we returned to the low country.

After spending a few days in writing up our report, &c., I went alone to the Fox Glacier, hitherto untouched, meaning to put ten days on it and find my way about before tackling it with a compass, Douglas remaining behind to finish his share of the report. It is possible, without a track of any kind, to take a horse to within a mile and a half of the Fox ; so I packed my little camp as far as possible and then divided it into two loads of 40 lbs., carrying one and returning for the other, after swagging the first to about half a mile up the south side of the glacier to a fair camp in the bush, which fringes the ice for some three miles along its side.

Whether April 1 is an unlucky day to start on or not I cannot say, but I had bad luck from the first on this trip, twisting my ankle badly the day after I reached the glacier and being laid up for five days, three of which were fine ; but, thanks to the tame birds, in which the New Zealand bush abounds, I passed a fairly happy time, though by myself. As soon as I could get about I started one day at dawn, and went some four miles up the ice, which is free from moraine, crossing over to the Chancellor Ridge, from which I ought to have had a glorious view ; but, as I say, luck was against me. After one short glimpse of the névé and its magnificent surroundings the fog came down as thick as its London brother does in November, bringing heavy rain with it ; so I had nothing to do but return to camp over an unknown piece of country as soon as possible. Fortunately I struck the camp to a nicety about a quarter of an hour before dark, feeling very pleased with myself and looking forward to a square meal and dry clothes, when to my horror I found the camp, all but the fly, blankets, and food, burnt to a cinder. How it happened I cannot say, unless a rat got at the matches. However the fact remained that I had only a small fly, 10 min. daylight, and heavy rain to enjoy, instead of my comfortable little 'batwing' and dry clothes.

There are times when language fails to do justice to the

occasion, and this was a case in point. I did not even *think* bad language, but set to work to rig up a shelter with the remains. In spite of the rain I had a fairly happy night, and next morning built a good shelter with ferns and boughs, in which to sit out the bad weather and wait till the creeks went down. All my reading matter had gone, so there was little to do but play with two or three wekas which had taken compassion on me, and pass the time in learning by heart a short poem on the remains of some newspaper in one of my pockets, entitled 'Every Hour has its End'—most appropriate.

The only practical result of this trip was that I gained a knowledge of the glacier, discovered a big error in the map, and made sketches from distant trigonometrical stations. The Victoria Glacier does not join the Fox at all, as shown in the map, nor has it had any connection for ages. It is a small primary glacier some 3 miles long by $\frac{1}{4}$ mile broad, between the Chancellor Ridge and Bismarck Range. The Fox itself is easy to travel on, being smoother both in the centre and at the sides than the Franz Josef, though it lies at the same height above sea level; it is not nearly so steep and flows over a smoother bed. The main branch of Cook River flows from the La Perouse Glacier, and we tried to push up to the head, at the end of April 1894; but the winter snow came too early, and we had to come out in the beginning of May. No doubt we could have held on, but having no camp we found the very bad weather too much even for us, though we had some very decent boulders to live under. This river flows through narrow gorges, full of gigantic boulders of all sizes, the largest we measured being 156 ft. high by 843 ft. round, an erratic with trees on the top. Another was 113 ft. high by 385 ft. in circumference. It took us some four days to go $4\frac{1}{2}$ miles up the valley, it often being necessary to blaze a track over a high bluff. The scenery at the head is grand beyond description. The La Perouse Glacier is a large one, and flows off the Divide between Tasman and Dampier, but whether rough or smooth I cannot say. Its surroundings are magnificent, being walled in by some of our highest peaks.

I have endeavoured in this article to cut down my remarks as much as possible, and to show in some degree what the work on the west coast ranges is like at present. The one or two adventures related are really put forward as mere instances of what my camera and plates had to suffer, and not for any hair-curling merit of their own, as any one doing

such work for the length of time we were out—some seven months—would take such things as a matter of course.

One piece of advice I may give, before I conclude, to any one coming out here. Let him bring ice axes, rope, lantern, and any of the little 'fixings' Swiss climbers are so fond of; but all other stores, such as tent, blankets, &c., he can get here as well and cheaply as he can in England, thus saving the trouble which a large amount of luggage always gives to a traveller. Such an article as a 'Mummy' tent is too tender for our rough work, and heavy sleeping bags too cumbersome; but the latter point is one for the climber's own consideration, as he will have to carry his himself. Our locally-made tents are as good as English and cheaper, being more used out here. Food too, such as flour, meat, &c., is cheaper than in the old country and as good, but any things in the way of luxuries are dearer; yet they can be got here cheaper than if imported by any one travelling. Any patent food or essences (which I am afraid I do not believe in) had better be brought from England.

Besides finding that he can get all necessaries on the spot any member of the Alpine Club visiting us will find a few men, weak as far as numbers are concerned, but very strong in their love of their mountains, who will be ready to do all they can to give any help in their power, and any information which I can give I shall give gladly if written to. Above all, please do not bring a guide. Let our mountains be conquered by amateurs pure and simple.

CORSICA REVISITED.

A NOTE BY DOUGLAS W. FRESHFIELD.

I OUGHT, perhaps, to explain to a generation that cannot purchase, except at fancy prices, the back numbers of this invaluable 'Journal' that many years ago I contributed to its pages (vol. x. p. 194) an article on Midsummer in Corsica.

Last spring I returned with François Dévouassoud to the island, in the hope of climbing Monte Cinto and the Paglia Orba and rambling among the granite spires of the forest of Bavella. But in Corsica April showers are apt to take the shape of bitter snow and hail storms, and the only mountain top I reached was that of the Monte d'Oro (7,840 ft.). The little inn on the Foce de Vizzavona (8,800 ft.), the old carriage pass from Ajaccio to Corte, is well kept, and an excellent starting-point for hill-walks. As the railroad passes far below in a tunnel its quiet is complete. Secluded in the heart of a beech forest, it is much

frequented later in the year as a health resort by Ajaccians in want of change of air. The ascent of Monte d'Oro, when the track is blocked by winter snow too hard to climb without step-cutting, is a rough scramble. The last crag is scaled by a short, steep gully—like that on the Sisters at Pontresina—which, in its frozen state, had been too much for an American party who preceded us. Long glissades shortened our descent. The view in the direction of Ajaccio is beautiful; as a panorama it is disappointing.

The wonderful crags of La Piana—red granite tusks of the most fantastic shapes, hollowed and pierced by the sea blasts, and surrounded by a luxuriant tangle of Corsican bush—I saw for the first time. Mr. Lear has drawn and described them with admirable fidelity in his work on Corsica.

At Evisa the old landlord of the village inn does his utmost with the means at his disposal to meet the demands of the visitors from Ajaccio, who become more frequent every spring. It is a good base, though too far from the highest peaks for a starting-point. The carriage road over the Col de Vergio generally opens for wheels early in May. It was just open at the time of my visit. Here, and wherever the scenery depends on the chestnut woods, I was very conscious that I had come too soon. Early summer is undoubtedly the best time for Corsican landscape as a whole; autumn may run it hard, but then fever-stricken spots must be carefully avoided. A mid-winter visit to the mountains might be most enjoyable; some of our members should make the trial.

François and I had a fine scramble about the sources of the Golo, ending in the ascent of Le Forcelle (6,762 ft.), one of the highest crags S. of the Col de Guagnerola. The scenery was wild, and the weather to match. Black storms swept across from the eastern sea, and just as we gained the ridge of the island a blast took François's hat and carried it up into a cleft far overhead, whence it was not recovered without difficulty. The Paglia Orba was only seen partially through driving scud, but we had grand views of the dark forests of Lonca and the deep blue bays, or gulfs, of Porto and Galeria. On the ascent we passed some strange stone shepherds' huts—like a Tartar kosh—a pretty waterfall, and some enormous specimens of the Corsican pine.

After a day's imprisonment at Evisa we crossed in gleams and showers to the forest of Filosorma by an undulating forest track called the Col de Salto, through scenery of extraordinary picturesqueness. Here were superb opportunities for a painter of romantic landscapes—rocks and trees, noble mountain forms, rich colours, and always in the distance the surface of the Mediterranean, gleaming or dark as the sun or storm passed over it.

Four hours' steady walking brought us to the foot of the Col de Capronale (4,500 ft.), the Gemmi of Corsica, which has been well described by Mr. Tuckett.* The descent through the ilex forest of Filosorma and under the enormous buttresses of the Paglia Orba is unique. From Evisa to Galeria is not less than 55 kilomètres—

* *Alpine Journal*, vol. x. p. 314.

a long day's walk over a succession of high ridges. The last few miles after leaving the forester's house at Piro—where we were politely refused admission—were shortened by the sudden clearance of the great peaks. The range of Monte Cinto and the Paglia Orba towered up behind us in an enormous wall of red granite, its towers and ravines white with snow, the wild ledges of its fantastic buttresses fringed with inaccessible pine forests, its base buried in dark groves of evergreen oak. Twelve miles only from the sea beach the peaks rise nearly 9,000 ft. above its level. We saw them twice—first flushed with sunset; again, early next morning, casting long shadows over the foothills of the coast. Hardly any sign of human habitation diversifies the foreground: the malaria is master of the shore and the valley of the Fango, which flows, a clear brimming stream, through thickets of myrtles and white heaths to where the waves build up a beach against it, and hold back its waters in still pools shadowed by groves of poplar and eucalyptus. Here is nature unadorned, undesecrated, the Mediterranean of Homer, within a day's steam of the marine villas of Cannes and the flaming palaces of Monte Carlo. Here are rocks and to spare for our heroes of the Riffelhorn and the Blumen. Here is a noble landscape that will make the fame of the painter who can enter into the spirit of its majestic and radiant, yet melancholy, beauty.

I must confine myself to the limits of a note. It would, moreover, be superfluous to repeat the descriptions given by Mr. Lear and Mr. Tuckett of the Balagna and the southern portion of the island. I must urge, however, on all travellers to visit Sartena. Its situation is admirable, and the slopes round the town are a garden of delightful southern spring flowers, embedded in the most picturesque natural rockery. Fires have terribly injured the forest of Bavella; but its granite pinnacles are as grotesque as Lear's pictures of them, shown at our recent exhibition. The drive across the island from Sartena to La Solenzara is throughout most entertaining and striking.

The railroads which will in 1895 be completed between Ajaccio, Corte, Bastia, Calvi, and La Solenzara are of great service to the traveller who wants to get at the mountains quickly. They have not as yet affected the civilisation of the island. Vendetta—I speak on the authority of the last French writer—flourishes under the Republic. At one station a retired brigand comes down to see the train pass, and enjoy the popularity resulting from a successful career in the bush. At another the train may be kept waiting while hired female mourners chant an improvised dirge over a coffin on the platform. Travellers, I ought, perhaps, to add, need be under no apprehension. The brigands and the corpses are equally native!

In conclusion I must take this occasion to call the attention of the French Alpine Club to a matter of some importance to the travellers whom the good hotels at Ajaccio, M. Boland's excellent new edition of Joanne's 'Handbook,' and Mr. C. R. Black's compact little 'Itinerary through Corsica' (1892) will doubtless attract to the island. It is almost a necessity to the mountaineer to obtain an order for lodging in the foresters' houses. This is by no means at present a simple

matter, after one has landed in the island. French officials in Corsica soon acquire an oriental disregard for time, which is, perhaps, one of the legacies of the Moors to the island. Posts are irregular. Orders promised to be sent from headquarters at Ajaccio may be sent too late. At PIRIO I was refused accommodation. At BAVELLA, for which I had secured and carried an order 'for one night' from the official at SARTENA, we had a most amusing reception. The guardian at first stormed at us; however we soon managed to get on his right side, and were finally made most comfortable. It is alleged in the island that orders are somewhat freely given to private friends of the officials, and that these persons make, as a rule, little or no payment to the foresters in respect of the trouble and expense they put them to.

It would seem to be desirable that the French Alpine Club should negotiate with the Forest Department for the establishment of a system by which travellers might be admitted at a fixed charge to the rooms which stand empty in these hospices except on the rare occasions of Monsieur l'Inspecteur's tours. At present it is advisable to apply in Paris for the necessary permission rather than to depend on the dilatory action of the local officials, none of whom seems to exercise power over the whole island.

IN MEMORIAM.

THOMAS STUART KENNEDY.

IN T. S. Kennedy the Club has recently lost one of its most interesting members. He was the son of Peter Kennedy, and was born, I believe (certainly spent his childhood), at Feldkirch, and was afterwards educated in Geneva, among the hills of Westmoreland, and on his father's moors in Dumfriesshire. About the year 1861 he joined the engineering firm of Fairbairn, Kennedy, & Naylor, in Leeds, when many of us, who afterwards became his intimate friends, first made his acquaintance. A mountaineer almost from the cradle, he had in many ways seen more of life than we, but far less of English urban life; and thus a certain simplicity of character and a sensitive and reticent disposition were fostered in him. Kennedy had then made the bold winter attack upon the Matterhorn, which he described in his admirable style in the first volume of this Journal. In the same volume appeared the story of his second and successful ascent of the Dent Blanche with Mr. Wigram.

As an undergraduate E. S. Kennedy and G. Mathews in my own college, Leslie Stephen and McCalmont in Trinity Hall, and their friends Hardy, Ellis, Hinchliff, and others elsewhere had fired me with a desire for Alpine adventure; soon afterwards I began the series of expeditions in the Alps with T. S. Kennedy which continued for many seasons, though I did not venture to share his most difficult expeditions, such as the ascent of the Aiguille Verte in 1865, which he made with the ill-fated Charles Hudson, Mr. Hodgkinson, Perren,

and Croz. In his account of this ascent, in the *Journal* for 1865, Kennedy speaks of the work of Hudson and Croz with the generosity so characteristic of him. In the seventh volume it was his sad duty to describe the circumstances under which Mr. J. G. Marshall and Fischer (the guide so often his own companion) met their death on the Brouillard Glacier. This admirable guide was one of the most powerful men of his craft, and among his other fine qualities there lay, concealed under saturnine features, a strong sense of humour and a brave and loyal heart. Kennedy wrote a memorial of Fischer, beginning with our amusing introduction to him at the Aeggischhorn, in the 'Pioneers of the Alps.' About ten years ago Kennedy, with Fischer, made an expedition to the Himalayas. Kennedy caught fever in the plains from over-exertion at a polo match. They ascended no great peaks, but they camped for nearly three weeks at a mean elevation of about 18,000 ft. Kennedy brought home some fine panoramic outlines which may merit publication, but pursuit of the Burhel sheep and other sport was the chief purpose of the excursion.

Taking Kennedy all round—his work on ice or rock; his eye for mountain beauty, only equalled by his acuteness as a scientific and topographical observer; his vigilant caution; his keen sense both of fun and humour; his high spirits, which mounted higher the greater the difficulties; his fiery energy; his almost tender helpfulness to a weary or clumsy companion, himself knowing neither fear nor fatigue; his simple honour and almost maidenly modesty—he was as admirable as he was dear and perennially interesting to one friend at least, who shared many of his expeditions.

It is with a feeling akin to remorse that I recall his willingness to restrain his own enterprise, to clip his own wings, in order to adapt himself to my powers. I fear I too often took advantage of his contempt for fame and of his regard for his friend. Happily, however, we were at one in hating bad weather in the Alps, and I thankfully remember that I voted for a return from the Grand Plateau on that fatal day in September 1870 when there perished on Mont Blanc the heaviest tale of victims ever sacrificed to the spirit of mountain adventure.

I have said that Kennedy was a 'cautious' climber; less daring men, both on the mountains and in the hunting-field, would often call him reckless. As regards the Alps this is quite untrue. He was so frank in such matters that I believe I may say he slipped twice only. One of these slips he records in his ascent of the Dent Blanche, when, although Croz was ready, he brought himself up. The other was with me, when on an easy grass slope we were properly unroped. While looking at something which interested him he tripped, fell, and began to roll; in two more seconds he would have been dashed to pieces on the Viesch Glacier, some thousand feet below us. Old Christian Almer, who was a little ahead, turned at the sound, and, throwing himself at full length on the grass, seized Kennedy by the collar, and the honest frieze (Grindelwald-spun, if I remember aright) held firm. He silently shook hands with Almer, and, turning to me, said, 'Please never let my wife know of this.'

In estimating Kennedy's powers as a sportsman it must be remembered that his Alpine work was but one of the many fields in which he excelled. Lord Harrington writes to me, 'He was the best sportsman and the most unselfish one I ever met. Chivalrous to a fault himself, he expected every one else to be so, and great was his indignation if any one did not come up to his standard. . . . He was a very fine horseman, and probably no man has ever ridden straighter or harder to hounds; yet he never overrode them or failed to give help where it was needed. . . . His laugh will be remembered by his friends; there was something so true in the ring of it. . . . One always knew when he got down (which he seldom did, considering the way he rode), because you were sure to hear a ringing laugh. . . . As polo-player he was quite at the top of the tree, and with his thoroughbred pony "Dancing Girl," and his Arabs "Grey Dawn" and "Umpire," he was a well-known figure to every frequenter of Hurlingham. . . . Jealousy and timidity being alike unknown to him, he was the most popular of umpires, for he knew the game well and loved it as few did.'

My own opinion is that Kennedy was no more reckless in the hunting-field than in the Alps. Quick-witted, master of himself, utterly fearless, always well mounted, and familiar with adventure from childhood, he knew what he was about, and what strength and agility in horse and man could achieve. It may suffice to say that, although it was common enough to see him with a black eye, a barked shin, or a sprain, matters of indifference to him, he never injured himself but once, when he broke the usual collar bone. It is characteristic of his indifference to pain that he did not discover that the bone was fractured until out shooting on the following day.

Kennedy took up tennis eagerly, but too late in life to make a first-class player; yet, if I may judge by the odds he took, he must have played a good second-class game. During the last three or four years of his life he was ordered to winter in Egypt. He set himself to learn Arabic and acted as his own dragoman, an arrangement which permits of much more freedom and saves about half the cost. Thus he was able, to his intense delight, to indulge in new kind of 'tobogganing,' on a Nile boat in the rapids. There was some difficulty at first in inducing the 'reis' to permit his lord and master to steer the boat, but after a fortnight's practice Kennedy learned to shoot any rapid in the Cataracts. His letters from Egypt are full of life, humour, and acute observation.

In view of recent physiological researches on the use of sugar in muscular work it is interesting to note the diet of so remarkable an athlete. He was a moderate meat-eater; of sweets and fruits he ate largely, and he was virtually an abstainer from alcohol. Tobacco he never touched in any form.

To close my slight sketch of Kennedy's life at this point would leave a very false impression of him as a man. Least of any man could it be said of him that he was a mere athlete. On his father's death, becoming possessed of a more ample fortune, he retired from business; yet he never lost his interest in mechanics, and in later life, when his health forbade physical exercise, he spent a great deal of time in his

workshop. The Rev. Charles Ellison, of Bracebridge, tells me he has to thank Kennedy for many valuable improvements in the 'Ellison lathe;' 'he had a marvellous gift not only of understanding, but of designing combinations of mechanical movements. . . . He raised the workman's art to the dignity of a science.' Mr. Birch, the well-known engineer of Salford, writes, 'He was the best read man (in our work) I know, and had a largely developed inventive faculty. . . . No problem, however intricate, was too much for him. . . . No words can express the loss I have sustained by his death.' He would take unwearyed pains to solve difficulties, and make full drawings for practical mechanics who consulted him, and in the overcoat pocket wherein usually lurks the yellow-backed novel, Kennedy would coyly conceal some volume of mathematics, the companion of his leisure moments.

Into matters of Fine Art he had a rare insight. Of drawings by Turner, Lewis, and Prout he possessed a small but very choice collection, and he was himself no mean draughtsman. In music his sincerest admiration was for Sebastian Bach, and one year he and I drove into the Thuringer Wald to discover Schulze, whom he brought back to Yorkshire: there Schulze remained at least a year, an inmate of Kennedy's own house, building the organ which on the owner's removal from Meanwood found its way to Armley Church.

It is impossible in this place to omit some brief reference to Kennedy's alienation from the Alpine Club during some years. He proposed but few names, and was more surprised than annoyed by the black-balling of a certain candidate who had a good enough Alpine record and was one of the best all-round sportsmen in England. But when, a year or so later, a like event recurred, Kennedy believed the unpopularity must lie with himself, and he resigned.

It is hard to realise that this fiery, inflexible spirit is laid to rest. To men of his intense vitality, keenness of intellect, and versatility of endowments praise and blame are idle alike, for such ardent, imperious natures must live their own life. It may be said that Kennedy's life was selfish after all, and spent in amusing himself; but may we not fairly answer that one who set so high an example of courage, of honour, and indomitable perseverance, who in simpleness of heart was content with nothing in science, in art, or in life which falls short of the highest standard, who kept up the best traditions of manly, free, and picturesque exercises, while holding in contempt that kind of sporting which consists in hanging around the sports of others, may have done more service to his country than many a man more conscious of his own virtues and beneficence?

His protracted illness, probably increased, but not primarily caused by bodily exertion, was of a most distressing kind, and borne not only with heroism, but even with cheerfulness. No murmur ever passed his lips, and up to the close of his life his acuteness of intellect and his interest in life were happily unimpaired.

T. C. A.

THE WINTER EXHIBITION OF MOUNTAIN PAINTINGS AND PHOTOGRAPHS.

THE experiment that has so often been advocated has at last been made, and, as will probably be generally admitted, with satisfactory results. At first sight, and to those who are unfamiliar with the labour involved in organising the annual art exhibition, the new departure may not have appeared a much more formidable undertaking than usual. As a matter of fact the work was very heavy, and the Club owes a deeper debt of gratitude to the President, to Dr. Wills, and to those who were associated with them than members are probably aware. The organisers aimed at two main objects—first, to collect a series of paintings illustrating the rise and progress of mountain art up to the present time; and secondly, to bring together representative examples of artists whose work was known, while extending the most cordial invitation to new exhibitors.

The success of any future exhibition will be even more complete if the experience of those entrusted with the management on this occasion is frankly recorded. It is in no captious spirit that we draw attention to defects and shortcomings, but merely in the hope that their mention may be profitable to the Committee in the future. In the first place, there were too many pictures for satisfactory hanging to be a possibility. The opposite result was expected almost up to the close of the time for sending in, and at the last moment it was difficult to decline offers of exhibits. Another year it might be well to limit the Club's hospitality, and to have a much smaller collection more advantageously placed on the walls. Our artist friends will be the first to appreciate the difficulties that beset the Hanging Committee. Notwithstanding the special appeal made for the loan of old Alpine prints few were contributed. It must be admitted, however, that there would have been little space for them; but we trust sincerely that another year collectors, of whom there must be many abroad, will be induced to come forward and make this department, which has never yet been adequately represented at our winter exhibitions, a prominent feature. It is, we suppose, necessary that the exhibition of paintings should coincide with the winter dinner; but there can be no doubt that this results in selecting a very unsuitable time of the year, when the light is at its very worst and frequenters of picture galleries are prone to seek distraction elsewhere. Again, a fortnight is certainly too short a time to render the existence of the collection known. The bolder course of taking galleries for, say, five weeks, and making the private view for members on the two last days—those of the annual meeting and the dinner—would, we think, be found to answer better. This would enable the exhibition to be open to the public for a clear month, and would allow proper time for the preparation of the catalogue and the work of selecting and hanging. The energy displayed by Mr. Bourlet and his men, as well as by Messrs. Clowes, enabled all to be ready in time, but the preparations were too hurried. The plan of holding the exhibition at the time of the summer dinner is at least worth consideration. A collection of photographs could easily

enough be got together for the æsthetic delectation of the December gathering.

Apart from the labour entailed in organising such exhibitions it would be a mistake to look upon the new departure as already an established institution. At present we do not want such elaborate shows more often than once in every three or four years. They might be arranged systematically as a kind of pictorial apotheosis of departing Presidents.

The small drawbacks alluded to are, however, of little consequence in face of the evident popularity of the new move.

The number of visitors was exceptionally large for an exhibition of this nature. The cost to the Club is not unreasonably in excess of the sum usually spent. But the success of the exhibition is not to be estimated by the number of admissions, by the financial results, nor even by the general tenor of the critical notices which were distinctly favourable. The good that may be done to Alpine art is the true test, and this can only be gauged on future occasions by the quality of the works shown, by the more extended list of artists, by the wider range of subjects, and by more free and imaginative as contrasted with tentative and conventional treatment. The education has to be on both sides. Artists may be led to recognise, further, a field still comparatively little worked but capable of boundless opportunities. The lovers of mountains and Alpine scenery have to learn that their own range of view may have been but narrow, and that among the endless varieties of the mountain world they may not happen to have included the aspects which appeal to the artist.

Turning to questions of wider interest suggested by the exhibition, the first point that demands an answer is, how far the collection bears out the opinions of those who believe that mountain scenery may be included in the range of art. Does Alpine art exist at all, or has it merely been living in obscurity, known only to the few? Is it still callow, or merely unconscious of its own powers of flight, unaware that it can now spread its wings and soar to whatever level it chooses? The answer had best be guarded. The Autocrat of the Breakfast Table gave the sage counsel, 'Never write as funny as you can,' and acting on this advice we will not write in as sanguine a spirit as we feel. One effect the exhibition will, we hope, have produced, and that is to apply a truer test to the merits of a mountain painting. To the uninitiated in Alpine travelling the mountain frequenter and the climber are one and the same. Both are supposed to find their pleasure solely in the wildest aspects of Nature, in the most forbidding peaks, in the most extensive snow fields. They must be ever in one mood, and that an athletic one, tuned to concert pitch. And in this spirit they argue that because particular mountain features, known only to the few, have seldom, if ever, been represented in art so as to make them attractive to the many, there can, therefore, be no Alpine art at all. The test of excellence that people too often, perhaps unconsciously, apply is really preposterous.

To render in a picture vast snow fields and great peaks in the full blaze of the summer glare is, it is said, impossible. Granted freely that

no artist has lived yet who could do it. Neither can any one see the effect, save through tinted spectacles, and in the case of the critic these will not usually be rose-coloured. And yet the glacier or snow field really is less 'impossible' than the sea. The one model is still, the other in perpetual movement, while the play of colour and the limitless gradations of tint is greater in the case of the water than the ice field. Yet we recognise schools in all countries of marine painters, and admit that the field they have chosen for their work is a reasonable one. It is really absurd to admit the one and exclude the other. Familiarity with an aspect of Nature should not dictate as to its admissibility in art. The truth, of course, is that when art takes this 'higher range' it 'loses mortal sympathy.' Between the conventional wavelets of Willem Van de Velde and the travelling or heaving billows in the seascapes of Henry Moore or Summerscales there is a difference as marked as between the landscapes of Claude and of Corot. The advance may be questioned; the progress can hardly be gainsaid, if by progress is understood extension of the field of art. The complete fulfilment of the idea will never be realised in art any more than in other matters of life, save by those so meek and lowly that their efforts do not count. To the end of time the changing colours of a mountain sky or the fading lights on snow fields will not be more 'impossible' to render than the tints and transparencies of flesh. A certain arbitrary standard of excellence is recognised in portraiture or painting from the figure, for familiarity with such subjects has educated those who study pictures. But it is harder to break new ground in landscape art and find a public to appreciate or even criticise fairly. Yet this is what the Alpine artist has still to achieve. The task is a hard one, and the progress can only be gradual. But we confess to a belief in a future for Alpine art, for the school of Alpine painters that the Club is fostering now needs only one requirement, a sympathetic public.

This closer affinity between the artists and the public will not come about until the latter become more familiar with the Alps at various seasons, and realise that the time for high climbing is not the most fitting opportunity for the artist, and that the athletic ground is not necessarily the most picturesque.

The key note to the whole exhibition was happily given in Mr. Watts's decorative composition 'Chaos.' Here seemed to be a realisation of the old Norsk legend of the origin of mountains. The frozen giants were being set free by the sun; the waters gathering together were being set in order along the valleys. A work intended to form a portion of a series is always seen to some disadvantage in a gallery, but this fine painting alone made the exhibition worth a visit. Others of Mr. Watts's contributions, 'An Alpine Peak' (114) and 'Ararat' (38), have been recently noticed at length in the 'Alpine Journal.' Less interesting, though displaying a deep knowledge of mountain form, was the 'Pania della Croce,' from the top of the Tower of Pisa. To this a most worthy 'pendant' was found in one of the most striking pictures in the exhibition, Mr. Robert W. Allan's 'Kanchanjanga.' The work, which was in the New Gallery last summer, has already been fully noticed in the 'Journal.' We met it again with pleasure.

Mr. J. S. Forbes, always liberal in lending pictures from his superb collection, sent a remarkable early example of Corot, painted when the artist still observed minute fidelity to detail, and thought less of atmosphere than form. But the truth of the work was convincing. A happy contrast was provided in a characteristic silver-toned landscape in his later manner. Mr. Forbes contributed also a very fine Rousseau.

Of the older school of Swiss painters examples of Calame and his master, Diday, were shown, somewhat hard and crude in execution.

Of modern Swiss painters MM. Ritz, of Sion, François Furet, and Auguste de Beaumont were well to the fore. M. Ritz's 'Dents de Veisivi' (48) was a notable little work, distinguished by quality and strong modelling of the rock peaks. Some sketches by Mdlle. Blanche Berthoud—framed in a rather uncompromising manner—were attractive and sunny, but the composition was, generally speaking, awkward.

M. Loppé was very fully represented; no work of his showed better than the view from the top of Mont Blanc, contributed by the Alpine Club. The picture has been cleaned and prodigiously improved, suggesting, indeed, as did much of his more recent work, the complete rejuvenation of his great talent.

Space forbids us to mention at the length we should desire the works of many other artists. A fine collection had been got together of the work of Signor Costa and his scholars, in which we may, perhaps, include two important works by Mr. Corbet and smaller contributions from Mrs. Corbet. Strong and good in colour were the paintings by Mr. J. M. Swan (112, 116) of waterfalls in the Pyrenees, and free from the suggestion of being unfinished, which mars not a little of the work of this imaginative artist. Mr. Vereker Hamilton exhibited his 'Silent Peak, Kashmir,' in which an endeavour had been made to render the effect of deep fresh snow at a great height. More successful, though gloomy, was his Academy picture, to which we have previously drawn attention, 'Dawn in a Kashmir Nullah' (100).

Of Mr. Alfred East's delicate work only small examples—Japanese studies—were shown. Of the younger artists probably no one would be more likely to succeed in winter studies—a period that may be held to comprise the fading of autumn and the dawn of spring—than Mr. East. What he can achieve with such simple subjects as a snow-covered street partly veiled in London fog he proved in the work that was sufficiently appreciated in Paris to obtain a medal at the Salon. It may be allowed, however, that if a mountain had replaced the partly finished house, even though the atmospheric effects had been given every whit as truly, the Salon jury would have passed the work by altogether. The human interest would have been considered wanting. Save for M. Loppé's winter studies few of the works dealt with this aspect of mountain scenery. Some day, it is to be hoped, others will realise the wealth of colour and the delicacy of tone that greets the artist courageous enough to attempt such scenes. There is an opening for men such as Mr. Claude Hayes or Mr. J. Farquharson, who have already shown that they can not only appreciate but also render the beauties of snow scenes and understand the fairest draperies of nature.

Mr. Marcus Stone's 'Lake of Brienz' made us regret, not for the

first time, that he should have of late years so restricted his field of work. Mr. W. B. Richmond's 'Mount Hymettus' showed that a man who can paint well can always make much of a mountain subject. Mr. Andrew MacCallum's 'Mont Blanc' was a large and effective low-toned work of excellent quality. His 'Lair of the Gorner Glacier,' unfortunately, could but seldom be seen in the strong light the picture requires.

Lastly, we must not omit mention of Sir F. Leighton's beautiful little studies, of which none was more pleasing than the perfect, though minute, study of Soracte. It is of good augury for the future of Alpine art that the President of the Academy should have, of late, shown so much sympathy with the mountains.

The water colours in the exhibition suffered, not unnaturally, more than the oils by overcrowding. It was almost impossible to do justice to them on a single wall, where all were lighted in precisely the same way.

But, on the whole, the water colours formed a goodly show, and we were glad to see that here again the members of the Club contributed very largely. Perhaps the most remarkable feature was the large collection of Elijah Waltons, no less than sixteen being shown. Fortunately he was represented in all his periods, and, though it was a little sad to trace the too evident degeneration of his art at one time, there were examples enough to prove how accomplished a painter he was of mountain subjects. Walton's merits and defects were well summarised in the pithy note appended to No. 230 in the catalogue. There is no need in the case of a painter so well known to all lovers of Alpine art to point out works shown which did little credit to their author. Probably Walton himself would have been one of the first to acknowledge their defects, and to admit that they had been turned out to order for a specific purpose—the diffusion rather than the advancement of art. It is pleasanter and it is fairer to turn to works which showed him at his best. For delicacy and poetic treatment Nos. 159, 174 (Alpine, however, only in a very catholic sense), 213, and 217 were inimitable. No. 213, 'The Ebnefluh from Mürren,' was especially marvellous in its lustre of distant snow, obtained, as close inspection showed, by masterly juxtaposition of touches which in themselves had apparently little refinement. Stepping back to the proper distance this small work gave a mountain in substance and in spirit alike. Without any hint at vignetting the isolated beauty of the mountain, which is but one point in a range, was suggested to perfection. The number of Matterhorns in the gallery was past all counting. Still there was none in which the solidity and character of the peak were more deftly drawn than in No. 144. The intense blue of the crevasse in No. 180, undeniably false to nature, was a mere *tour de force* in colour. As such, though a specimen of Walton's latest style, it was a work that repaid close study, for the handling was so exquisite that what was begun possibly as a crevasse ended as an artistic sapphire gem.

Of earlier painters a remarkable example of Bonington was shown —'The Wetterhorn from the Little Scheidegg'—an extremely difficult

subject, as most amateurs who visit the Oberland will probably acknowledge. The Bonington had much in common with No. 162, from the late Mr. Blackstone's collection (which was surely a Girtin). Both paintings were remarkable for their simple, easy spaciousness, the former on a small and the latter on a large scale. It was curious to note how a master hand, like that of Girtin or Varley, could express truth by apparently 'impossible means.' No one probably ever saw Snowdon look as it was here depicted, not even the artist; yet the work showed a fine feeling for the general form of distant hills, though the details were imperfect, while the foreground and middle distance were treated in the old conventional style.

Mr. Donne was only fairly well represented. No. 234, however, was a very noticeable work, in which the indefinable mystery of a big mountain dimly seen through haze was indicated with extreme skill, while in 203 he had succeeded in a tiny sketch, named 'Evening Light,' in making a dark sepia sky not only unobjectionable, but even valuable as a foil to a crag flaming in the last rays of sunset.

We could have welcomed more works conceived in the spirit of Mr. H. Goodwin's beautiful little studies, which went a long way to recall the effects which all have seen and some have tried in vain to depict. The mechanical difficulties that stand in the way of the water-colour artist in painting the Alps are great enough at all times; but the endeavour to catch the fugitive, varying tints must be almost heart-breaking when the work has to be done rapidly—when the colour is unmanageable and the washes will not dry. In mountain painting even a superficial observer can detect at once the difference between studio work and that done *en plein air*. Mr. Goodwin brings just the qualities to his mountain paintings that we hope to see developed in the school of Alpine artists that is yet to arise. The most rapid and faithful observation of colour is needed; the quickness necessary can only be acquired by familiarity and experience. The artist who can, though only approximately, catch these fleeting tints of colour, nowhere seen to such perfection as in the mountains, will do more for the good of art than he who produces the most elaborately wrought out scheme of colour in a composition, or the most minute transcript of the folds and shadows of draperies.

It was unfortunate that the Turners lent were not the best examples of what his genius could accomplish with mountain scenery. There was more of the true mountain spirit in the fine collection of the 'Liber Studiorum' plates shown in various states. The mention of Turner brings Mr. Ruskin's name naturally to mind. Two small prints touched by his hand were the only examples of his work, but they were characteristically delicate and faithfully minute.

Mr. Alfred Williams has never shown better work than 193 and 195, both full of a delicious colour, in which he too seldom indulges, and possessed of a softness which he does not too often impart. The 'Glacier Pool' was a straightforward Alpine scene, containing excellent passages of colour, but the rocks fell far short of the water and the near ice.

Mr. E. T. Compton has the advantage of living amongst the moun-

tains, and shows it in his work at all altitudes. Perhaps he showed no painting quite equal to his Academy picture of last year, but he was still well represented. The broad, quiet evening light of 143 was admirably rendered, and the glacier and pool in the foreground of 151 bore comparison with anything in the room.

So much of Mr. McCormick's work has been done under uncomfortable circumstances that one can only wonder at the genius which has enabled him to produce so much that is really good. It is difficult to conceive more masterly sketches than Nos. 238 and 248, and the glow of 158 was scarcely less striking.

Of all the living artists who paint mountains as they are there is none with greater power than Mr. Colin Phillip. In spite of a certain flatness and want of atmosphere in much of his work he can at least paint a hill-side, and his rocks have character. Some day, we may hope, he will astonish the world when he can add to his masculine realisation, such as 229, more of the idealistic quality which No. 171 proves him to possess. The brooding quiet of a still lowering day was never better portrayed than in the picture of the mist-shrouded hills above the calm Lake of Hallstadt. If only he would tackle the upper world!

The evening view of Vesuvius (249), by Mr. MacCallum, was singularly powerful for a water colour, and, indeed, one of the most effective pictures in the room. The sense of size and atmosphere was particularly good.

Mr. R. T. Pritchett's studies of Kinabalu, though little more than sketches, were full of atmospheric effect, obviously rendered with perfect truth. The artist knew just the right moment to leave his pictures.

Miss Donkin worthily represented an honoured name with simple, faithful sketches of a modest kind (208, 309A).

It was a pleasure to see so much work from Mr. Hallam Murray's refined brush, more at home, perhaps, in architectural subjects, but also producing good work in 128, 129, 211, and noting successfully cloud effects in 216 and 259D.

It seemed strange to meet with the sober little 'Doré' (202), a small sketch of the Dent de Jaman. We may be thankful that he could sometimes rest from his colossal labours.

Space forbids mention of many good and unpretending works, but attention may be called to Mrs. Jardine's (143) rainy village scene, Mr. F. J. Blandy's straightforward sketch from the Beatenberg (157), two charming sketches by the Rev. Stopford Brooke (178 and 179), a lovely little winter scene by Mr. Cuthbert Rigby (201), and a capital picture by Mr. C. Pilkington (234), showing that he can not only climb, but paint. If Mr. Alfred Parsons would, of course he could paint mountains as well as he paints other things. It is a pity that the pictures by him were so un-Alpine.

Lastly, the screen of Edward Lear's drawings was an exhibition in itself. No more delightful work of its kind has ever been known, and one is at a loss to know whether to admire most the enormous amount of topographical information conveyed by such simple means or the extreme beauty of line and modelling.

Of mountain incident there is not much to be said. Mr. Herkomer (in 190) displays his usual dramatic power, with a lovely bit of mountain distance in the background. Of his other works 'The Arrest of the Poacher' (204), though not altogether faultless in its figure drawing, was a fine group, worthy to hang opposite to his noble oil picture (58).

Mr. Willink, whose merit as a pourtrayer of mountaineering adventure largely consists of a certain skill in suggesting unknown dangers just outside the picture, again showed several sketches (mostly seen before) tending to prove how effective a limited knowledge of anatomy may be when judiciously draped in the orthodox climbing garb. And he had several little leaves out of his sketch book. But we make bold to say that his most thrilling scenes have never reached the pitch of some of the photographs exhibited, still less of the two truly remarkable prints 192 and 212.

In conclusion Mr. E. T. Reed, in what may be called a post-historic peep (188), gave a gruesome presentiment of the cheerful aspect of our beloved mountains when the last climber shall have paid the debt of nature.

The unusual number of photographs sent to the exhibition suggest one or two subjects for reflection to exhibitors and to the critic. Doubtless the exceptional nature of the occasion was in great measure the cause of the increase, but it is abundantly evident that the rapid extension of photography among the members of the Alpine Club must force upon them a more serious consideration of the limits of space in their annual exhibitions than has hitherto been necessary. In the room allotted to the photographic section only about five-eighths of the total number of works sent in could be hung, and among those excluded were, unfortunately, some of considerable merit.

By no means remotely connected with this difficulty is the ever-growing proportion of enlargements. Many of those exhibited were admirable specimens of their class; nevertheless it is to be feared that the practice is indulged in to excess both as regards number and size, and may tend over much to the production of sensational work without sufficient regard to that technical excellence which appeals to the judgment of the expert. If contributors could agree to adopt some kind of unwritten self-denying ordinance whereby the admission of enlargements would be conditional on their exhibiting simultaneously a certain proportion of prints of the same size as their negatives—a new application, in fact, of the maxim, 'Business first, pleasure afterwards'—it is probable that there would be a gain in careful development, for, as a rule, the smaller prints are better tests of the quality of negatives than enlargements. The ultimate result could hardly fail to be a general increase in finish and delicacy.

These last-mentioned qualities were nowhere more conspicuous in the recent exhibition than in the work of Mr. C. T. Dent and Mr. Sidney Spencer. The winter studies of the former were unsurpassed both in technique and elegance, and his 'Winter Sunset' was a revelation of what can be done with the camera—with an artist behind it.

Captain Abney was represented by only two winter scenes, both worthy of his high reputation. One of them is the finest example of photography by moonlight which has been produced.

Signor Sella, on the other hand, was a large contributor, and, although two or three of his Alpine views hardly reached the high standard of excellence of his former exhibits, some of his smaller Caucasian photographs were very noteworthy for the successful treatment of comparatively dark woodland foreground combined with mountain distance. His 'Karagom Glacier' and 'West Face of Ushba' were also examples of great delicacy, and, although pictures of moderate dimensions, produced an effect of size and space which could hardly have been enhanced by enlargement. Signor Sella also sent a number of Caucasian panoramic views, some of which had not before been exhibited.

A collection of Himalayan views by Mr. F. St. John Gore was a welcome addition to the exhibition. Certain difficulties of subject were skilfully overcome. It is to be hoped that on future occasions contributions from the same source may not be wanting. The foregoing and a view of Masherbrum by Mr. Conway were the only Himalayan subjects.

Dr. Tempest Anderson's 'Volcanic Cones and Craters' in Iceland and his wonderful view of the Cirque of Gavarnie were of very high excellence. The latter, a fine enlargement, reproduced with diagrammatic accuracy the remarkable convolutions of the limestone cliffs.

Numerous enlargements bore witness to the industry of Mr. Alfred Holmes during the past season, but it is sufficient to notice two of them only. 'A Bit of the Grépon Traverse' was not only notable as having been taken from the summit of one of the most difficult of peaks, but also claimed attention as a most correct representation of the crystalline rock structure and jointing so characteristic of the aiguilles of the Mont Blanc range, and the picture was rendered complete by a very fine background. The view of the Meije from below the Col des Ruillans was a most effective work with fine contrasts.

Mrs. Main's selection of exquisite winter views had been exhibited previously, and therefore requires no notice on the present occasion. Mr. Eric Greenwood's fine enlargement of the Weisshorn and Rothhorn and Mr. Garwood's striking 'Piz Rosegg' were deservedly admired. Mr. O. G. Jones also exhibited some good work from the Dolomites.

Four scenes from the last-mentioned district by Mrs. F. T. Lewis displayed great taste and careful manipulation, and a beautiful winter scene near Grindelwald by Mrs. Moysey was one of the most admired pictures in the collection. Miss Hellman contributed four small but highly finished photographs of views near Ragatz.

Two contributions by Mr. F. J. Dean—one a familiar view from near the Riffel Alp, and another equally well known view in the Zmutt Valley—deserve notice for excellence of work. The perfect relations of foreground and distance in both were probably due either to combination printing or to very careful reduction. The result, however obtained, was highly satisfactory.

It is not needful to discuss here the merits of the older works included in the recent exhibition, the majority of which have become familiar to members of the Club on former occasions. Their admission was a move in the right direction, and the precedent might be followed occasionally with advantage at the usual annual exhibitions. For the older photographs, especially those of from five to ten years back, if selected from the best work of their respective periods, would help us greatly to form a correct estimate of the progress which may be made in the art at any future time. Applying in the present instance the test indicated, a comparison of the production of recent workers with that of their predecessors of some eight years ago leads to the rather curious conclusion that in the best work of the former in higher glacier regions there is not the improvement which might be anticipated when we consider the much more general use of the camera. Indeed, the best works of the late Mr. Donkin in this particular sphere display qualities which are not yet fully rivalled. On the other hand, both in the middle glacier region and in the valleys the improvement on work of the same period is manifest, as well in a technical as in an artistic sense.

The exhibition of lantern slides was on the whole successful, though the weather affected the attendance very markedly. Mr. Donkin's views still seemed to hold their own well. Among the other contributors none showed, perhaps, to better advantage than Captain Abney and Mr. Eccles. Mr. Eccles was far too scantily represented in the exhibition, but some amends were made for this by the beauty of his slides. Nothing could exceed the delicacy and variety of his cloud and mist effects. Even in photography a man must be able to see as well as to photograph. This quality Mr. Eccles showed that he possessed. The increasing popularity of winter photography was strongly illustrated. Fully one-half of the views sent for exhibition were of winter scenes. Mr. Woolley's were excellent. Mr. Holmes's work makes good slides, and his climbing pictures were graphic and well-chosen. Signor Sella's views were rather disappointing on the screen, and do not do his superlative work justice. The choice of a negative from which to make a slide and the printing are matters in which as a rule photographers do not exercise sufficient judgment. A good negative does not necessarily make a good slide, and the utmost care has to be taken with the printing if the points are to be well brought out.

NEW EXPEDITIONS IN 1894 (*continued*).

[Contributors of 'New Expeditions' are requested to observe the following rules:—(1) To forward their accounts in the form in which they are to appear. (2) To prefix the name of the peak or pass from the best map, and the altitude both in metres and feet in a parenthesis after the name. (3) To give the date of the ascent, and the names of the party. (4) To give exact references to any previously published descriptions of allied routes to which they may have occasion to refer. (5) To write the description with the best existing map before them, and to quote the figures of any measured point their route may touch. (6) To use always the points of the compass instead

of the misleading words 'right' and 'left.' (7) To record their 'times' exclusive of halts. (8) To make their descriptions as brief as possible consistently with the above considerations. (9) To write on one side of the paper only, leaving a large margin, and to begin a new sheet for each expedition.]

Eastern Graians.

PUNTA ROSSA (3,624 m. = 11,890 ft., Paganini's map) FROM THE S. August 19.—Mr. Christopher Cookson and Mr. T. W. Gould, with Fridolin Truffer and Louis Jeantet, descended from the summit of this peak for 100 yards along the S.E. ridge, and then struck down the S. face of the mountain, so as to gain the mule path over the Col de Lauzon. This descent is quite easy, but there is some danger of falling stones, and it is necessary to bear left across the S. face.

CRESTA GASTALDI (3,862 m. = 12,671 ft., Paganini) FROM THE E.; ROC DEL GRAN PARADISO (4,018 m. = 13,174 ft., Paganini). August 22.—Mr. Cookson, with the same guides, having gained the Col Chamonin by the usual route over the Tribulation Glacier, mounted the Cresta Gastaldi (apparently never quite climbed from that side), and descended by the W. ridge to the Col de l'Abeille. Thence they climbed along the crest of the rocky ridge running W. from that pass to the Roc, the meeting point of the three arêtes of the Grand Paradis.* This topographically important summit does not seem to have been previously attained, at any rate from the E. Thence the party descended with difficulty to the deep gap on the N. at the head of the great couloir by means of which the Grand Paradis is usually attained from the Col de l'Abeille. The descent was made by the usual route to the Victor Emmanuel Club hut.

TOUR DU GRAND ST. PIERRE (3,697 m. = 12,130 ft., Paganini). August 27.—The last-named party, with the addition of Mr. Cyril Bailey, ascended from the Monei Glacier, mainly by the rocks of the lower peak of the Tour St. André, to the snowy depression between the latter peak and the Tour du Grand St. Pierre, completing the ascent of the St. Pierre by the ordinary route. On their return they passed over both summits of the Tour St. André (3,650 m.) to the snowy dome marked 3,602 m. on Paganini's map: thence they followed the Cresta Paganini to the Colle Paganini, and went down by the S. side of the Cresta Paganini to the Monei Glacier. All parts of these two routes had been previously traversed, but they had not before been combined.

PUNTA LAVINA, N. SUMMIT (3,273 m. = 10,739 ft., Paganini's map); S. SUMMIT (3,308 m. = 10,854 ft., I. map) FROM THE N. AND S.W. August 20.—Messrs. Hiatt C. Baker and F. W. Oliver, with Alexander Burgener and Albert Supersaxo, anticipated Mr. Mushet's party † on both these climas.

Starting from the upper huts on the Chavanis pastures at 5 A.M., the king's hunting path was followed to the glacier lying between the N.E. and N.W. ridges of the N. Summit of the Lavina. Crossing this glacier, the Col des Eaux Rouges (on which there is now a pole, with

* *Climbers' Guide to the Mountains of Cogne*, pp. 98-9, 104.

† *Alpine Journal*, vol. xvii. p. 251.

a notice warning travellers against hunting bouquetins, &c.) was reached at 7 A.M. Hence the N.E. ridge was climbed to its point of articulation with the main N.-S. Lavina ridge. At this point stands the N. summit, which was ascended, the route then lying along the main ridge to the S. summit, attained at 8.10 A.M. The party then descended by the S.W. ridge and the Lavina Glacier to the Col de Bardoney, and after climbing the Grande Arolla (3,251 m., Paganini's map) returned to Cogne by the Arolla Glacier and the Valeille.

POINTE DE GARIN (3,447 m. = 11,310 ft., I. map) FROM THE S.W. *September 1.*—The same party, without Supersaxo, starting from Cogne mounted the Grauson valley, and gradually bore up N. till they struck the ridge at a point S.W. of the peak marked 3,252 m. on the I. map. They descended thence in a few minutes to the small glacier lying S.W. of the Pointe de Garin. Crossing this glacier in a N. direction they climbed up to the S.W. ridge of the Garin in 25 min. This ridge was followed for $\frac{1}{2}$ hr. Another $\frac{1}{2}$ hr. then led, by means of a couloir on the W. of the ridge, to a point just W. of the summit, which was reached in a few minutes. The descent was made along the N.W. ridge and the W. face of this ridge to the Pas du Valaisan, gained in 1 hr. from the top. Thence the Arbole huts were gained in another hour, and the path followed to Aosta, which may be attained in under 10 hrs. from Cogne by this route.

TOUR DU GRAND ST. PIERRE (3,697 m. = 12,130 ft., Paganini's map). *August 12, 1891.*—Messrs. Ellis Carr and A. F. Mummery, without guides, effected what seem to be partially new routes up and down this peak. Starting from the foot of the Monei Glacier at 5.20 A.M., they reached the upper part of that glacier by the usual route, and then bore S.E. to the N.W. foot of the Tour du Grand St. Pierre. They then ascended on the proper right side of the great snow wall between the peak and the lower point of the Tour St. André, keeping close under or over the rocky spur descending from the latter. The snowy depression at the head of this wall was gained by skirting under the final rocks of the St. André ridge, and so the usual route up the St. Pierre joined at 11.15 A.M., and followed thence to the summit. On the descent the party went down the W. arête to the first snow saddle on it, just N.E. of a small rocky point. Thence they cut down a steep snow slope to the bergschrund, crossing which the Monei Glacier was regained. The N. lateral moraine of that glacier was reached at 3.15 P.M. Thus the party anticipated Mr. Yeld's party* on the route of ascent, while on the descent they traversed the last bit of the W. arête and descended practically by Mr. Yeld's route of 1894, except that they soon cut down ice to the glacier, while Mr. Y.'s party kept along the rocks of the entire W. ridge.

Grand Combin District.

DENTS DU VÉLAN (about 3,208 m. = 10,525 ft.). *August 27.*—This name is locally given to the ridge, descending in a westerly direction from the Mont Vélan, which separates the Glacier de Proz

* *Alpine Journal*, vol. xvii. pp. 250-1.

from the Glacier du Petit Vélán. Mr. C. H. R. Wollaston, with Joseph Biner and Augustin Gentinetta, of Zermatt, followed the usual route from Bourg S. Pierre to the Proz Glacier, and taking to the rocks just N.W. of the figure 3 of the point 3,185 m. of the S. map ascended direct to the ridge. An enjoyable scramble along it, traversing the five teeth in succession, brought them to the highest point, where they found a cairn and a card showing that MM. René and Fernand Correvon had made the first ascent some few days previously. The rocks throughout are distinctly rotten, and one of the teeth being curiously fractured right through the middle, half of it seems not unlikely to fall at no distant date bodily on to the Proz Glacier. The N. face of the ridge is precipitous, and it was found impracticable to descend direct to the Glacier du Petit Vélán, so the party returned by the way they had come until, by bearing round to the N.W., they could get down on to that glacier. The way off this is not obvious, but by ascending some steepish slopes to the N.W. the Valsorey valley was easily reached by descending to and following the stream which comes down from near the Croix de Tzouss. The time from Bourg S. Pierre to the top was just over 7 hrs., including halts, and it took nearly 4 hrs. actual walking to return there.

Bernese Oberland.

SCHWARZHORN (3,132 m. = 10,276 ft.) AND WILERHORN (3,311 m. = 10,863 ft.). *July 26.*—Messrs. E. F. M. Benecke and H. A. Cohen, leaving the Schafberg hut at 4.40 A.M., reached the top of the Schafberg in 2 hrs. From there they went S.W. over the Bietsch-gletscher to the S. foot of the E. peak of the Schwarzhorn, which they climbed by the good rocks of its S. face (25 min.). From the top of the Schwarzhorn they followed the ridge to the Wilerjoch (20 min.), and from there, still following the ridge, went to the top of the Wilerhorn (55 min.) and to the foot of the first peak of the Kastlerhorn (20 min.). They then turned down a long rock-rib, which was easy but very loose, reaching the Wilergletscher in 1 hr. 25 min., descended the latter, cutting a good many steps (this would probably be unnecessary most years), and, bearing to the right, joined the Wilerjoch route, and got down to Ried in about 4 hrs. from the foot of the rocks.

The traverse of the Wilerhorn is a delightful walk, as the views all the way are magnificent, and the ridge, while perfectly easy, is yet pleasantly narrow in places; the whole climb is very suggestive of Crib Goch on a large scale.

BURSTSPITZEN (3,189 m. = 10,363 ft.). *July 28.*—These are five in number, on a ridge running from S. to N.; the highest is the one in the middle. The same party went from Ried in 2 hrs. 10 min. to the end of the Inner Fäflerthal. They then turned E., and went up a gully, steep grass slopes, and good rocks to the point where the actual ridge of the Burstspitzen begins (2 hrs. 5 min.). This ridge they followed to the top of the first peak (55 min.), and of the second (15 min.), where they built a cairn and left their cards. They then descended in $\frac{1}{2}$ hr. to the foot of the third peak, which Mr. Cohen ascended in 20 min.,

returning by the same route. The party then went down in a S.E. direction over a few awkward rocks and a long *débris* slope, striking the valley path between Heimscheggen and the Guggisee in 1 hr., and reaching Ried in 2 hrs. 5 min. more. There is some good climbing along this ridge; the most interesting bit, perhaps, is the descent from the second peak to the foot of the third.

GRINDELSPIZ (3,018 m. = 9,902 ft.). *August 1.*—The same party went from Ried in 1 hr. 10 min. to the beginning of the Aeusser Fafierthal, and from there ascended, in a northerly direction, very steep grass slopes and less steep *débris* to the foot of the final rock peak (2 hrs. 15 min.). The S. face of this consists of a series of big smooth slabs (a feature common to all this row of peaks), and the last part of the climb up these, which took 30 min. altogether, was not quite easy. The party descended the rocks by the same route in the same time, and then went down pretty direct to the Fafier Alp in 1 hr. 50 min.

SACKHORN (3,218 m. = 10,558 ft.) AND ELWERTÄTSCH (c. 3,200 m. = 10,499 ft.). *August 5.*—The same party, leaving Ried at 4, mounted over the Weritzalp and the moraines under the W. face of the Tennbachhorn to the rocks marked 3,001 m. (2½ hrs.). They then went northwards over snow (the last bit steep) to the ridge, and followed this in a S.W. direction to its lowest point, which is immediately N.E. of the Sackhorn (1 hr. 20 min.). (This depression could also be reached direct from the Tennbachgl.) From there they ascended the Sackhorn by a short ice slope, a few rocks, and a snow ridge in 20 min., returning by the same route in 15 min. They then descended towards the Gasternthal by a small glacier and the rocks of the Sackhorn, which were at first easy, and afterwards decidedly the reverse, finally traversing a steep snow slope, across which stones fell incessantly, and reaching Alpetli in 5 hrs. from the pass. From here a rather troublesome descent led down to the valley in 1¾ hr., Kandersteg being reached in 2¼ hrs. more.

This pass is a very bad one, as it is, comparatively speaking, very long, and the passage of the snow slope (which takes nearly an hour, owing to the number of iced 'stone shoots' that have to be dealt with) can never be quite safe, as the stones begin to fall across it already at a very early hour of the morning.

Dolomites.

SPALLONE DEI MASSODI (3,002 m. = 9,909 ft.) FROM THE BOCCHETTA DEI MASSODI. *September 25.*—Mr. C. A. V. Butler, with Bonifacio Nicolussi, made what seems to be the first ascent of this peak. From the Tosa Club hut they went to the N. Massodi 'Hochkar,' and then N.W. through a snow couloir to the Bocchetta dei Massodi. Thence they mounted over rocks to the right through a veritable chimney (quite enclosed), and finally attained the summit over easy rocks. In their descent from the Bocchetta they first went a bit S. towards the summit of the Pizzo di Molveno, turned to the W. round a buttress, and descended on to the Fulmini Glacier, reaching the Tosa Club hut (in about 2½ hrs.) after crossing the Bocca d'Armi.

NORWAY.

Jotun Fjelde.

SOLEITIND * (6,630 ft.). *August 13.*—Messrs. C. W. Patchell, E. V. Mather, and J. Simpson, with Johannes Vigdal as guide, followed the whole north ridge to the top from Turtegrö. They descended by the usual route to the Alpine hut at Berdal Sæter, which they reached after a most interesting day's climb of 11 hrs. W. C. S.

SKAGASTÖLSTIND † ASCENDED BY LADIES.—This fine mountain, first ascended in 1876, † has at last been climbed by ladies, and, oddly enough, on three consecutive days—on July 30 by Fröken Bertheau, of Christiania, with two Norskmen; on July 31 by Fröken Fanny Paulsen, also of Christiania, with two guides; on August 1 by Miss Evelyn Watson, with two Englishmen.

VIKINGEN'S SKAR AND MIDTRE RIENSTIND (about 6,600 ft.) FROM THE EAST. *August 28.*—On a fine but rather cloudy morning a party of seven storm-tied mountaineers set off from Øiene's cosy mountain inn at Turtegrö—the Riffelberg of the Horungtinder—for a day of fun on the Riens Bræ. Their principal intention was to explore, with the aid of candles and lanterns, an ice cavern in that flat glacier, which, as in the case of the well-known cavern at the foot of the Arolla glacier, has been bored through the ice by the sun-warmed waters of a lateral stream. In 1893 Herr Sulheim and others had been several hundred yards in the cave, but had been stopped by a deep pool of water. On the present occasion bold schemes of swimming were jauntily aired, whilst inward resolutions of a drier nature were privately formed, but not at first proclaimed aloud, by more than one of the party, and anticipatory and involuntary shivers were the lot of all. It was also to be a big day for the cameras, and one too to be remembered by those who carried them.

Though the glacier is barely two hours' walk from Turtegrö, over three hours were spent, and well spent too, by the photographers. At last the Riens Bræ was reached, much to the joy of Slingsby, who had not revisited it since making, in company with three other Englishmen, the first passage over the Riens Skar twenty years earlier. This pass, which is exceedingly beautiful, connects Vetti on the south with Turtegrö on the north. On the occasion of the first passage the party called for milk and *fladbröd* at Riens Sæter, and were thought to be 'Huldre Folk' who had come out of the rocks by the kindly but superstitious folk at the sæter. Huldre Folk, who usually possess great riches, and—tails—are supposed now and then to intermarry with ordinary human beings. On this occasion the inducements to enter into matrimonial alliances must have been too slight, though at that time each of the four strangers was a bachelor; certain it is that they all passed on uncaptured. Those good times are now no more, and the sight of men carrying ice axes and ropes is nowadays looked upon quite as a matter of course.

The mouth of the cavern was blocked up by an immense spring

* *Alpine Journal*, vol. xiv. p. 162.

† *Ibid.* vol. xi. p. 144.

avalanche, and, as no one was inclined to dig through it, Sulheim proposed several bold schemes. One, however, commended itself at once—viz. to cross the Gravdals Skar to the head of the Gravdals Bræ, and to make from this glacier a new pass over to the Stölsmaradals Bræ, south of the Midtre Riiens tind, and to return by the Riiens Skar—in fact, to make a complete circuit of the Middle Riiens tind. The fact that the pass would lead from nowhere to nowhere else, as is the case with so many glacier passes in the Alps, was rather a recommendation than otherwise. Two parties were formed and roped. The first consisted of Messrs. Cyril Todd, H. Congreve, G. H. Goodman, and W. Cecil Slingsby, the second of Herr Sulheim and Messrs. A. L. Bill and P. E. Sewell. Todd led very well up a steep belt of snow some 800 feet high, on each side of which was an icefall. To the surprise of every one, two foolish lemmings were seen running about on a huge rectangular mass of névé, apparently disconnected from the rest of the glacier. How they got there, or how they would get away, was a great puzzle. Probably one of the numerous birds of prey which always follow the lemmings on their migrations would swoop down upon the plucky little fellows and thus stop their mountaineering. On the Gravdals Skar the views of mist-veiled mountains, whose coyness much troubled the photographers, were very grand. A twenty minutes' traverse at the head of the Gravdals Bræ brought the two parties to the rocks below Sulheim's new pass. Here there was $\frac{1}{4}$ hour of delightful rock-climbing to the col, and, to the joy of all, it was seen that a way down the other side could easily be made. The name, Vikingen's Skar, was unanimously adopted in honour of Herr Sulheim, who is not only descended from the Vikings, but from Old King Harald Haarfager himself. The views of Skagastölstind were most tantalising, but at the same time most glorious. The Chamonix aiguilles themselves are no wilder in form than the rugged spires of the Horungtinder.

The first party left the others photographing, and made for the Riiens Skar. When near the col, the eastern face of the Midtre Riiens tind,* though peppered with new snow, seemed so very tempting that they determined to attack it forthwith. Todd still led. The rocks—gabbro—were very steep, and one chimney of about 30 feet high was exceedingly difficult. Much holding on, shoving, pulling, and hitching was necessary, and altogether it was an admirable climb of about 1 hour 10 min. The peak has been twice climbed from the west, never before from the east. The descent, with the cheerful accompaniment of a croaking raven, occupied rather less time, and the difficult chimney was avoided. The second party at the same time climbed the Østre Riiens tind, an easier peak, on the very top of which they found a lemming. On the descent to the Riiens Bræ a capital glissade was indulged in. Turtegrö was reached in about twelve hours after leaving it in the morning. The Horungtinder are by no means exhausted yet, and the climbing is first-rate. WM. CECIL SLINGSBY.

* This peak, with a belt of cloud upon it, is well shown in the coloured sketch (p. 366) of *Norway in 1848 and 1849*, by T. Forrester. The Riiens Skar is to the right of the peak, and the Vikings Skar to the left, but barely in view.

Justedals Bræ.

THE AUSTERDALS SKAR, HVEITESTRANDEN TO OLDENDAL (about 6,100 ft.), AND THE EXPLORATION OF THE AUSTERDALS BRÆ. August 11.—Messrs. William Cecil Slingsby, Cyril Todd, and Mikkel Mundal were fortunate enough to make this, the last remaining, and undoubtedly the finest, pass over the Justedals Bræ, and to explore for the first time a huge glacier region hitherto entirely unknown, which the leader of the party has had in his mind for the last thirteen years. The previous day they crossed the pretty pass from Fjærland to Hveitestranden, and waged war during the night with the fleas at Ny Sæter, a chalet marvellously situated at the junction of two of the finest glacier valleys in Europe.

They left the sæter at 3.55 A.M., and after walking about three miles along a flat valley, where are many most interesting and ancient terminal moraines which resemble earthworks erected by sappers and miners, they reached the Austerdals Bræ at 5.15, got on the ice from the right bank, and then crossed to the left to avoid a small icefall, though it was quite apparent that a way might have been made along a lateral moraine on the first side. They all used the Mummery spikes, which saved much step-cutting. This glacier is about the same width as the Mer de Glace at Les Ponts, and, like it, has very little rise in it for five or six miles. There is a most beautiful curve in it, and on both sides it is hemmed in by huge walls of gneiss, that on the N.E. being an almost vertical precipice over 3,000 ft. in height.

The walk up the glacier was exceedingly interesting; all the well-known glacial phenomena were present, the dirt bands being especially fine examples. After about an hour on the ice the party took to the left bank, in order to avoid a maze of crevasses, and made quick progress over hard avalanche snow. This brought them to a large plateau at the head of the main glacier, which is fed by three large tributaries, which tumble down their thousands of tons of ice, hard blue ice too. Each is a huge icefall, the two northern without a break for nearly 3,000 ft. in height; the southern arm is rather less, but, like its neighbours, was at that time of the year quite impassable. In 1889 the writer and three other men had looked down over the snow basin at the head of this tributary glacier and vainly imagined that in ordinary years a way might be made down to the Austerdals Bræ below.*

Thanks to the lovely curve in the bed of the Austerdals Bræ, the wondrous 'cirque' at the head has never been seen by the Ordnance surveyors, who made many a wild guess when they mapped the Justedals Bræ, and most certainly had not the remotest notion that there was to be found the finest ice scenery in Europe. This is not the place to go into details, but the writer merely wishes to direct attention to a place which at some future period will become famous.

It was quite clear at a glance that there was one way only up to the

* Vide *Alpine Journal*, vol. xiv. p. 507, line 20, and *Den Norske Turist Forening's Aarbog for 1889*, p. 11.

upper snow fields, by a broad rock buttress which separates the middle from the southern icefall. After crossing a weird and an exceptionally deep bergschrund, at 7.45 the party reached the foot of the buttress; and very nasty it was too, as it consisted of steep slabs of schistose rock all ready to slide down, with or without due notice, and be swallowed up by the angry jaws of the crevasse below. The greatest care was needed, and when breakfasting it was necessary for the party almost to lie down at full length, in order to distribute their weight over as wide an area as possible.

About 300 ft. above the glacier an overhanging curtain of rock blocked the way. Though this was barely 20 ft. in height it puzzled the party for some time to find a weak place. At last Mikkel found an oblique crack, something like that on Napes Needle on Great Gable, which led up to a narrow ledge under an overhanging rock, at the end of which was a hole, through which the blue sky could be seen. The two others planted themselves as firmly as possible while Mikkel brilliantly mounted the crack and crept into a small cavern until Todd joined him. Then Mikkel crawled along the ledge and through the hole, and for the first time since leaving the glacier was on firm ground. The others soon followed, and then found good hard gneiss, beautifully carpeted here and there with bright Alpine flowers. At 10.45, at a height of about 5,800 ft., they reached the great snow field, and, much to their surprise, found a large cairn of stones, and near to it some recent footsteps.

'A bear's foot spoor,' said the knowing ones.

'Uncommonly like a man's,' said Todd in his ignorance.

'Nonsense,' said the others.

However, a little higher up the footprints led to a hole in a snow-covered crevasse.

'No bear would go there, it would know better; it must have been a man,' said Mikkel.

Todd was right, as, by a most strange coincidence, Herr K. Bing, of Bergen, and another man were descending a little to the south of Slingsby's route at the same time as the latter's party were making the ascent, having crossed the snow field the previous day from Lundedal and slept out on the rocks near the cairn which they built. A few days before this, Slingsby had told Bing of his intention to explore the Austerdals Bræ, and had recommended him to visit it. Thus it happened that the first ascent from, and the first descent to, this most wonderful cirque, previously entirely unknown, were made at the same time, and, oddly enough, the two parties did not meet until three days later. Each, however, saw traces of the other.

This summer the condition of the snow in Norway was exceptionally good, and on the upper snows of the Justedals Bræ one could easily walk at the rate of $3\frac{1}{2}$ miles an hour; leggings were unnecessary, as one never got more than ankle deep. The crevasses were few in number and very narrow; there were no huge rectangular and disconnected masses of névé nor overhanging eaves or lips to the crevasses, as is sometimes the case. This happy condition was the result of an exceptionally large snowfall in the spring, and of the glorious weather of June and July, when no new snow fell whatever.

The party plodded steadily ahead, but soon entered into a thin mist, often the accompaniment of a northerly wind, and were unable to see more than the ghosts of three crags which rise out of the snow field, unknown to the map-makers. This was most unfortunate, as the course, planned years before by the leader of the party, and which lay along the trough of a shallow snow valley, was entirely unknown and hitherto untrodden. The compass was the only guide, and the course aimed for was W.N.W., the desired haven being the snow basin at the head of the Melkevolds Bræ; the great thing to be avoided was to get into any glacier basin above Stardal, west

At 1.10 P.M. the watershed was reached, and the slope fell away gently west and north-west. The thin mist, barely 50 ft. in thickness, hid everything from view, and great care was needed. The leader considered that the distance covered across the snows was not quite enough, but, as to go too far west would be much more dangerous than to go a little too much to the north, a middle course was taken, and at 2 o'clock rocks were reached. 'Where in the world are we?' 'I think to the east of the Brixdals Bræ, but am not sure,' said the leader. A descent of several hundred feet through the mist proved this surmise to be correct. Another snow trudge was necessary, and at 4 the rocks at the east side of the head of the Melkevolds Bræ were reached, though the fog hid all known points persistently from view. A rough scramble down glaciated rocks, an hour wasted in trying to descend the ice at the foot of the glacier, and then the Olden valley was reached at 7, and the little farm-house in Brixdal at 8. Thus ended a most successful day, in which much entirely new ground had been trodden. Heavy rain fell during the last hour. The presence of mist on the upper snows was most unfortunate, as the writer, who, solely from the absence of competition, knows more of the passes over the Justedals Bræ than any other person, was particularly anxious to localise one great crag, an island in the midst of a snowy sea, which he saw, also through the mist, in 1889, and at the back of which he has been on three other occasions. Another visit to this land of snowy domes will therefore be necessary.

FOSHEIMSDAL TO FJÆRLAND (5,350 ft.). *August 13.*—The same party (Messrs. Slingsby, Todd, and M. Mundal), having the previous day crossed the beautiful Olden Skar, set off from Aamot for a new glacier pass in a Stolkjærre at 5 A.M., and at 7.7 reached the picturesque farm, Fosheim ('the home by the waterfall'). From here they walked up a dull valley with a pretty name Fosheimsdal, and at 10.30 reached a wild tarn on the surface of which many large blocks of ice were floating. From this place the walk was extremely interesting, and here and there some nice rock-climbing was necessary. The course the party followed was along the crest of the wild precipices which rise almost perpendicularly to a height of over 4,500 feet above the greenish blue waters of the Kjösnes Fjord. A stone could almost have been thrown from the top of the cliffs into the water. The view was marvellously grand. The party climbed over two peaks S.E. from Björnga

and reached a gap just above the Befrings Vand* at 1.15. On the way the party had met with hundreds of lemmings, and in one case they found one in the middle of a large snow field. They are extremely pugnacious and never allow any one to pass within a few yards of them without a challenge, a shrill squeak.

From the gap some interesting climbing up huge slabs of gneiss led to another little peak from which the party made a good glissade down to the Justedals Bræ proper at 2.30. After exactly 2 hours' walking over snow in absolutely perfect condition, though the sun's rays had been streaming upon it for nearly half a day, the party reached rocks again, a little north-west from Almenipa, from which capital glissades brought them to the now well-known route over the Lunde Skar. At 4.53 they unroped, and soon afterwards reached the zigzag path which is being made by the Turist Forening. At about 5.30 they joined the carriage road now so much frequented by 'Arrys' and 'Arrietts' when they go to see a 'glazier' from the large yachting steamboats which nowadays come so often to Fjærland. A mere glance at the 'Amtskart,' incorrect though it be, will show that this pass must of necessity afford most glorious views. Such was indeed the case. Of difficulties there were none, but in some years, as was notably the case in 1889, the snowy uplands north of Almenipa will require a considerable amount of snow-craft to be exercised by the leader of any party who crosses them. It was proved on this expedition that the extreme western point of the great Justedals snow-field is due south of the tarn in Befringsdal, and that it is not connected with the glaciers on Björgu, as shown on the maps.

WM. CECIL SLINGSBY.

LUNDE TO HVEITESTRAND BY THE LISJEDALS SKAR AND AUSTERDALS BRÆ (*August 10 and 11*), BY HERR K. BING AND DANIEL SÖKNESAND. —The following sentence in the 'Nor. Tur. For. Aarvog for 1881,' p. 90, led to this expedition: 'At the N.E. corner of the cirque was a steep gully, which at first sight seemed to afford a passage from the valley upwards, but an avalanche which we saw plainly forbade experiments at that time, though under certain conditions I believe this chimney could be climbed.' Bing, who is a most daring mountaineer and a brilliant rock-climber, thought he saw the chance of an adventure in this most uncompromising gully, which connects the Lisjedals Bræ and the grim cañon of Lundedal, from which hitherto a very steep gully, about 1,200 ft. in height, leading to the Lunde Skar, has been the sole outlet upwards. By the use of a considerable amount of diplomacy Daniel Söknesand was induced by Bing to share in the prospective honour and glory which the successful accomplishment of the expedition would merit. After sleeping at Lunde they began to ascend the gully at 6.10 A.M., and had to dodge a few falling stones, and, in fact, were quite ready to dodge a falling *écrac* too if need be. They, however, soon passed the danger by mounting a rib of rock on the west side. At 9 they reached the upper snows, 4,000 ft. above Lunde, in thick mist. They then steered E.N.E., and at 3 P.M. were on the south of the Lille Optags Bræ, down which no descent

* *Alpine Journal*, vol. xiv. p. 506.

can be made into Langedal. From then till 8 P.M. they rounded the head of the huge Langedals Bræ,* and encountered a very heavy snow storm from the north and very many crevasses, though this year these glaciers were in exceptionally good condition. At 8.30 they reached rocks overlooking the Austerdals Bræ, and erected a large cairn, which was passed the next morning by Slingsby's party. From 10 P.M. to 2 A.M. they lay down and tried to sleep. From 2.15 till 5.30 they were on the Austerdals Bræ, and at 7.15 reached Tunge Sæter. This was a very remarkable glacier expedition, and one on which very great risks were run—risks which the writer is happy to believe will be avoided in the future. It must always be borne in mind that mountaineering experience cannot be so cheaply gained in Norway as in the Alps, solely because efficient guides, possessing a decent amount of snow-craft, are still very scarce in Norway, though many active young fellows are by slow but sure degrees gaining the experience needed to make them good mountaineers.

Herr Bing is most heartily to be congratulated upon having achieved many notable successes this year, and will, we trust, lead many hundreds of his countrymen to visit the glaciers of their native land and to cross over them in every feasible direction. On this expedition, so briefly described, the ground covered was enormous, most of it in a thick mist, some during a snow storm. On this large snow field, which has no parallel in the Alps, but which may be likened in area, though not in shape, to the Petersgrat multiplied by ten, there is a strange absence of landmarks at all times, and though innumerable ice streams drain this desert of snow in every direction, comparatively few can be ascended or descended, owing to their excessive steepness. Neither can their banks in many cases be utilised, as the ice is hemmed in by mural precipices of gneiss. The rock buttresses often afford a feasible route, but they must be known. By strange good fortune Herr Bing landed, in a mist, at the top of the only buttress by which a safe descent could be made to the noble glacier below. But for this one place he would most probably have been again benighted. By his remarkable descent Herr Bing shares with a second party, who were ascending the glacier at the same time that he was descending it, the credit of exploring the fastnesses of the Austerdals Bræ.

W. C. S.

SUPHELLE NIPA AND KALDEKARI (about 5,600 ft.). *August*.—Herr Bing, with Herr Dale, of Mundal's Hotel, made a fine glacier expedition, which included the ascents of the above-named mountains. They slept at the Suphelle farm and made their way up the grassy ravine west of the Suphelle Bræ to the huge snow basin which feeds this well-known glacier, but which is so little suspected by those who keep merely to the valley. Then came a grand walk; Suphelle Nipa was crossed, and in order to reach the second mountain an immense détour was necessary to round the head of the Lille Suphelle Bræ. Kaldekari, pretty little peak though it looks from Mundal, made no resistance whatever at the top, but had its revenge later on, as the

* *Alpine Journal*, vol. xiv. p. 507.

climbers, in trying to descend towards Hveitestranden, were benighted on the slabs of rock quite low down. The ascent of the Suphelle Nipa by the route above named and the descent by the east bank of the Böiums Bræ is an expedition very much to be recommended.

W. C. S.

BRIXDAL TO LANGEDAL.—In July this year a Christiania gentleman and two guides made this long but exceedingly fine glacier pass for the first time. No particulars have yet been received.

W. C. S.

Gjegnalund and Aalfoten Bræ.

SKJERDAL TO VESTRE ØKSENDAL AND AALFOTEN FJORD. *July 23 to 26.*—Herr K. Bing and F. C. Svendsen spent three whole days in these icy uplands, whose first crossing formed the subject of a paper read before the Alpine Club by Mr. Chas. Hopkinson.* Bing and his friend spent their first night in a sæter, the two next in the open. They crossed several glaciers and climbed the Bukke Nipa (5,200 ft.). Then Svendsen went home and Bing rested a day at Förde.

KOMPAS NIPA, MARIETIND, AND STORE HEST. *July 28 to 30.*—Herr Bing and Anders Kornelinssen spent three days amongst the glaciers west of Gjegnalund. They slept, as before, in the open. They had many adventures and met a bear. They climbed two of the above-named peaks together, but Bing alone had the hardihood to attack, and the satisfaction of ascending, the third, which he named Marietind—‘a most remarkable tower of rock some 300 ft. high. It is entirely cut off from an adjacent ridge by a deep gap and an overhanging precipice’† This Bing found to be very difficult, and had to work up a chimney by back, knees, and head. We hope to have the pleasure of reading the details of Herr Bing’s most successful mountaineering in the next Bergen ‘Aarbog.’

W. C. S.

Söndmöre.

EASTERN PEAK OF GJEITHORN BY NORTH-EAST ARÊTE (about 4,600 ft.). *August 29.*—Messrs. C. W. Patchell, E. V. Mather, and J. Simpson left the inn at Øie at 8.40 A.M., crossed the Skylstadbrække, and intended to follow the steps of the Messrs. Hopkinson up to the Store Gjeithorn,‡ as well as the Brekketind.§ Dense mists prevented them from seeing either of these lovely aiguilles, so they tackled the arête on the north-east of the little glacier descending from both peaks, which arête is, in fact, headed by the Brekkerind itself. They had 1¼ hr. of capital rock-climbing, and at 2.45 they reached the top of the east peak and descended by the same route, reaching Øie again at 7. The ridge which they followed is, like many other ridges in the district, pierced here and there by great holes. Some of these holes are said to have been made by the arrows which St. Olaf shot at the numerous trolls which in olden days dwelt on the mountains of Söndmöre. At Standal a broken arrow which pierced through a ridge on Gluggen-

* *Alpine Journal*, vol. xiv. p. 380.

† *Ibid.* vol. xiv. p. 162.

‡ *Ibid.* vol. xiv. p. 382.

§ *Ibid.* vol. xiv. p. 609.

tind forms a very substantial stone bridge, 16 feet long, which the writer has crossed over.

KVITEGGEN (about 5,500 ft.) *September 1.*—Messrs. Patchell and Mather made a variation of Mr. Slingsby's route in 1881* by keeping near to the north-west angle of the north face. They climbed up a difficult buttress to the base of the perpendicular rock face immediately below the first summit. Then they traversed this face westwards by a very narrow ledge where the holds were scarce and small, which brought them to the usual route. The descent, which was made by the same route, was not absolutely without danger. New snow was also present. The time occupied was 5 hrs. up from Fibelstadhaugen and 4 down.

ROMEDALSHORN † (4,510 ft.). *September 4.*—Messrs. Patchell and Mather left the Kjölaas farm at 8.10 A.M., reached the sæter called Stenstöl at 9.30 and the top of the 'band' at 11.10. From here steep and hard snow slopes led to a gully west of the final peak. From 1.10 to 3.10 P.M., including the time spent over lunch, they had some excellent rock-climbing up to the top. They left the summit at 4 and descended by a series of gullies and steep pitches to the upper Romedals Sæter at 6.45, and reached Kjölaas again at 8. The mountain is a typical Söndmøre peak with very narrow and jagged ridges. The party found clean quarters and most kindly people at the farm.

WM. CECIL SLINGSBY.

ALPINE NOTES.

AIGUILLE FORBES.—With the consent of the first ascenders of the peak this name has been given to the point marked 3,549 m. on the Siegfried map and to the N.E. of the Aiguille du Chardonnet, which was first climbed in 1893 by Messrs. Holmes, Brigg, and Greenwood.‡ As this summit stands opposite the Aiguilles Dorées and the Fenêtre de Salinaz, both associated with Principal Forbes, there is a certain appropriateness in commemorating in this neighbourhood the explorations of one of the early travellers in the chain of Mont Blanc. The name 'Aiguille Forbes' will, therefore, appear on Herr Imfeld's forthcoming map.

AMONGST THE LEPONTINE ALPS.—The ascent to the summit of the *Helsenhorn* (3,274 m.) from the Kriegalp Pass was effected with great difficulty by Herr J. J. Weilenmann as far back as 1863. No account of this expedition seems to have been published, and it is known only from scattered allusions,§ while, apparently, it was not repeated till 1894. Hence the following notes describing the second ascent by this route may be of use.

On July 20, 1894, I started from Binn with my usual guides,

* *Den Norske Turist Forenings Aarhog for 1881*, p. 109.

† *Vide Söndmøre*, by Kristofer Randers, p. 106.

‡ *Alpine Journal*, vol. xiv. pp. 514-5.

§ See references in *Lepontine Alps*, p. 22.

Christian Almer, jun., and his brother Rudolf, and followed the ordinary route to the Kriegalp Pass as far as the edge of the final plateau (2 hrs. 50 min.). We then mounted S.W. over stones, leaving to the right hand a great couloir running up towards the Vorder Helsen (3,109 m.), and ascended by broken rocks to the base of the very steep snow slopes lying to the N. of the great snowy N.E. face (1 hr. 10 min.). Hence we ascended these slopes as nearly as possible in a straight line to some rocky terraces, climbed up these, and by a final very steep snow slope gained the N.W. arête (1¼ hr.), 20 min. up which led us to the summit of the peak in 2 hrs. 45 min. from the Kriegalp plateau. No difficulties were encountered, but the slopes were very steep, and, from a distance, look even steeper than they really are. The snow was in excellent condition. Another route (probably more closely resembling Herr Weilenmann's than that described) was taken on August 5, 1894, by Signor R. Gerla, with three friends and the guides Marani and Roggia. From Veglia they gained the ridge between the peak and the Kriegalpstock, and then mounted, in 4½ hrs.—to the N. of a great snowy couloir—by rocks and an ice slope, and the rocks above it, direct to the summit.*

Herr Schmid, the enterprising landlord of Binn, has built many cairns, and in places made a small path, to mark the route up to the Ritter Pass, on the E. slope of the Kummen glen. We took this route on the descent from the Helsenhorn, but unanimously agreed that our old route,† more to the W., in the same glen, is infinitely to be preferred in every respect. Herr Schmid has also made a very convenient new path from Maniboden to the Geisspfad lakes, keeping N. of the great couloir mentioned under (a) in my account of the Geisspfad Pass. ‡

I may add that on July 21, 1894, we three made the second ascent of the *Klein Schienhorn* (2,925 m.), § climbing the final needle from the gap between the two highest points. As our 70-ft. rope reached easily from the gap to the summit, the height of the final needle is not much over 60 ft. The rocks are steep, but good.

In 'Alpine Journal,' vol. xvii. p. 47, line 13, for N.E. read S.W.

W. A. B. COOLIDGE.

IN THE BERNESE OBERLAND.—Many small changes have taken place in this district in 1894, or will be carried out in time for the season of 1895. It may be useful to mention those which have a special interest for climbers.

Inns.—The new 'Bear' Hotel at Grindelwald was finally opened in June 1894. It can accommodate 400 persons, and is to be open all the year round. Many English visited it at Christmas time. The Hotel Victoria at Grindelwald was opened in 1894: it is some way N. of and above the W. end of the village, on the edge of the forest, and occupies perhaps the finest position in the valley. The

* For further details see the *Rivista Mensile* for September 1894, pp. 323-4.

† Fully described in *Lepontine Alps*, p. 20.

‡ *Lepontine Alps*, p. 32.

§ *Ibid.* pp. 35-6.

inn on the Männlichen, near Grindelwald, is now in the hands of Herr J. Boss, the eldest of the well-known brothers. A *char* road to connect it with the inn on the Kl. Scheidegg is in course of construction, while a good footpath down to Wengen has been already completed. The Hôtel Bellevue, on the Kl. Scheidegg, has been rebuilt on a very large scale, and it is said that a large rival house will soon be built near it. The inn on the Great Scheidegg has also been rebuilt on a larger scale. The new inn on the Engstligen Alp, above Adalboden, was opened last summer, and greatly facilitates the ascent of the Wildstrubel and other summits in its neighbourhood.

Club Huts.—The Pavillon Dollfus has now become the property of the Swiss Alpine Club, and has been doubled in size. A new path to the Schwarzegg hut was made in September 1894: it passes by the Bäniseegg and above the right bank of the Eismeer, thus saving the *détour* by the Zäsenberg and the Enge. In the spring of 1895 a new path is to be made up the Kalli slopes on the way to the Bergli hut. It seems likely that a Club hut will at last be built near the Gauli glacier, where one has long been wanted; but the rather absurd scheme for one on the Petersgrat does not seem to make much progress. The Dossen hut was in very bad condition in June 1894, and it is said that it is to be once more removed to another site. The Frauenbalm (or Blümlisalp) stone hut is in a bad situation under a great rock; a large new wooden hut has consequently been built, a little higher, up on the very crest of the ridge between the Oeschinen and Kien glens, just S.E. of the great yellowish rocky face (pierced by a hole) to the S.E. of the Hohthürli Paas. The Guggi hut was rebuilt in 1893.

Railways.—It is announced that the funds for the construction of the railways up the Eiger and the Jungfrau (1894 scheme) have really been secured. The first section of the Eiger railway (from the Kl. Scheidegg inn to the edge of the Eiger glacier, at the foot of the Rothstock) is to be constructed in 1895. According to the 'Oberland' newspaper for October 11, 1894, the latest proposed railway (an electric one) up the Jungfrau is to leave the Eiger line at the Eiger Glacier station, and is then to run through the Mönch to the summit of the Jungfrau. The force (3,000 horse-power) to drive it is to be obtained from that bit of the Lütschine river which is between Lauterbrunnen and Zweilütschinen. The projector of this lamentable scheme, Herr Guyer-Zeller, is reported to be determined to carry it out. The concession for the Eiger line has been obtained; that for the Jungfrau railway was also (we regret to say) granted during the December session of the Federal Assembly. As to the Jungfrau line several interesting details were made known during the debates in the Federal Assembly. The last bit of the line is to consist of a vertical tunnel and a lift, but an amendment was accepted by which the right of all persons who reach the summit on foot to move about freely on top was specially reserved, the company being only allowed to expropriate so much space as is necessary for the station, &c. The cost of the construction of the line is estimated at 8,000,000*f.*, and the annual profits at 360,000*f.* It is hoped to convey 10,000

travellers annually. The price of a ticket for the single journey is to be 31f. 50c., and for the double journey 45f.; but guides, porters, and other natives are to be allowed reduced fares, not exceeding 50 per cent. It is said that the line will be completed in five years. Special precautions are to be taken as to securing the safety of the workmen engaged. A meteorological observatory is ultimately to be built on the summit. One really wonders how much room there will be left on the summit after all these buildings are constructed, and whether any of the projectors have actually seen the top with their own eyes!!

Miscellaneous.—The road over the Grimsel Pass was opened in September 1894. The fee of 1 franc per traveller charged for the maintenance of the path up to the Bäregg inn, near Grindelwald, and for the use of the ladders leading down to the Eismeer will be abolished in 1895; the ladders will remain *in situ*, but will no longer be kept up.

Ascents in 1894.—After another long interval the Mönch has been again scaled from the Wengern Alp, but the difficulties *en route* were so serious that the summit was only gained at 3 p.m. This ascent took place on June 29, and was made by Herr A. Hügli (a Bernese law student) with the two Johann Kaufmanns, uncle and nephew. More than 4 hrs. step-cutting and a ladder were required to clear the great difficulty. Herr Andreas Fischer and young Johann Kaufmann, on July 8, traversed the *whole* of the ridge leading from the Jungfraujoeh to the summit of the Mönch. Full particulars of these two climbs will be given in a later number. The Altels was ascended from the N. by the Herren Wäber on July 25. The second ascent of the Wetterhorn from the Huhnergutz Glacier was made on July 1 by Herr J. E. Strauss, of Vienna, with C. Jossi and Ig. Lorenz, more than 2,200 steps having to be cut.

W. A. B. COOLIDGE.

FUSSHÖRNER.—On August 11, 1894, Mr. P. E. Lord and I, with François and Sylvain Pession, made an attempt on the peak of the Fusshörner next, I believe, to the north of the one marked 3,106 m. on the Siegfried map. We attacked it nearly straight up from the Ober Aletsch glacier, but were driven back by a fierce wind and sleet. When we turned François said we were close to the top; the climbing here was very difficult. The great feature of the climb was a splendid rock chimney, which our rope of 100 ft. was just long enough to allow of our ascending one at a time, after François had got up it, unaided, by a splendid piece of climbing. The sleet changed first to snow and then to rain, and we arrived at the Bel Alp hotel wet through.

G. YELD.

HUT AT PIAN D'ORSINA.—This hut, which is situated above Palagnana (Lucchese), in the Apuan Alps, was opened on August 10. It is to be kept as an inn, in Tyrolese fashion, and is provided with all accommodation needful for tourists. The situation is described as exceptionally fine. Attempts have been made to cultivate various trees and Alpine plants in the neighbourhood; they appear to be successful.

THE NEW MONTE ROSA HUT.—A hut, named Cabane Bétémps, after

its donor, has been erected on the Untere Plattje, at the foot of Monte Rosa. The hut is situated close to the right moraine of the Grenz glacier, and is easily visible from the ice. A good path leads to it over the moraine. It is a comfortable two-storied building, and will be useful for a variety of expeditions for which the Riffel was a somewhat remote starting-point. In 1895 it will be a small inn with a resident caretaker.

Piz MONDIN (3,163 m. = 10,375 ft.).—In the 'Alpine Journal,' vol. xvi. p. 521, an ascent of this peak by Mr. L. Friedmann and Dr. Christomannos on August 25, 1893, from the Engadine side is described as probably the first ascent since that of Coaz in 1849. The top was, however, reached on more than one occasion in August 1885, by various members of a reading party stationed at Hochfinsternünz. The route may be described as follows: 'Scramble down the cliff to Altfinsternünz, cross the Inn by the plank bridge at the tower, ascend the forest path to the highest hay-hut, and go straight up 5,000 ft. of the steepest grass slope till you come to the ridge, which will lead you to the top. The last 300 ft. is large débris and easy rock.' Mr. R. C. Gilson, having led one of these determined assaults, can vouch for the fact that no implements, except walking sticks, need be taken, and that the fatigue of the expedition, if taken at a suitably late hour in the day, will be found about equal to that of three ordinary grand courses on rock and ice. Whether the *earliest* of the treadmill walks of 1885 was in any sense a 'first ascent' he is unable to say; but as the plank bridge was carried away in 1893, and no one seemed to have any intention of replacing it, it appeared likely that the *latest* of them will prove a *last* ascent from Altfinsternünz. At least it would then have been necessary to go most of the way down to Stuben and back again to get across the river, and this additional fatigue would, it is confidently believed, increase the angle of the grass slope beyond the limit of what is practicable without the aid of machinery. The bridge was, however, rebuilt in 1894.

R. C. GILSON.

[It is worth noting that at least two parties between 1849 and 1885 are recorded to have reached the lower or W. peak, neither, however, climbing the tower to the N.E., which is the highest summit of the mountain. Studer, in 'Ueber Eis und Schnee,' iii. p. 128, mentions one of these attempts, which was made by Herr Theobald with some friends from Sampaun; the other was made by Herr Reber, one of the Federal engineers, August 8, 1884,* the lower summit being most convenient for his purposes.—*Editor A.J.*]

THE ALMAGELLHORN (3,332 m. = 10,932 ft.): FIRST ASCENT BY S.W. ARÊTE AND DESCENT BY W.—Tempted at Saas-Fee in August 1892 by the words 'No information' appended to this mountain in Conway's 'Eastern Pennine Guide,' I set off alone one day to reconnoitre it, with a view to help Mr. Coolidge, whom I had met in July at Binn, to fill up at least one blank in a new edition of the book. Reaching Almagell by the ordinary way from Fee in 40 min., I made for Furggstalden by the steep path which strikes off the main road to

* *S.A.C. Jahrbuch*, xx. p. 240.

the left just beyond Almagell church, and pushed on to the Furgg chalets, arriving there at 10.50. From these I fancied the ascent could be made if a N.E. course were held, and accordingly, as the weather was fine, and a good lunch was in my knapsack, I determined to try the ascent. Clambering up to the point marked 2,279 on the Swiss map, the way seemed tolerably clear and easy, and at 12.10 P.M. I reached the first depression, or small gap, above shelving rocks, on what was now a pretty well defined arête (the S.W.) running into the main W. arête of the mountain. A rocky couloir on the left seemed easier going than on the big boulders of the arête, so I made my way up it and lunched at its top, piling a few stones together as a landmark for my descent. Left at 12.35, and kept to the S.W. arête till a second gap was reached at 1.12 P.M., and a third 10 min. later. I gained the shoulder (shale) of the W. arête at 1.30, and following a N.W. course for 20 min. surmounted the final ridge, which led me to the summit in 7 min. more. Time from Saas-Fee, including halts, 4 hrs. 40 min. To my disappointment I found a cairn, and a bottle with two notices, of which I took copies. (1) 'R. C. Gilson, with Pierre Maître, of Evolena, August 10, 1891. Ascent by arête immediately to the E. of the Weissthal Glacier to the point marked 3,311 m. Thence along the arête hither. So far as is known a first ascent, though probably chamois hunters have traversed the mountain before. Time : 8 hrs. from Fee, including stoppages.' Mr. Gilson had evidently taken the route from the Almagell Alp.* The second notice was as follows :— '1. August 1892. M. L. Courvoisier, Stud. Phil., Aug. Hagenbach, Stud. Phil., und Dr. E. Hagenbach, S.A.C., bestiegen ohne Führer die Spitze über den W. Kamm vom Almagell Alp aus von Saas Grund kommend. Wetter schön warm. Aussicht leidlich, gegen Italien ganz hell. Abstieg direct ins Furggenthal. Alle drei aus Basel.' † This ascent was made only two days before, but their route, as well as Mr. Gilson's, was different from mine. The S.W. arête is easy rock-climbing. After reading the latter notice I made up my mind, rather hastily, to descend by the W. arête, and left the summit at 2.45. This descent is not to be recommended for a solitary climber. However, I persevered in it till within 80 yds. of the point marked 2,814, and then descended some very steep and smooth rocks in the direction of the Almagell huts. In turning over on my face in a smooth gully my axe slipped over my wrist, and it careered wildly down out of sight. I had some difficulty in reaching the débris at the foot of the rocks, and spent three-quarters of an hour searching for my axe in the neighbourhood, but had to content myself with leaving information about it, and the promise of a reward, at the huts. I reached Saas-Fee at 7.10 P.M. My axe came home three days afterwards, and the reward was gladly paid.

COLIN CAMPBELL.

PETITE DENT DE VEISIVI: NEW DESCENT ACROSS E. FACE TO COL DE ZARMINÉ.—On August 15, 1893, with Jean Vuignier, of Evolena, I

See *Alpine Journal*, vol. xvi. p. 174. This party descended partly by the N.W. arête.

† See *S.A.C. Jahrbuch*, xxviii. p. 462.

ascended this mountain from Arolla, following the W. arête to the top, as described in the 'Central Pennine Alps.' I proposed to Jean to attempt in our descent to traverse the ridge all the way to the Col de Zarmine, and we set off at 1 o'clock. All went well for about 25 min., till we reached a gendarme which blocked our path on the narrow but safe ridge. The only possible side on which it could be negotiated was the east, and accordingly we dropped down a few yards on that side, but found that we must continue to work our way across it rather than attempt to regain the ridge. This we did with some difficulty for about a quarter of an hour, on good rocks for the most part, until we were stopped by a steep gully, which we had to descend for a few minutes, one at a time, before we could find rocks on the other side sufficiently rough to hold by. We now moved slowly across the face in the direction of the col, gradually approaching the ridge, and after three-quarters of an hour's interesting climbing reached the col at 2.35 P.M.

COLIN CAMPBELL.

SCRAMBLES IN THE BADUS GROUP. DESCENT OF SIX MADUN, OR BADUS, BY PIZ TEGLIOLA.—On July 8, 1893, I left the Oberalpsee hotel (comfortable little place, excellent food, including splendid trout; Madame Christen very civil and attentive) at 4.15 A.M. for the ascent of the Badus by the Tgietlems huts and the Toma See. The col between Piz Toma and the Badus (2,931 m.) was reached, including halts, at 7.50, where Franz, my porter, and I breakfasted. The summit was gained at 8.45. The view is very fine, but I could not convince myself that I saw Coire, 45 miles off, as Father Placidus hath it. On the summit I read again the passage in the 'Adula Alps' ('Climbers' Guides'), on p. 15, regarding a route up the mountain from the S. which that worthy affirms to be the easiest of all, and wondered if it could not be discovered by descending it. Franz knew nothing of it; so off we went along the S. arête, which we found quite easy, and in half an hour reached Piz Tegliola (2,711 m.), where we rested for 10 min. Still following the arête, which now became steeper, but still easy, we came in 20 min. to some precipitous rocks leading direct to the Lohlen Pass. These we avoided, bearing to the left across steep grassy slopes, and reached the E. side of the pass, half-way between points 2,388 and 2,234, in 50 min. from the summit of Piz Tegliola. The ascent of Badus could thus be most easily made from the S. side, either from this spot, or from the L. de Siarra, by following the stream above it until the arête leading to the summit of Badus is gained. The remark of Father Placidus and Theobald is thus apparently confirmed. Our route homewards lay past L. Maigels and L. de Siarra and the Tgietlems huts. The hotel was reached at 3 o'clock.

PIZ TOMA (2,788 m.) was easily secured on July 10. I left the hut at the west end of the Toma See at 3.35 P.M., and mounted towards the col between Badus and Piz Toma for 30 min.; then bore to the right for 10 min. more, traversing the S. face of the mountain across earth, stones, and finally a snow-slope, until the highest gap on the S. arête was gained. From this point the summit was reached in 5 min.—in all 45 min. from the hut—a quick time, because of an approaching thunder storm. I found neither cairn nor bottle on the top. The climb could have

been done from the col by keeping to the S. arête all the way, but it is unnecessary to mount so far to the south. I descended in 12 min. by the steep rocky north arête, and over stones and earth into a snow couloir lying between Piz Toma and Piz Prielet, and held on towards the right across shingle and earth, so as to avoid a steep rock face over which water falls. The course is then along either bank of the stream flowing from Alp Toma into the lake. The hut was regained in 42 min. from the top.

PLAUNCAULTA AND PIZ PRIELET were climbed on July 13. From Piz Nurschallas, the most northerly summit of the Six Madun ridge, I had observed, on July 7, that, with the possible exception of the gap between Piz Prielet and Piz Toma, the whole distance from Piz Nurschallas to the last-named peak could be traversed by keeping to the arête; but I wished to reach Plauncaulta from the Toma Lake, as the 'Adula Alps' gave me some hope of doing. Accordingly from the Tgietlems huts I made for the rocky barrier above the Toma Lake, where a wooden 'profile,' or surveyor's cross, stands, from which I counted my time. This point was left at 3 P.M. I struck up W. along this ridge to 2,740 on S. map in 20 min., and in a hurried scramble point 2,832 (where there is a stone-man) was reached in 10 min. more. The flat top from 2,832 to 2,839 of Plauncaulta was taken at a run (say, 7 min.), and the sharp ridge was followed more cautiously all the way to Piz Prielet (2,770 m.), which was gained at 4.10 P.M. The arête needs care, for though the rocks are good they are thin, and the precipices on either hand, especially on the W., fall away very abruptly. The summit consists of a splintered rock tooth. No traces of former travellers were found. Before the fog which eventually enveloped us came on I saw down into the couloir between Piz Prielet and Piz Toma, where we had been three days before; and, as the descent looked too steep for hasty and safe negotiation, we concluded to retrace our steps. As it was we lost ourselves in the fog, after leaving point 2,740, for about $\frac{3}{4}$ hr. before we caught a glimpse of the Bündner Hütte, as Franz called the Tgietlems huts.

It will be noticed that, with the exception of the Badus, these little climbs were done in the afternoon. It was really the only occasional fine time in execrable weather, which at last compelled me, much to my regret, to leave the Oberalp district, with Piz Ner and Piz Portgèra unexplored.

COLIN CAMPBELL.

GRAND TAVÉ (3,154 m. = 10,348 ft.).—From the Panossière hut (the new hut is within a few yards of the old one), on July 20, 1894, Mr. H. A. Cohen and myself went N. along the moraine of the Corbassière glacier for a little way, then turned N.E. and reached the ridge of the Grand Tavé over débris slopes (leaving the Col des Otanes to the left) in 1 hr. 5 min. From there snow and rock led to the top in 10 min. On the descent we went due S. and reached a snow peak on the ridge due E. of the point marked 2,713 m. in 50 min. From there we went down a shale couloir in 55 min. to the hut.

This peak seems to be visited pretty often; it is certainly a splendid point of view.

E. F. M. BENECKE.

AIGUILLE VERTE BY THE MOINE RIDGE.—Messrs. G. Hastings and

A. F. Mummery and Dr. J. Norman Collie on August 11 last effected the ascent of this peak by the late Rev. C. Hudson's 1865 route ('Kurz,' p. 42). They left the Pierre à Béranger at 3.15 A.M., and, having crossed the Glacier de Talèfre, ascended the stone slopes on its right bank till a fairly unbroken shelf of glacier lying just below the Moine ridge was reached. This shelf was traversed till a point almost immediately beneath the peak, known as the 'Sugar Loaf,' was reached. The bergschrund being easily crossed, a rib of rock dividing two well-marked couloirs gave easy access to the main ridge at 8.20 A.M. The ridge, at first easy, became steadily more difficult, and afforded some pleasant climbing as the top was neared. At 1.30 P.M. a short snow arête was reached, which led in 20 min. to the summit. Owing to bad weather a very short halt was made. The rib leading down to the glacier was reached at 5.10 P.M., the Béranger hut at 7.40 P.M., and the Montenvers at 10.40 P.M.

There is no danger from falling stones on this route, and it would appear to be the safest and best way to the summit.

Owing to the prevalence of fog, and a marked tendency in the party to sit down and wait till the fog should clear, the time taken in the ascent was much greater than will usually be found necessary. The time taken in the descent—which was effected in a snowstorm—is a better guide in this particular.

NEW CLUB HUTS IN THE WESTERN DOLOMITES.—Last summer two new huts were opened in this part of the Dolomites—on August 16 the Bamberg hut (built by the Bamberg section of the German and Austrian Alpine Club) in the Sella group, and on September 9 the Langkofel hut, built by the Vienna University section of the same Club.

L. NORMAN-NERUDA.

ALPINE EXHIBITION AT LEEDS.—On Tuesday, January 15, the 'Yorkshire Ramblers' held, in Leeds, an exhibition of articles of equipment suitable for mountaineers, travellers, and tourists, which was a great success. Some 200 different articles were shown.

THE GRAND CORNIER FROM THE N., AND THE FIRST ASCENT OF MONTE ROSA.—The Rev. F. T. Wethered writes, 'I am anxious to correct some statements of my own in past numbers of the "Alpine Journal." First,* it was not Mr. O. Bornand who made the first ascent of the Grand Cornier from the N., but Mr. T. Bornand (in 1873); and, when I and my guides ascended this mountain (in 1878) from the N., we were driven over to the *western* face, not to the "southern face." from the arête. Second,† the first ascent of the Allerhöchste Spitze of Monte Rosa was not on August 1, 1855, but on July 31, 1855.'

THE CRÊTE DE MILLON.—I observe that on p. 257 of the November 'Alpine Journal' the ascent of the S.W. arête of the Crête de Millon by Mr. O. K. Williamson last summer is entered as a 'New Expedition.' May I say that (as is recorded in the travellers' book at the Hôtel Durand at Zinal) there has been a previous descent by this arête? On August 23, 1887, Mr. W. J. Kippen and myself, with P. J. Truffer,

* See *Alpine Journal*, vol. ix. p. 106.

† See *ibid.* vol. xvi. p. 47.

of St. Niklaus, started hurriedly at 6.55 A.M. from Zinal for the Diablons by way of the Col de Tracuit. We floundered through deep fresh snow to the col, and, being without a map, went up the Crête de Millon, which Truffer asserted to be the Diablons: 'he had always been so told when on the Weisshorn.' To humour his obstinacy we descended by the S.W. arête, according to the directions for the Diablons in the 'Zermatt Pocket Book,' p. 132, took 3 hrs. on the gendarmes (the face being very snowy and nasty), and reached the hôtel in the dark. Owing to these discreditable circumstances our descent is, as I found on a visit to Zinal in August 1894, notorious among the local guides, and I was much surprised to hear from Elie Peter that until this year the arête had been left severely alone, for it affords capital climbing immediately after bad weather. The rocks between the Garde de Bordon and the Pigne de l'Allée—the next best refuge I know for the snowed up mountaineer at Zinal—are very inferior; one of them (I think that marked 3,176 m. on the Swiss map) was christened by another Truffer (J. J., of Randa), on what may or may not have been its first ascent on August 8, 1891, by the very significant name 'Dies-Ding-Da.'

C. CANNAN.

Mr. O. K. Williamson writes, 'Owing to a mistake on my part, my ascent of the Tête de Millon on August 21, 1894, was given by me as a "new" expedition. The mountain had been traversed at least once before by precisely the same route; consequently the expedition was in no respects a new one.'

COMBIN DE ZESSETTA.—By an oversight of mine the height of this peak was given on p. 254 of the last number of the 'Alpine Journal' as 4,078 m. The error is of importance in so far as it suggests that the summit of the Combin de Zessetta is situated at the point where the figures 4,078 appear on the Siegfried map. This is not the case. The Combin de Zessetta lies at the corner where the ridge of the Combin, after running due E., suddenly turns to go almost due N.; it is immediately S.E. of the figures 4,080 on the map. The actual summit is the pretty little snow pyramid, rather like a miniature Silberhorn, which is so conspicuous to the left of the main mass of the Combin whenever that mountain is seen from the N.E., e.g. from the top of the Bietschhorn. It has neither name nor number on the map, but its true height is about 4,120 m.

SPALIHORN (2,452 m. = 8,045 ft.).—This curious little peak (which can be well seen from the valley a few steps below the hotel at Kied) consists of two almost equal parts, divided from one another by an enormous cleft, running roughly N. and S., whence the name. The two parts are rather like two bricks set up on end, as each has a flat top and four sides at right angles to one another. These sides are nearly everywhere sheer, and in places overhanging. On July 31 of last year I went up from Kied, viâ the Weritz Alp, to the N. end of the above-mentioned cleft in 2½ hrs. From there (the only point where the rocks are at all broken) to the top of the W. half of the peak was a sharp and interesting 10 minutes' scramble. An excursion in the opposite direction, along the ridge to the N.W., led over a couple of rock towers to the top of the Stühlihorn (2,709 m. = 8,788 ft.) in

1½ hr. Both these little peaks, the very existence of which is unknown to the majority of people who come to the Lötschthal, are well worth a visit in wet weather.*

TATLISHORN (2,505 m. = 8,219 ft.). On August 7, 1894, Mr. H. A. Cohen and I followed the Gemmi path to a point about midway between the 'Stock' and Spitalmatt (1 hr. 25 min. from the Hôtel Gemmi, at Kandersteg), and then turned E., crossed the Schwarzbach, and ascended grass slopes (steep in places) and débris to the top of this peak (which is crowned by a large stone-man), in 1 hr. 10 min. As the ascent is absolutely simple, and the route to be followed obvious, people who are crossing the Gemmi and have a couple of hours to spare might do worse than walk up the Tatlishorn, for the view down the practically sheer precipices of the E. face of the mountain is a surprisingly fine one. E. F. M. BENECKE.

THE TÖDI.—It may be well to put on record certain facts as to this splendid peak which have come to my knowledge since my Tödi Guide Book was published last summer. I have come across a very early version of Prof. Ulrich's account of his 1853 ascent of the Glarner Tödi. This was set before the members of the Zürich Natural History Society in the shape of a lecture, delivered on December 19, 1853, and was printed in their organ ('Mittheilungen d. Naturforschenden Gesellschaft in Zürich'), vol. iii. (1854), pp. 253-279. It is the first draft of the long article later published (1859) in the first series of 'Berg- u. Gletscherfahrten.' A very clear and accurate map by Herr G. Studer (one of the 1853 party) accompanies the paper, and is of considerable historical value.

Mr. Douglas Freshfield informs me that, after consulting the photographs taken last summer by Mr. W. M. Conway, he is convinced that the couloir leading up to his *Ruseinlücke* is that immediately N. of Piz Mellen, or the more southerly of the two descending to the Rusein Glacier. The other (or more probably the slopes N. of it) leads, therefore, to Herr Hauser's *Ruseinpforte*.

W. A. B. COOLIDGE.

MISS EDGEWORTH ON THE ALPS.—The correspondence of Miss Edgeworth, lately issued under the superintendence of Mr. Augustus Hare, includes an account of a visit to Chamonix, and a tour through the Bernese Oberland, in 1820. The authoress enjoyed her 'glaciers and cascades,' particularly the Giessbach, 'the most beautiful I ever beheld and beyond all of which poetry or painting had given me any idea.' 'The first moment when I saw Mont Blanc will remain an era in my life—a new idea, a new feeling, standing alone in my mind.'

M. Pictet, the Genevese librarian, arranged an excursion to Chamonix for the authoress. The inns on the Chamonix road she found 'much better than those on the road from Paris.' The guides, especially

* A full account of the Kl. Spalihorn and its first ascent by tourists on August 4, 1882 (M.M. C. and P. Montandon), is given in the *S.A.C. Jahrbuch*, xviii. pp. 14, 449. Cf. *S.A.C. Jahrbuch*, xiv. pp. 279 sqq.

Pierre Balmat* and his son, were 'some of the best informed and most agreeable men I have ever conversed with.' At the *table d'hôte* at the hotel at Chamonix thirty guests sat down. At the Baths of St. Gervais there were about fifty. An amusing sketch is given of the company. The source of the Arveyron and the Flégère were the limits of Miss Edgeworth's excursions, and the interest she shows in scenery, if genuine, is somewhat superficial. Oddities in humanity attracted her attention more readily than moraines and crevasses. The most interesting passage, perhaps, with regard to Alpine history in her letters is the following, which conveys the immediate impressions of a survivor of the famous accident to Dr. Hamel's party on Mont Blanc:—

'September 6.—Mrs. Marcet has just told us that at a breakfast given by M. Prévost to M. Arago and many scientific and literary people, a few days after the accident, parties ran high on this as on all affairs. Some said it was all M. Hamel's fault; some said that it was all the guides' own fault. One said he wished one of the English gentlemen who was of the party was present, for then they should know the truth. At this moment the servant announced a stranger; "Monsieur Rumford" the name sounded like as the man pronounced it, and they thought it was Count Rumford come to life. M. Prévost went out and returned with Mr. Dornford, one of the Englishmen who had been of Dr. Hamel's party, who came, he said, to beg permission to state the plain facts, as he knew they had been told to Dr. Hamel's disadvantage. He, Dr. Hamel, Mr. Henderson, and M. Lelleque, a French naturalist, set out; the guides had not dissuaded them from going up Mont Blanc—only advised them to wait until a threatening cloud had passed. When it was gone they all set out in high spirits, the guides cutting holes in the snow for their feet. This, it is supposed, loosened the snow newly fallen, and a quantity poured down over their heads. Mr. Dornford pushed on before the guides; he shook off the snow as it fell, and felt no apprehension. On the contrary, he laughed as he pawed it away, and was making his way on when he heard a cry from his companions, and looking back he saw some of them struggling in the snow. He helped to extricate them; saw a point moving in the snow, went to it, and pulled out Marie Coutay, one of the guides. He was quite purple, but recovered in the air. Looking round, two guides were missing; looked for them in vain, but saw a deep ravine covered with fresh snow, into which they must have fallen.'

Mr. Hare has failed to correct the following misspellings: 'Dornford' for 'Durnford,' 'Coutay' for 'Couttet,' and 'Lelleque' for 'Selligue.'

D. W. F.

TOURNIER L'OISEAU.—The Badminton volume on 'Mountaineering' is ornamented with a frontispiece representing a patriarch, described as 'Marie Tournier (dit l'Oiseau), the last survivor of De Saussure's

* Bourrit, *Cols des Alpes*, vol. i. p. 179, refers to this guide 'Pierre Balmat, qui fit ses premiers essais avec moi et qui a été pendant vingt années le guide de M. de Saussure, est un des plus instruits.' See also De Saussure's *Voyages*, *passim*.

guides.' The authority for this statement was a MS. note on a photograph taken in 1864 and presented to the Alpine Club by Lieutenant-Colonel Barrow, F.R.S., from which the plate is copied, which states that the individual in question was the 'last survivor of De Saussure's guides, who, with Cachat and two other guides, accompanied him on his sojourn on the Col du Géant,' and that he died at the age of 96 in 1866. This description has been challenged, not without reason. De Saussure does not give the names of his Col du Géant guides; but he supplies a complete list of his companions on Mont Blanc, and the Christian names of the only Tourniers among them are given* as 'Jean Michel' and 'Alexis,' and no Marie Tournier is mentioned anywhere among the guides of the time. Nor is it likely that a youth of 18 would have been employed as one of his four guides on the Col du Géant by De Saussure.

Of the two Tourniers mentioned, Alexis made the second ascent of Mont Blanc (often forgotten), with J. Balmat and J. M. Cachat, on July 5, 1787. De Saussure's was the third ascent.

Jean Michel accompanied Exchaquet in his passage, the second on record, of the Col du Géant in 1787. The same guide crossed the Col du Géant two months later with Bourrit.† Bourrit calls his guide elsewhere Tournier l'Oiseau, and Jean Michel is, therefore, clearly identified on the best authority with the bearer of this nickname. Tournier l'Oiseau was one of Bourrit's ordinary guides, attempted Mont Blanc with him in 1787, and travelled with him elsewhere. He died before 1803.‡

Bourrit in his list of Chamonix guides, published in 1808, does not mention any Tournier;§ but in his 'Itinéraire de Genève,' &c., 1808 (p. 61), he mentions among the former guides 'Tournier l'Oiseau,' and among the existing guides 'Tournier, fils de l'Oiseau.'

Here seems the key to the puzzle. Marie Tournier was, probably, this 'fils de l'Oiseau.' He may well have served as guide or porter to Bourrit with his father. Bourrit's last visit to Chamonix was in 1812; he died in 1815, at the age of 81. Marie Tournier must in his youth have seen De Saussure frequently, and may possibly have been one of the five porters whom we learn, from a drawing found among De Saussure's papers and reproduced by his grandson, M. Henri de Saussure, were employed in addition to the four guides on the Col du Géant.¶ M. Loppé, who knew the old man, states, however, that he did not claim to have acted as guide to De Saussure, but that he did assert he had been employed by Bourrit. He also tells me that it is common at Chamonix for a nickname to be transmitted from father to son.

It is true that Pictet, in his 'Itinéraire des Vallées autour de Mont-Blanc,' 1808, states (p. xix) that 'Tournier Alexis, dit l'Oiseau,' was

* *Voyages*, vol. iv. p. 142.

† *Alpine Journal*, vol. ix. pp. 87-9.

‡ Bourrit's *Description des Cols des Alpes*, vol. i. p. 30.

§ *Ibid.*, pp. 203-4.

¶ *Mémoires de la Société de Physique et d'Histoire Naturelle de Genève*, vol. supplémentaire, 1890, No. 9.

then an active guide, and that Leschevin, in his 'Voyage à Genève,' &c., 1812, repeats (p. 344) that 'Alexis Tournier, dit l'Oiseau, guide de M. de Saussure,' was then alive. But we know on Bourrit's much better evidence that Jean Michel was the original 'Oiseau.' Alexis may have been alive at that date, but it seems more probable that these handbook writers may have made a double blunder and been really referring to 'l'Oiseau fils.' D. W. F.

MOUNT MLANJI.—A Renter's telegram, dated Blantyre, November 2, states, 'Mr. Sharpe and Captain Manning have succeeded in making an ascent of the highest peak of Mount Mlanji, which, so far as is known, is the highest mountain in British Central Africa. The altitude of the highest peak was ascertained to be 9,680 ft.'

REVIEWS AND NOTICES.

Den Norske Turist Forenings Aarbog for 1894.

THE well-earned reputation of this northern Alpine year-book has been well sustained by the publication of the current number. The editor introduces his numerous readers to many most delightful but almost unknown, hitherto well-nigh inaccessible, regions which the indefatigable Tourist Club are opening out, by the building of most comfortable Alpine huts and bridges and other laudable means. These huts are infinitely superior to the usual huts in the Alps, such as Chanrion and others, and are generally placed near some sæter where food may be obtained, or, better still, are in charge of a man and a girl or two, who provide most excellently for the wants of travellers.

Some of the illustrations in the 'Aarbog' are admirable, notably one of the foot of the Briksdalsbræ, one of the best ice pictures I have ever seen.

Herr Annæus Øyen, the geologist who accompanied the unfortunate Wellman Arctic expedition, and who was left alone on Danes Island, has contributed two capital mountaineering articles, in which he has most modestly described his expeditions. It is, however, much to be regretted that Herr Øyen has not added a paper on the passage over the Justedalsbræ from Fjærland to Oldendal, which he made last year in company with Peder and Johannes Mundal, which was one of the finest pieces of glacier exploration yet made in Norway, and took them about 26 hrs. to accomplish. The interest in this grand glacier region increases yearly, and is likely to be maintained. Natives are now becoming enthusiastic guides, and will in time be as efficient as they are enthusiastic. They no longer fear to enter upon the unknown, but are instead desirous of seeing what is on the other side. Herr Øyen's brilliant exploit of last year has already led others of his countrymen to emulate his deeds of daring.

The mountain warrior Herr Hall has enriched the 'Aarbog' with three most interesting papers on new ascents in the Eikisdal and amongst the Jotunfjelde, which, as usual, he has illustrated. Herr Hall has, very wisely, made much use of new tourist huts and im-

proved sæters, such as Slethavn and Turtegrö, which are admirable bases for a campaign, but some few years ago did not exist. He has also compiled a list of the various ascents in the Horungtinder, which, though not quite complete, is a valuable contribution.

Kaptein W. Morgenstjerne, the late secretary of the N.T.F., has given a most delightful paper on his tour of inspection to the various club huts and improved paths and other works, north, south, east, and west, a model tour for an 'eccentric mountaineer.' As Herr M. is a veritable Hercules, and never seems to require an off day, or a really comfortable night's rest, double the time which he occupied should be taken by any who desire to follow in his steps, and thus see a glimpse of nearly the whole of the finest scenery in Norway. His route is a most excellent one.

There is one English article which describes a walk from Hallingdal to Aurland.

The N.T.F. is doing an admirable work, and the president and committee, who are exceedingly energetic and are enthusiastic lovers of their grand north land, are to be heartily congratulated upon their success and upon their year-book.

WM. CECIL SLINGSBY.

Der Hochtourist in den Ostalpen. By L. Purtscheller and H. Hess. Two vols. (Meyer's 'Reisebücher.' Bibliographisches Institut: Leipzig and Vienna. 1894.)

The Tirol is now supplied with a Climbers' Guide as well as with a history of the exploration of its mountains. No more competent writers for a Climbers' Guide to the Eastern Alps could have been found than the authors of the volume before us. In the nature of things a first edition of such a work, however carefully compiled, can be nothing more than a sketch of a more perfect form. It is, therefore, proper to consider not so much the omissions in such a case as the plan of the work. We may say at once that the writers have been highly successful, have performed their task well, and have laid mountaineers under an abiding obligation to them. Bearing this always in mind, we may be permitted to point out a few matters of general moment as to which we disagree with them. The mountain area is divided conveniently and lucidly into groups, but within the groups lucidity of arrangement does not prevail. There is only one lucid arrangement for the peaks of a group, and that is the arrangement of nature, the geographical order. To separate peaks from passes, and to depart from the geographical order of either, is to sacrifice lucidity and send the reader to the index for every step of his route. But if constant references to an index are necessary the mountains might as well be treated in any order at all, the use of a definite succession and arrangement being to render reference to the index unnecessary. It is impossible to arrange a set of mountains in the order of their importance, difficulty, or charm, because all these qualities vary with the day and the season as well as with the mood or character of the climber. Any attempts towards a grouping of that sort should be reserved for lists in an appendix. To a less extent we differ from the authors as to their arrangement of routes up individual peaks. They

crowd them all together in a tight conglomeration, regarding more the points started from than the geographical arrangement of the actual lines of ascent on the mountain itself. A certain confusion is the result, though in most cases not a serious one; but, on the other hand, the volumes gain in concentration and brevity. A useful introduction prefixed to the first volume gives valuable hints as to equipment (in which the Germans are ahead of us), with references to the shops where special articles can be procured. The records of ascents seem fairly complete, though doubtless the mere publication of so many will lead to the discovery of more and the recognition of omissions. One ascent in the Stubai Thal mountains which came under our notice is not recorded. On September 2, 1891, Herr Franz Brugger went in one day from the Windachalp by the Gaiskaor, over the W. Pfaffenieder, and up the Zuckerhüt; thence in 1 hr. to the Wilder Pfaff, 1 hr. to the Sonklarspitze, and 2½ hrs. to the Wilder Freiger; descending by way of the Nürnberg hut to Neustift. The authors have done right to exclude detailed maps from these volumes. Climbers should both prepare their routes and travel with the best large-scale map of the district obtainable. It is none of a guide-book's business to provide a substitute for that. In conclusion we repeat that, whatever may be our individual preferences in matters of arrangement, the substance of these volumes is invaluable, and the issue of them will make climbing in the Tirol even more enjoyable than it was before.

Trautwein's Tirol. Ninth edition. 1894.

We have received a copy of a new edition of this valuable guide-book, which performs for the Tirol the functions performed for Switzerland by Tschüdi's Guide. The descriptions of mountain ascents are brief, but in all ordinary cases sufficient, whilst routes which have been but rarely followed are generally at least indicated. Climbers with this book and the 'Hochtourist' of Herren Purtscheller and Hess will carry with them all the information requisite alike for valley wanderings and high ascents. The maps are somewhat less excellent than the text, but in a future edition they will doubtless be brought to a level of elaboration comparable to that now so generally obtained in the Tirol in all matters conducive to the comfort and convenience of mountain wanderers.

Guide au Caucase. Par J. Mourier. (Paris: Maisonneuve. 1894.)

Regarded as an expanded encyclopædia article, M. Mourier's book—ography apart—appears to be compiled with considerable knowledge and care, and a great deal of interesting general information as to the country and its people, its history and its administration, may be found in it.

But regarded as a guide-book the volume is very deficient in practical details. The routes given are fairly numerous, but they are superficially treated. Archæologists may find special information with regard to the ancient churches, in which parts of the Caucasus are rich. But mountaineers will learn little or nothing. The routes up to

Suanetia are given in a summary way, but the chief glacier passes of the main chain are barely and not at all correctly indicated. The author has repeated once more the old fable about the absence of *névé*s and the consequent smallness of the Caucasian glaciers, which members of our Club have laboured so assiduously to correct. He illustrates the origin of the mischief by giving 'after Reclus' bits from the old five-verst survey as physical maps. This survey did not attempt to delineate with any approach to accuracy the snowy region; it represented the glaciers by some very vague and inadequate blue smears. On these official, but fictitious, indications M. Reclus based his description of the snows of the Caucasus; and where he led all the flock of minor text-book writers has followed. Until the Alpine Club popularises the results of its own exploration and the new survey by producing a map of the central chain these false notions will probably continue to prevail.

D. W. F.

Georgian Folk Tales. Translated by Marjory Wardrop.
(London: David Nutt. 1894.)

Miss Wardrop has done excellent service by this revelation of a mine hitherto but little worked. Even by those little interested in folk-lore—if such there be, notwithstanding the efforts of the Folk-Lore Society and its accomplished president—the stories will be found to have a charm all their own; for the translator has done her work admirably and shown much skill in preserving the spirit and naïveté of the tales. The ardent folk-lorist will find much of deeper interest. The Persian origin of the majority of the tales is, as would naturally be expected, easily recognised. Many of the stories seem scarcely to have been affected by their environment, and to have acquired much less local colour than might have been expected from their sojourn in a strange land. The legends familiar under such titles as 'Big Klaus and Little Klaus,' 'Maître Renard,' 'the Giant and the Dwarf' (of which two versions are given) reappear in their well-known guise. On the other hand the Georgian Cinderella differs considerably from the Western versions, and on this very account may prove of especial interest to the folk-lore evolutionist. The Mingrelian stories begin usually with a delightful preamble for a fairy tale—'There was, there was, and nothing there was, but nevertheless there was.' Our own 'Once upon a time' seems very tame in comparison. Here and there a few passages might with advantage have been suppressed in a book which would have delighted children. The Caucasus may gradually go the way of the Alps. Even already, in the accounts of recent travellers, we read with a half-regret that life and property are absolutely safe, and the mountaineer may wander where he will, more unconcernedly, perhaps, than on the Arolla glacier. The geographer, the physicist, and the mountaineer are apt, as they open up new country, to destroy some of the poetry. Let the traveller in the Caucasus bear in mind, if only on wet days (he will probably have some), that the myths and legends of the natives, whose primitiveness is fast disappearing, are worth preserving, and do his best to add to the store of which Miss Wardrop's book is so delightful an instalment.

C. T. D.

Guida della Provincia di Roma. By Enrico Abbate. 2 vols. (Rome: published by the Rome Section of the C.A.I. 1894.) Price 10 francs.

No Alpine Club more than the Italian deserves to be called 'father of guide-books.' Many of its sections have now issued admirable guides to various portions of the hill country of Italy, and every year sees an increase in the number. The present volumes are rather a new work than a new edition, and deserve the warmest possible recommendation to all visitors to Rome who have an eye for natural beauty as well as for art and the remains of antiquity. It is remarkable how few English people amongst the thousands who have wintered in Rome concern themselves with the hilly neighbourhood of the Eternal City beyond some half-dozen hackneyed excursions. With this book in his hands and a sack of provisions any one is in a position to strike freely forth into the country and seek alike pleasure and adventure.

The first volume is filled with general information of all sorts—scientific, topographical, and climatological. There are also hints about guides, but intending foreign travellers are advised to communicate with the secretary of the Roman section of the C.A.I. (Vicolo Valdino, No. 6), who promises them every help and advice. The second volume contains the routes and a multitude of admirably executed little maps, as well as three large ones embracing the whole province. As far as we have been able to test them the instructions given seem to be lucid and useful, and much interesting information of all sorts is incorporated with the merely topographical material.

Wanderbilder aus den Dolomiten. Von Theodor Wundt.

This large portfolio of views hardly fulfils the expectations its appearance raises, nor quite maintains its author's reputation. The photographs are large and the subjects often interesting, but the best points of view are not always chosen, nor do the limits of the picture always coincide with the best limits of the subject. The reproduction work is not the best, and the colouring which is added does not improve the effect. A coloured photograph is almost always an eye-sore. Far be it from us, however, to condemn what after all is a valuable publication produced by an enterprising and intelligent mountaineer. The view of the Cimone della Pala from the top of the Rosetta is a fine rock subject and topographically interesting. The most effective plate is that depicting 'Dawn beheld from the Travignolo Pass.' Unfortunately it recalls only too vividly Sella's marvellous panorama from Elbruz, which it does not equal in quality, unless, indeed, the colours printed over it are more of a mask than we imagine. The text preceding the plates contains a number of smaller views inset in it, but they also suffer at the hands of the block-maker and are sometimes not very fortunate in subject or composition.

Himalaya Album. Twenty Photographs of the Indian Alps, taken by K. Boeck. (Baden-Baden. 1894.)

The idea of this portfolio is better than the way in which it is carried out. The views are for the most part of relatively unim-

portant subjects, or of important mountains taken from unsuitable points of view. The photographs do not seem to have been good and the process work is badly done. Most of the views are in Sikkim or Kumaon. In many the hills are still under winter snow, which of course dwarfs all the great mountains. In very few cases are we told whence the photograph was taken. Kinchinjanga is represented from a most unimposing standpoint. The name does not mean 'Gardens of Five Gods,' as stated, but the 'Five Great Store-Houses of Snow.' Gaurisankar appears on the far horizon in another view, but the mountain has been so retouched that little of the original photographic impression is preserved. Nanda Devi, which looks an ugly crest, is only seen just above a near and uninteresting ridge. The finest views are one merely named 'Amongst the Sikkim Himalayas,' and a view of the Mongchapu Glacier, in Kumaon, with a sort of exaggerated Gross Glockner at its head. The region on the borders of Kumaon and Tibet depicted in plate 17 seems to be a promising one for mountaineering.

La Collina di Torino in rapporto alle Alpi, all' Appennino ed alla Pianura del Po. Memoria Geologica del Dott. F. Virgilio. (Torino: V. Bona. 1895.) 8vo. pp. 160. Thirteen woodcuts and a map.

The hilly district to the south-east and east of Turin is no place for climbers, but its connection with the Alps may entitle this book to a brief notice. The author discusses the various opinions which have been entertained about the geologic age, the history of the constituent materials, and the mode of formation of these hills. The strata are generally of marine origin, and of various ages, from the eocene upwards. There are important pebble beds, of more than one epoch, in some respects corresponding with the Swiss *Nagelfluh*. These were formed by torrents near their entry into the sea, which then occupied the plain of Piedmont. The materials came on one side from the Alps, on the other from the Apennines; in the latest deposits the two are mingled. Thus, like the Swiss conglomerates, they are memorials of an early stage in Alpine history.

Dr. Virgilio also discusses the physical history of the region. Into this want of space forbids us to enter; suffice it to say that he regards this hill district as another consequence of the long-continued series of earth movements which, acting with varying intensity in different geological periods, produced the Alps. The book contains much information on the tertiary and quaternary geology of a region closely connected with both the Alps and the Apennines.

Jahrbuch des Schweizer Alpenclub, 1893-4. Vol. xxix. (Bern.)

Dr. Dübi, the editor, complains in his preface that he has received very few articles relating to the special district (Albula), and expresses his fears that the new periodical, 'Alpina,' published by the S.A.C., will in future divert from the 'Jahrbuch' many of the minor articles and notes. Certainly the multiplication of Alpine papers is an advantage to no one and a burden to many.

In the section devoted to the special district Herr Imhof (the author

of the excellent 'Itinerarium' describing it) narrates his ascent of the Scalettahorn, Piz Grialetsch, and Piz Vadret in one day, besides other minor climbs in the Kühalphorn and Ducan ranges. Dr. W. Gröbli and Mr. V. A. Fynn, with Klucker, made, on May 21, 1893, the first ascents of Piz Forbisch (3,258 m.=10,689 ft.) and Piz Arblatsch (3,204 m.=10,512 ft.). These summits lie W. of Molins, on the Julier road, and had hitherto escaped attention. Herr E. Huber (the explorer of the Selkirks) describes new routes on Piz Julier and Piz Platta, while Dr. Stokar contributes a supplementary article on the old Club district, the Rhätikon, telling us, among other climbs, of a new and direct route up the Sulzfluh.

In the General Section Herr P. Montandon gives an account of a fortnight spent in Corsica with his wife, in the course of which its highest point, the Monte Cinto (2,710 m.=8,891 ft.), was ascended, and Herr Emmenegger narrates an excursion to the Val de Lys. Herr Frick-Lochmann spent ten days in the Tirol, chiefly in the Oetzthal. He was struck by the fact that in the case of the more frequently visited peaks there is now a Club hut not more than 1,000 mètres below the summit, while the climbs are thus made so short that it is generally possible the same afternoon to go on to the hut for the next day's ascent. He finds fault with the excessive 'Wegmarkierung,' so common in the Tirol, and also the fashion of 'Salontirolerie,' or adoption by climbers of the costume of a Tirolese hunter. Herr von Rydzewsky, with Klucker and Barbaria, continued his explorations in the Bergell mountains, making the first ascents of the Zwillinge (3,259 m.=10,692 ft.), of Piz Rasica (3,307 m.=10,850 ft.)—which he considers as difficult as the Fünffingerspitze—and of the Cima di Vazeda (3,308 m.=10,853 ft.). Herr C. Montandon has vanquished several virgin peaks at the head of the little-known Urbachthal, Gr. Diamantstock (3,151 m.=10,338 ft.), and the Hubelhorn (3,256 m.=10,683 ft.). M. Julien Gallet has discovered quite a number of new peaks in the ranges south of the Bietschhorn, and has done good work in exploring these neglected valleys. Herr R. H. Zeller made a geological tour from Upper Valais to the Lago Maggiore. At Cimalmotto, a frontier village in Val di Campo (the west branch of Val Maggia), he found many smugglers and *douaniers*. The head of the glen is in Italy, and six Italian *douaniers* are there stationed to watch for smugglers. As they are separated from Italy by a mountain range, they are allowed to get their provisions at Cimalmotto, and in the inn there they often see packages of sugar, coffee, and tobacco ready to cross the frontier, though they cannot stop them. Each smuggler carries up to a hundredweight at a time, and reckons on earning twenty-five francs a trip. A *douanier*, on seeing a smuggler, must call out 'Halt' thrice before he is allowed to fire. M. Jeanneret-Perret describes a number of climbs from the new and admirably placed Saleinaz Club hut, built in 1894 by the Neuchâtel section, on the right bank of the Saleinaz Glacier. It is well furnished, having even a library, and water-colour sketches on the walls. Dr. Walder contributes a long notice of Professor Melchior Ulrich, one of the last survivors of the early climbers. He died in 1893, at the age of ninety-

one. His writings (especially in 'Berg- und Gletscherfahrten') have been read with interest by many in foreign lands, and have served as the inducement to some members of our own Club to pay their first visit to Switzerland. Herr A. Ludwig investigates the character of the peasants' dwellings, stables, &c., in the Prätigau, while Professor Forel publishes his fourteenth annual report on glaciers. The summer of 1893 was remarkable for heat and drought, so that in some cases the advance of certain glaciers was checked, a few even commencing to retreat.

Among the shorter articles the following are the more noteworthy. The editor gives his useful annual list (gathered from all sources) of 'new expeditions' made in 1893 in the Swiss Alps. Dr. Dübi also narrates his own exciting experiences, with a local guide, in the Kaves-trau peaks above Brigels, succeeding in his climbs, but being obliged for the first time during an Alpine career of twenty-eight years to bivouac in a high (3,100 m. = 10,171 ft.) and exposed situation in consequence of the arrival of darkness. Herr E. Huber, ever active, made two new routes on the Pizzo Columbe, a fine little Dolomite peak not far from the Lukmanier Pass, found a new route up the Vrenelis-gärtli, and made another down Piz Terri. Herr Hösly explored the Pizzas d'Annarosa, in the Splügen district, but could not find a way up. It was only in 1894 that he and two other parties conquered this grand-looking peak. Herr Staufer made a very unattractive and difficult traverse from the Roththal Club hut to Trachsellaunen, across the Roththal glacier. Herr Kummer-Krayer, describing an ascent of the rarely touched Kl. Scheerhorn in June 1893, expresses a decided opinion that Club huts ought never to be shut, even during the winter. Dr. W. Gröbli sends a note allowing that, in the face of the evidence laid before him, he has now no doubt that the first ascent of the Inner Stellihorn (3,415 m.), near St. Niklaus, was made by Messrs. Conway (not Gardiner, as printed) and Coolidge in 1890, M. Stafford Anderson in 1882 having only ascended the Ausser Stellihorn (3,404 m.). A few minor articles must be left unnoticed for reasons of space.

From the report made to the Swiss Alpine Club we learn that the Club huts are in good condition. The Dollfus hut has now become the property of the Club—not without the use of threats of leaving the district—and has now been considerably enlarged. The Saleinaz, Bétemps, and Kesch huts are quite new, while those of Panossière and Orny have been rebuilt. At the end of 1893 the Club numbered 4,052 members.

Annexed to this stately volume are panoramas from Mont Blanc (by Herr Imfeld, but only in outline as yet), the Ruchen-Glärnisch, the Chas-geron, and the Arosa Rothhorn. In the preface the editor explains that reasons of economy have forced him to give fewer illustrations in the text than he wished, but some of those given are so good that they make up for the diminished number.

J. S.

CORRESPONDENCE.

'DOLOMITE STRONGHOLDS.'

To the Editor of the ALPINE JOURNAL.

SIR,—I write in reference to a review of 'Dolomite Strongholds' in your last number—not that I have any wish or right to complain of its hostile opinions throughout, but merely because it seems necessary to correct an unintentional misrepresentation of the text of the book.

The very unpleasant reference to brother authors implied in the phrase '*those others* "whose descriptions of rock-climbing are notoriously unsatisfactory"' is not in the book; and it is an unfortunate error to include the word '*whose*' within the quotation marks, as the reviewer (or, I hope, the printer) has done, so that even my own friends have been misled by this misquotation into thinking that it was in the book, and could not account for my having written such a reflection; therefore I feel the necessity of correcting the mistake. And, while doing so, I may further clear the book of the somewhat vainglorious sentence ending with a *presumed quotation*, 'go and do likewise;' and of the one which speaks of the author's mountaineering experience being '*confined, we are told*, to the memory of youthful scrambles on the cliffs of Britain.' These are not accurate renderings. The discussion of the last 'untrodden peaks' is hardly to be decided by the addition of one name to the number; but the one mentioned by the reviewer, *i.e.* the Aiguille des Charmoz, was first climbed in 1881, and not '*since*' the first ascent of the Croda di Lago, as he has inadvertently stated, as a basis for some strong remarks.

Turning to the different estimates of the climbs themselves, I fear no two experiences are ever the same; but our differences might be settled on the spot. If we could only arrange a meeting, like that of the Walrus and the Carpenter, 'between the Zinnen,' we might satisfactorily come to blows. I mean each man might blow his own cloud and reciprocally puff the other's books and tobacco!

I remain, Sir, yours truly, J. SANGER DAVIES.

PROCEEDINGS OF THE ALPINE CLUB.

THE ANNUAL GENERAL MEETING was held at the Nineteenth Century Art Gallery, No. 9 Conduit Street, on Monday evening, December 17, at 8.30, Mr. Douglas W. Freshfield, *President*, in the chair. The following candidates were balloted for and elected members of the Club:—S.A.R. il Principe Luigi Amedeo di Savoia, Duca degli Abruzzi; and Messrs. G. F. Berney, J. J. Brigg, W. A. Brigg, C. A. V. Butler, J. W. Drummond, E. J. Garwood, H. J. Heard, T. Fisher Unwin, and F. O. Wethered..

On the motion of Mr. C. E. MATHEWS, seconded by Dr. SAVAGE, the *President*, Mr. Douglas W. Freshfield, was unanimously re-elected.

On the motion of Mr. F. C. GROVE, seconded by Mr. A. J. BUTLER, the Vice-Presidents, Messrs. W. M. Conway and H. Pasteur, the Honorary Secretary, Mr. J. H. Wicks, and the other members of the Committee who were eligible—viz. Messrs. Alfred Williams, J. A.

Luttman-Johnson, H. Woolley, Dr. W. A. Wills, H. Cockburn, and G. P. Baker—were all unanimously re-elected.

On the motion of Mr. DENT, seconded by Mr. SLINGSBY, Mr. A. F. Mummary and Mr. J. Heelis were both unanimously elected new members of the Committee in place of Messrs. G. Chater and G. H. Morse, who retired by rotation.

The PRESIDENT said, 'It has been the custom at this Meeting to notice any conspicuous gaps made by death among our members during the past twelve months. This year, happily, none has arisen from other than natural causes; but we have lost several mountaineers whose names have been conspicuous in the early annals of the Club. Mr. T. S. Kennedy (elected 1860) was one of the most brilliant climbers of his generation. His name is recorded in the 'Alpine Journal' in connection with the first ascent of the Dent Blanche and the second ascent of the Aiguille Verte. In after years he went to India, but was prevented by fever from doing much in the Himalaya. He was, as his friends knew, a man of the most various tastes, accomplishments, and activities. Mr. W. E. Hall (elected 1861) was Honorary Secretary of the Club in 1867 and 1868.* He was always a frequent attendant at our Meetings. On the Monday before his sudden death I met him and arranged with him as to the drawings he should contribute to our Exhibition; for he was an accomplished amateur, and had sketched in many parts of the world. His name will be found in the Journal in connection with the first ascent of the Dent d'Hérens, and with regions so widely separated as Lapland and the Straits of Magellan. Mr. Percy Thomas, lately an active member of our Committee, was also a traveller as well as a mountaineer. The sympathetic obituary notice which appeared in the last number of the Journal renders it needless for me to do more than express the regret his late colleagues, in common with all his friends, feel for his premature loss.

'During the past twelve months the Committee have had various matters under their consideration, to which to-night I can only briefly allude. Mr. Clinton Dent, who has interested himself in the establishment of a system of signalling on the mountains, was good enough to go to Munich to the great Meeting of the German Club, and read an address on the subject. I believe there is every prospect of such a system being generally agreed on by the Foreign Clubs and brought into operation. The Committee have had very cordial replies from the Colonial and Indian Governments to their circular on glacier observations. Captain Marshall-Hall, who first suggested the idea, informs me that a committee with similar objects has been formed on the Continent under the auspices of Professor Forel, who has done such good work in the Alps. It is to be hoped that the two committees may, without clashing, be able to supplement and complete each other's work. The revision of the "Alpine Guide," a task left to the present officers by their predecessors, has progressed steadily during the year. The work is one of no ordinary labour and dif-

* An obituary notice of Mr. W. E. Hall will appear in the next number of the Journal.

ficulty, and calls for much, and in some ways ungrateful, labour from all concerned. The heaviest burden, of course, rests on the Editor, who is responsible for welding the material supplied to him by contributors unequally practised in this special branch of work into a tolerably equal and consecutive whole. Mr. Coolidge hopes to issue the first volume in the course of 1895: the maps for it are all well advanced in Messrs. Stanford's hands.

'At the Winter Dinner in 1898 members were asked not to introduce more than two guests. Despite, however, this request the diners overflowed the space available, and many members of the Club complained. In these circumstances it was obvious that the rule which ordains that "the members of the Club shall dine together once in every year," and also implies that they have the liberty to bring "guests" in the plural, had become unworkable. Before making any formal proposal for altering the rule the Committee resolved to suggest to members the expediency, except in special cases, of restricting their hospitality to one guest. The result of this appeal to the mutual consideration of our members has been satisfactory, for, while the suggestion has been very generally accepted, places have been filled up by members, so that this year, of the 283 who dine together no less than 156 are members of the Club.

'Another question which has of late years frequently engaged the attention of the Committee will again come forward next year. Does the Club desire to remain in its present rooms, holding many of its meetings elsewhere, or is a change desirable and, if so, where can suitable accommodation be found? The Hon. Secretary will welcome any suggestions or information bearing on these points.'

The Rev. W. S. GREEN read a paper entitled 'Climbing in the Selkirks and Adjacent Rocky Mountain Regions,' which was illustrated with lantern slides, and after a short discussion the proceedings terminated with a hearty vote of thanks to Mr. Green.

The WINTER DINNER was held at the Whitehall Rooms on Tuesday, December 18, the chair being taken by Mr. Douglas W. Freshfield, President of the Club. Two hundred and eighty-three members and guests were present, the latter including Earl Stanhope, Viscount Cobham, Sir Colin Scott Moncrieff, Sir William Dalby, Mr. Bret Harte, Dr. Bourcart (the Swiss Chargé d'Affaires), Mr. Onslow Ford, A.R.A., Dr. Lauder Brunton, Mr. E. Nettleship, Mr. Anstey Guthrie, and Mr. J. S. Forbes.

The ANNUAL EXHIBITION of Mountain Paintings and Photographs was held this year in the Nineteenth Century Art Gallery, and was open from December 11 to December 22. Two days (the 11th and 18th) were reserved as private view days for members and their friends. On five evenings lantern exhibitions were given by members of the Club, as follows:—December 12, Mr. Douglas W. Freshfield; 13, Mr. C. T. Dent; 14, Mr. W. M. Conway; 20, Mr. H. G. Willink; 21, Mr. C. T. Dent. For detailed notice see p. 335.

Errata in November Number.

- Page 237, line 11, for *Pelle's* read *Sella's*.
 " 264, last line but one, for *second* and *third* read *third* and *fourth*.
 " 265, line 13 from bottom, for 11,700 ft. read 12,700 ft.

THE ALPINE JOURNAL.

MAY 1895.

(No. 128.)

SOME ASCENTS IN THE ALPS.

BY THE LATE JOHN BALL.

[Lovers of Alpine literature are well aware, and have often deplored the fact, that Mr. Ball published very few detailed accounts of his many excursions among the Alps. They became generally known only through notes either communicated to friends or inserted in his 'Alpine Guide.' We are indebted to Mrs. Ball for permission to reproduce from her husband's diaries the following descriptions of some of his most noteworthy ascents. They are interesting in themselves, and will serve to complete the fragmentary accounts of these climbs hitherto given to the world. A few elucidations have been added, within square brackets.]

1. THE PELMO.

[This ascent took place on September 19, 1857, the start being made from Borca, a little below San Vito. See previously published notes in the 'Alpine Guide,' vol. iii. pp. 525-6, and Messrs. Gilbert and Churchill's 'The Dolomite Mountains,' pp. 399-400. A number of small pencil sketches on the leaves of the diary accompany these notes.]

UP at 2 A.M. (awoke and looked at watch at half-past 11 and half-past 1): called the woman of the house. Coffee and bread. Started in time to hear 3 A.M. on the bridge. About 4 saw a bright fire on the rocks of the Antelao high up, a hunter. Soon after Venus rose behind a rock so bright as to throw a decided shadow. Jupiter overhead. Dawn approached and grew as we reached the casera. At 5 we waited nearly $\frac{1}{2}$ hr., while I screwed in points to my boots in the hut, which had four men and two boys, 500 sheep, many goats, and a few pigs. Sun rose, and soon reached us, as we left the ridge forming the pass to Zoppé to ascend the outer buttress, covered with *Pinus mughus*, that springs against the rocks of the Pelmo.

Nothing could be less promising. (Sketch.) It looks about as promising as to ascend the Jungfrau from the side facing Wengern Alp. You take the rocks just under the great tower, which rises 5,000 ft. overhead, and after climbing some steep rocks with rubbed edges and shelves of débris you get on the ledge, which you are to follow for $1\frac{1}{2}$ hr. You soon come to a place which my guide expected was to turn me back. The ledge gives way, and there are a few broken pieces below by which you pass and regain it. He took off my tin box, plaid, and his stick, which I handed over on the point of my long stick, and he, one by one, put in place of safety. Three successive bays are passed; tolerable footing except here and there. In the third is the *pons asinorum*. The rock projects, leaving the shelf but $1\frac{1}{2}$ ft. high. (Sketch.) The guide, leaving traps, went forward to see how the land lay. After a few minutes he returned, saying that it was impossible to pass, that the 'croda' (a rock) had given way on the other side, which before had offered assistance. We examined the face of the bay below us, to see if it were possible to reach another more practicable ledge, but no go. Before giving it up I said I would look, and I found that I could pass, which I did, leaving one leg outside to catch the edges. The guide passed the traps in succession on to me, and followed, absolutely crawling on his face; it is too low for hands and knees, which serve in another place. Soon after you reach the 'vau,' where steep rounded rocks and débris (*ghiara*) come down and allow you to ascend. Here the real ascent begins—at first tolerably easy, but after some rocks with plants on the ledges you take to the débris, first to the right, then rather to the left, very long and fatiguing. Towards the top good water from the snow came in abundance; two previous sites where it was expected were mere trickles, with single drops, one on the ledge. It would be better to eat something at the casera, and again at the foot of the snow. Snow, rather steep and fatiguing, leads up to the last débris, and finally a small platform, looking on one side to the Antelao, on the other to Val di Zoldo, with many grand peaks. The guide told me that that was as far as we could go, and on my pointing to a ridge terminating in a rock 80 or 100 ft. higher, he said there was no use in going there, as the view was interrupted by a higher and inaccessible point. I said, 'Let us go there at all events.' The rock and another immediately behind were very shattered. I began to

examine them to see if I could not manage to ascend. The guide implored me to desist, saying it was *croda morta*, not *viva*, very unsafe, &c. I assured him I would run no risk, and began to remove all moveable pieces of rock, and then found the thing quite manageable, and proceeded, in spite of renewed intreaties from the guide. This was the very top ridge. With a little caution in passing from one jagged and rotten tooth to another—(sketch)—I gained the ridge—easy and safe, about 200 yards long. The highest point seemed about 100 ft. short of the point: it is 2 or 3 ft. from the northern edge, and the rocks are so little safe that I could get but an imperfect view down the 4,000 or 5,000 ft. With the map I determined the names and positions of most of the visible peaks. The snowy ranges of Tyrol well seen, Glockner, Gross Venediger, Stubayer Ferner, ? Fend Alps [Oetzthal Ferner]. Of those near, the Marmolata seems the highest, but a considerable group [Primiero Dolomites] near Agordo, to W., seem to have three or four points about 10,000 ft. The Antelao slightly higher, the Croda Malcora slightly lower, or as near as may be same height. On the snow at about 9,000 ft. I was surprised, on so steep a peak, to see leaves of larch, *Pinus mughus*, and even of beech, which must have been carried up 4,000 to 5,000 ft. Ptarmigan on the rocks towards Val di Zoldo seen both in going and coming. — said last week he had, in a day's shooting with a signore di Cadore, killed 19!! In places left by the snow I noticed strictly parallel lines, like plough ridges seen from a distance, about 8 in. apart, very regular, consisting, in fact, of lines of earth lying on the stony, fine, and partly set débris. The direction was downwards, but not always, in the lines in which water would flow freely. In one place a projecting rock, forming a small curved saddle, 20 to 15 ft. wide, had the lines carried on and not turned down the saddle. (Sketch.) The most striking point was the great uniformity. Top exactly at one. Left the foot of the snow, where we lunched, at 1 (*sic*), gained foot of last rocks at 4. Met Curé of Zoppé, with two companions, after a day's fruitless chamois-hunting on the ridge. He considers the ascent from Zoldo worse than that which we followed. Left casera at 5, and home at 6.15.

[Two large sketches and a list of plants found on the peak complete the narrative of the day's doings.]

2. ATTEMPT ON THE MARMOLATA DI ROCCA.

[This point is the E. and lower peak of the Marmolata, the highest of the Dolomites, the W. peak being the loftier. The latest heights are 3,226 m. and 3,299 m. respectively. The ascent to the foot of the last tooth was made by Mr. Ball, with Mr. John Birkbeck and Victor Tairraz, of Chamonix, on September 1, 1860; it is mentioned in Messrs. Gilbert and Churchill's 'The Dolomite Mountains,' pp. 141-2, and in the 'Alpine Guide,' iii. p. 478. Dr. v. Ruthner, in 1861, reached the same point as Mr. Ball's party; but it was not till Dr. Grohmann's ascent, in 1862, of the highest rock tooth * that the thermometer, &c., left by Mr. Ball at the foot of the tooth were found. A second English party ascended the E. peak in 1863,† but it was not till 1864 that Dr. Grohmann succeeded in gaining the W. and higher summit. On the page devoted to the record of barometrical observations Mr. Ball notes that he observed the instrument at the chalets at 4, on the summit at 11, and at Campitello at 10.30 that night, which affords a clue to the times occupied on the ascent.]

August 31.—Leave Vigo. Inn ('Corona') good; food good; people civil; bill, round numbers, not cheap, yet not unreasonable. Trap to Campitello, where found no meat; eggs, polenta, tolerable wine, bread and butter. Took provision of these last, and went in three hours to the chalets of Fedaja, with G. Battista, a 'veterinario,' who had offered himself as having been already up Marmolata. Apothecary in 'Romeo and Juliet.' Asked two florins for expedition. I promised him four if we reach top. Beautiful walk, and fine position of Fedaja, but mountains clouded. Some trouble to get milk. Sup in chalet of good-looking ultra-rustic wench, Marianna, with a clean and rather comfortable chalet: tea, bread, and butter. Sleep a party of six or seven in large hay shed. Better than usual, but fleas and wind (alas! west) keep me from sleeping more than one or two hours.

September 1.—Struck light at 10 min. to 3, and at 3 called Victor, who goes to see after fire and cooking rice. Rose soon after. Venus very bright, and moon, and some stars; but clouds and S.W. wind. Off before half-past 4. No sign of dawn. Ascend steep sheep-track. Get among *Mughus*. G. B. drops my rope, goes back, returns without it; sent again, and I collect flowers. Steep scramble up rock. G. B. sends down a large stone, which I caught with my hand; abuse him. On this side the

* [*Mitth. d. Oest. Alpen-Vereins*, 1863, pp. 210-2.]

† [*Alpine Journal*, vol. i. p. 201.]

Marmolata is set round with steep rocky teeth (detached forts), between each of which glacier, widening downwards, descends. I was in favour of the extreme left of the glacier, which comes down E. of the chalets. Instigated by our 'guide,' we took the right-hand branch, and Victor (unwisely) attacked it at the lowest part, pretty nearly in right line from chalets to higher part of the mountain, instead of ascending by the 'ghiara' and moraine to the point where the edge of the glacier is highest. Escarpment everywhere moderately steep, and ice so hard that steps must be cut. Unusually hard, it yielded little to the axe or to my heavy stick, and work proportionately hard. Unwillingly Victor bends to the left, and we get on easier, along the rock on a thin, sharp edge of hard ice. Soon after get to the névé; at first very good, soon after begins to grow deep and very steep, but no real difficulty. The only large crevasse had been filled by an avalanche, suggesting the need of care when returning, if the sun should work. Before reaching the rock scramble, we had a glorious view to eastward of Pelmo, to right, then Antelao, then Rocchetta, then Malcora; and a little after the sun broke over the jagged crest of the Rocchetta, quite enough to reward us for our day's work. As we reached névé, sun shone for a short time, and we had out veils and spectacles, but at the steeper ascent clouds came on, and remained nearly unbroken, with an occasional glimpse below over Livinallongo. We kept at work pretty steadily, as we rose to a level with what looks from below like a peak. (Diagram.) I urged V. to keep to the left, so as to gain the ridge, where the snow would not be quite so soft and steep. He wanted to keep straight up, and was rather vexed (he likes his own way), but yielded, as I think to our advantage. At last we reached a ridge, from which, in the cloud, we saw a tooth of rock to left, about 100 ft. higher, and on the other the snow inclining gently upwards. We follow this, and soon see the cloud rising a little. The true highest peak [is] a tooth rising about 150 ft. from the ridge of rock which just projects beyond the snow and forms the upper rim of the tremendous precipice which the Marmolata shows to the S. This is the tooth—*ultima croda*—which has hitherto defied all those who have reached the highest ridge.* As we saw it, a sharp arête of snow, steep

* [Dr. Grohmann, on p. 202 of his article already mentioned, speaks of two Italian attempts in 1804 and 1856, probably those to which Mr. Ball here refers. At any rate, no other attempts are known

on both sides, led up to the rock, sparing the ascent of the stiffest part, and we had not the slightest doubt as to the possibility of ascending it; but meanwhile the wind, which we had not felt till we were on the highest ridge, became extremely violent in sudden gusts. We were on the arête—V., B., and myself—when B. suddenly stopped short. I could not but agree that with such a wind the ascent of the tooth was unsafe, and even Victor did not like to stay on the arête. We turned and slid down to the little concave plateau, on one side of which, against the rock, was a small pool, and here, slightly sheltered from the wind, we had an excellent lunch. B. very miserable, shivering from the cold, and altogether unhappy. The lunch over, I set to work, with Victor's assistance, to fix the minimum thermometer to the rock behind us. He attached a slip of pine wood, which I had prepared, with a couple of strong nails, to which I added a third, and, behind the board, attached the thermometer with string! not having wire; the wind meanwhile so piercing that, though the temperature was $5\cdot6 = 42$ Fahrenheit, my fingers were quite benumbed.* I asked B. to fill up the form to be left in the glass tube. He swore bravely at the d—d thermometer, but filled up the paper *tant bien que mal*, which I attached. I fear the winter—or perhaps sooner—will see them all set loose from the rock: the best chance is that the snow will reach the place soon. Now to descend, after a ration of ice water and rum is served out. Neither B. nor I felt thirst all day. We kept to the track; the descent of the first part easy and rapid. Then we agreed to try the left—now right—hand glacier, but under the mistaken idea that we had seen all the way I recommended V. to keep down too far, instead of crossing by the middle part of that glacier between the large crevasses. We reached the top of a rock, and found our progress barred by crevasses on the right; below us the rock steep enough, but above rough and passable. V. was disposed to descend, but I decidedly objected, pointing out that the lower part of the rock would

to the author of the monograph on the Marmolata in the *Erschliessung der Ostalpen*, iii. p. 385. According to Dr. Grohmann, p. 203, Herr v. Ruthner did not reach the summit of the tooth, Dr. Grohmann's own party in 1862 being the first to conquer it.]

* [On the page containing these observations Mr. Ball notes that this reading was taken 'about 150 ft. below, and about E. of the highest peak (looking N.W.?).']

be smooth and dangerous. He agreed we must either reascend some way to take the eastern glacier, or try our hands again at the western. This we did, finding again our morning's track nearly effaced, and then crossing to left. I had (as in the ascent) to give help several times to G. B., and at last, at the last part, where it was really steep, gave him my stick, taking his unspiked one. Here the rain assailed us with some violence, choosing the time when we were unable to move on, waiting for the steps. Part of way pretty steep, but no difficulties. Plaid saves me pretty well from the rain. Reach chalet, sit a few minutes by fire, and then start, leaving B. to finish his cigar. In 2 hrs. 20 min. I reach Campitello, where I ordered dinner—not ready till long after B. joined us. Inn 'Al Mulino,' clean, landlord not very bright, ill-provided; but this day we had a good supper. Charges not cheap, yet not extortionate.

3. THE CIMA TOSA.

[This ascent was made on August 9, 1865, in the company of Mr. W. E. Forster, and the guide Matteo Nicolussi. Mr. Ball went by the Malga di Andalo and the Pozza Tramontana, and appears to have made a détour to the Forcolotta di Noghera, overlooking the Val d'Ambies. See 'Alpine Journal,' vol. ii. p. 148, vol. xii. p. 521, and 'Alpine Guide,' vol. ii. pp. 488-9.]

August 8.—By omnibus in 2 hrs. [from Trent] to Vezzano. Arrive 8. Start for Molveno by Monte Gazza; 4 hrs. good walking. We halted at casera. Waited in vain for view of the Tosa. Took wrong way, going much to right, and then trying to force way down slope broken by ledges. Reach Molveno about 3. Matteo Nicolosi fine strong youth of 25, good porter, but no mountaineering intelligence.

August 9.—Off at 3.10. Beautiful morning; moon bright. Took rather longer but easier way by large casera on but-tress above Molveno. Soon left regular track, keeping about a level, then mount by steep rock and along scree at foot of 'Felswand.' Accidentally hit casera just on our level. Breakfast. Here you should keep to right of a rock end of a night. (Small sketch.) Matteo took us to left, and after long ascent (not steep) got on ridge over glen to S. Lorenzo or Stenico. Had to return (losing $1\frac{1}{2}$ hr.), descend, and keep over by scree and limestone sham glacier, then second step of the same to Vedretta. The approach is through a deep hollow, and if you go the direct way you must descend into it. There are two glaciers: the

smaller one faces the gap (Tuckett's) leading to N.W. side of Bocca di Brenta; the larger one on E. side of highest point of Tosa. Saw a chimney. This is not practicable, unless the avalanche snow were heaped very high against it, but to the left and close to it is the narrower one which turned out to be feasible—decidedly a difficult bit of rock work. Matteo is clever on rocks; went up well. It was 2 P.M. Forster wished to go on, and we did so. Reached top about 4.15. I cut most of the way up the last slope, in all about 100 long steps. The top, a ridge falling for some distance N.W., a few paces only. On opposite side snow slope, extremely steep, towards Val Rendena. Saw but little; clouds. Stayed but 5 min. Descended *à reculons*. Forster very slow down the rocks. It was 6.15 when we got back to opposite side of glacier. Second lunch quick. Decided to return by the Bocca. Steep descent, and then easy ascent to the gap (not the near one); descended into the glen of the Bocca. Hurried on, and night was closing as we got through first part. Moon and Matteo's intimate local knowledge carried us on. Very long descent; scenery very fine; woods all but pitch dark. Reached inn at 11.10. All in bed, minestra, sleep. Did not get up till past 8.

[On another page, among barometrical observations, we learn that the first large casera was reached at 4.30 A.M., and 'Tosa' (? top) at 3.50.]

4. THE PIZZO PORCELLIZZO.

[This point was ascended by Mr. Ball on August 19, 1863. He tells us in his 'Alpine Guide,' vol. ii. p. 406, that on the summit he found a cairn, built by the Swiss engineers, though the peak lies wholly in Italy. But Mr. Ball's ascent seems to have been the first by a traveller, according to Signor Lurani's monograph, 'Le Montagne di Val Masino,' p. 16, and his description of the fine view to be had from the top has given this peak a considerable reputation, so that it is now frequently climbed from the Baths of Masino. It rises N.W. of Masino, in the range between the Porcellizzo and Codera glens, being just S.W. of the peak called Cima di Tschingel by the older maps, and Piz Badile by the more recent ones. The height of 3,076 m. (10,092 ft.) is assigned to the peak by the Dufour map, and that of 3,074 m. (10,084 ft.) by the new Italian one. It should be borne in mind that Mr. Ball's remarks are based on the Dufour map, and describe the first exploration of ridges now well known, if not much visited.]

August 17. — Long-expected change in the weather; afternoon *temporale*. Start [from Cadenabbia] with young Arconati by the evening steamer for Colico. Storm on the

lake. By diligence to Morbegno. Arrive about midnight: fix to start at 4.30.

August 18.—Did not get off till 6.15 A.M. Reach Bagni di Masino at 11. Scenery fine. Huge blocks: one, the largest I know, about 250 ft. long, 140 high, and 120 broad, must contain fully 3,000,000 cubic feet of rock—say, ? 300,000 tons. Valley forks at San Martino, E. branch V. di Mello, N.W. branch V. Porcellizza. Baths about 2 miles from San Martino; steepish ascent; San Martino $3\frac{1}{2}$ hrs. = $11\frac{1}{2}$ miles from Morbegno. Rocks near Morbegno metamorphic, gradually pass into gneiss, and this into granite. Some of the gneiss quite the 'Serizzo ghiandone' of the Lake of Como. Afternoon wet, but we ascended as far as the *baita* (local word) in the Val Porcellizza, just above the limit of larch. Snowed all night, nearly down to the *baita*.

August 19.—Next morning start for an ascent. We were ready to start for Val Bregaglia, but seeing fine morning returned to original plan. The name Ligoncio is given here to one of the summits S.W. of baths, not to those at head of valley, or (?) to an alp.* The highest seen by me from P. dei Tre Signori and Legnone—snow on W. side, wall on E. side—is the Punta Trubinesca, 3,385 m. of the Federal map, Blatt 20; seems inaccessible. [Here small sketch of the point.] Next to W. is Cima di Tschingel, 3,308 m.; probably accessible, but not easy. S.W. of this is the Pizzo Porcellizzo, 3,076 m. As we mounted the wind was violent, and above the *tourmente* worked in fresh snow. All the men at the *baita* told us we must return, failing one [who] said, 'O siete matti, o volete presto diventarlo.' We went on to see how the weather would turn. It soon began to moderate, so we persevered. Aimed at the Pizzo Porcellizzo, and reached the top. Our guide, a muff,—a *guarduboschi*—remaining some way below at the fork. View over Val Codera extremely fine, overhanging a glacier. Distant view to whole range of Apennines; Graian Alps partly seen; summits of Rosa and Simplon covered; large portion of Lake of Como; P. dei Tre Signori; but Grigna concealed by intervening peak, about 2,970 m. Cold. There is a glacier pass, about 10,000 ft., 'Passo di Bondo,' E. of Punta Trubinesca; our guide did not know it, but Salvatore Fiorelli [of San Martino] can lead over it; says it is rather difficult. Another way to Val Bregaglia is by the gap most to the

* [The new Italian map gives it both to a peak and to an alp in the direction named.]

left in the Val Porcellizza to Val Codera, descending some way, then remounting to ridge W.N.W. of Tschingel, about 2,700 m., descending into Val Bondasca.* Descended by W. side of valley to Baths. The paved track lies on E. side of torrent, which forms fine cascades.

[On the page reserved for barometrical and other observations Mr. Ball notes: '7.55 A.M., chalet (Baita) di Porcellizza; 8.30 A.M., derniers mélèzes; 10.30 A.M., breakfast place; 1 P.M., Pizzo di Porcellizzo; 9 P.M., Bagni del Masino.' In the name of the valley he makes 'a' the final letter, like the Dufour map, but the Italian map substitutes 'o,' like the name of the peak.]

August 20.—Rose at 4.30. Drip, drip. It had snowed all night, down to limit of larch. Guide of yesterday brought a slight pale man, Salvatore Fiorelli—capital man. They are well satisfied with 5 francs a day. He was confident that he could take us over the Zocca, as they call the Forcella di San Martino of Fed. map (2,730 m.).† Lost a great deal of time; hesitated a good deal; but got off at 7. Went at good pace in the rain down to San Martino, then very gradual ascent in V. di Mello. Warnings: old man, 'Andate alla morte.' Salvatore steady. Track wrong in Fed. map. You begin ascent $\frac{1}{4}$ hr. before La Rasica, $2\frac{1}{2}$ hrs. from Baths, last huts in valley; ascend amidst pines, with some deciduous trees. The lower bridge has been carried away, so you go higher, and then descend a little to a bridge: then keep at a level for some way, and rejoining old path mount steeply to lower hut or casera, where cheeses are kept. By the sound of cattle soon found that the herdsmen had been driven down to lower *baita*, reached by a steep scramble through dripping grass and rhododendron. A hollow under a large block, with a few stones to keep out wind on one side; halt here about 11. Got some milk with our lunch. Arconati not well; trembled much from cold. We decided that it would be rash for him to persevere, and the question was settled by partial clearing of weather, and wind rising. We descend. In a few minutes, the *tourmente* above became furious, snow driven in whirling masses in all directions. Views extremely grand; granite rocks and pinnacles quite first-rate. Descending saw opposite us a waterfall sheerly carried away; only once in every two or three minutes a few drops reached

* [The Italian map calls the former the Passo Porcellizzo, and the Siegfried map dots in the way over the latter, though giving it no name.]

† [The Siegfried map retains the latter name, giving 2,743 m. as the height, while the Italian map has 'Passo di Zocca, 2,776 m.']

the bottom. Nearly 3.30 before we reached the valley. Salvatore pointed out a pass W. of Monte della Disgrazia by Alpe di Pioda, by which you may reach Sondrio; must be a fine pass.* No pass direct into Val Malenco [proper]. The highest point on N. side of valley [of Zocca] is Cima del Largo (3,402 m.), E.N.E. of Zocca Pass. S.W. and nearer is the Monte di Zocca (3,220 m.). Reached bridge at San Martino at 4.55, and the high road, at bridge over Masino torrent, at 7.25. About 1 hr. more to Morbegno.

5. PIZZO STELLA.

[This is a peak in the range just N. of Chiavenna, which commands a very fine view, and is visible from Menaggio and the Lago di Como. From his note in the 'Alpine Journal,' vol. ii. p. 272, we learn that Mr. Ball was accompanied by the Marchese Giammartino Arconati, and that a cairn, built some years before by the Austrian engineers, was found on the summit, though his ascent was apparently the first made by a traveller. The ascent took place, as appears from a note on the next page of the diary, on September 7, the top being reached at noon. Mr. Ball's estimate in the 'Alpine Journal' of the height of the peak as between 10,400 ft. and 10,500 ft. is strikingly confirmed by the figures on the latest Swiss and Italian maps. The Swiss map gives 3,129 m. (10,266 ft.), and the Italian 3,162 m. (10,374 ft.). There are several details in the 'Alpine Journal' which do not occur in the diary, so that the two accounts complete each other.]

September 6, 1865.—Man offered for guide liar and drunkard. Tried to send him back from Piasciscio [Fraciscio]. The chief 'Senner' at the Angeluga alp, named Giacomo dell' Adamino, had passed us just before, so we had to take two girls. It lies 3 hrs. above Campo Dolcino. Fair path, but stony, in part by bed of stream. You cross to its right bank at the village [of Campo Dolcino], and after a while zigzag up steep slope nearly to the level of the alp. Looking at Pizzo Stella from the chalet you keep well to the right, keeping as far as possible along a rocky rib, then up steep pile of broken stone, then cross small piece of glacier, hard ice requiring steps. Guide tried without; had to take off his shoes. Follow arête to the top; usual broken stone work. Clouds injured the very fine view. Head of Val di Lei considerable range of glacier. Took 4 hrs. very easy going, but little stoppage, going up; and 4 hrs. very slow, with several stops, descending. Kept further S.; descended by glacier and névé, and then by left bank of torrent from glacier. Lunch at chalet; descend in 1½ hr. to Campo Dolcino.

* [This is the Passo di San Martino o Mello (2,991 m.) of the Italian map, leading to the uppermost bit of Val Malenco.]

THE EARLY ASCENTS OF THE JUNGFRAU FROM THE
VALLAIS SIDE.

BY W. A. B. COOLIDGE.

IN the course of reading the accounts of early climbs in the Bernese Oberland, with a view to the volumes of the 'Climbers' Guide' for that district, I have come across several odd statements about the early explorations of the Jungfrau, so that I am tempted to discuss these matters in a more thorough fashion than is possible within the narrow limits of a guide-book. I think that I have been able to clear up one or two rather dark corners of the subject, but am quite ready to consider any well-founded objections to the theories I propose to set forth.

1. The *first ascent of the Jungfrau* was made by the brothers J. R. and Hieronymus Meyer, of Aarau, with two Vallais guides, on August 3, 1811. The published account* was put together, from the notes supplied by the Meyers, by Herr Zschokke, the editor of the 'Miscellen für die neueste Weltkunde,' in which it appeared in 1812. We there learn how they went from Naters over the Beichgrat and the Lötschenlücke towards their peak, returning by the same roundabout route. On their way up the peak they spent two nights out on the glaciers, and our difficulties begin when we try to fix the sites of these bivouacs. For a moment, however, we may put aside this question, as their route up the highest peak seems quite clear. Starting from a lofty bivouac, they passed between the Kranzberg and the Lauithor, climbed the S. or S.E. slopes of the Roththorn (3,946 m.) to its summit, or not far from it, descended thence 40 or 50 ft. on to the Roththal Sattel, and then climbed up the S. snow ridge, which is now the usual route. They thus gained the top from the S. That is the impression which a study of the original account (pp. 20-22) leaves on my mind, and I am delighted to find that Herr Gottlieb Studer† is of exactly the same opinion, his view being adopted by the writer in 'Modern Mountaineering.'‡

So far, so good. Assuming this route to have been that actually followed in 1811, never getting N. of the snowy

* *Reise auf den Jungfrau-Gletscher und Ersteigung seines Gipfels.*

† *Ueber Eis und Schnee*, vol. i. pp. 105-6.

‡ *Alpine Journal*, vol. viii. Appendix, p. 51.

buttress projecting N.E. from 3,946 to the figures 3,388 on the Siegfried map, it settles the question of the site of the *second night's bivouac*, which must have been somewhere high up on the glacier between the Kranzberg and the Gletscherhorn. But though I believe most firmly that this is where they really spent the second night, there are certain apparent difficulties in the way. The text of their narrative (p. 26) distinctly states that the rocks on which they spent the second night were 'half an hour S. of the Mönch, at the end of the Jungfrau Gletscher.' This seems to point to the S. foot of the Trugberg; but the fact that this spot was probably used as a camp in 1812 by some of the same party, and that then no mention was made of a previous visit to this place, the further fact that on the map in the 1813 pamphlet describing the 1812 ascent probably this spot is marked as the bivouacking place in 1812, while the S. foot of the Kranzberg is marked 'vorjähriges Nachtlager,' together with the 'eastern valley argument' (of which more presently), seem conclusive against the S. foot of the Trugberg.

In favour of the S. foot of the Kranzberg there is the evidence of the 1813 map just mentioned, while in a rough way this spot might be said to answer the requirement of being $\frac{1}{2}$ hr. S. of the Mönch. But though this map seems clear on this point, the line dotted in on it from this spot to the summit of the Jungfrau raises another grave difficulty. This line is drawn up the glacier W. of the Kranzberg, precisely the one by which, as has been seen above, Herr Studer, the 'Alpine Journal' writer, and I all believe the party to have really gone to the summit. But this route, up a snow valley W. of the bivouac, is diametrically opposed to what I call, for the sake of brevity, the 'eastern valley argument,' and this argument I hold to be the key to the whole problem. The original narrative tells us that from the first bivouac (the position of which will be considered presently) they made an attempt on the Jungfrau by 'a glacier valley coming down from between the Jungfrau and the Mönch' (p. 15), but were beaten back by huge crevasses among other things, and returned to their first night's bivouac. Unwilling to lose the afternoon, they made another attempt by another glacier valley 'lying to the E., and also coming down from the Jungfrau' (p. 17). Now, these words, 'östlich liegendes,' contain the one clear topographical indication in the whole narrative. By their own account their second bivouac was at the head of this 'eastern valley,' so that the first bivouac could not have

been at the S. foot of the Kranzberg, for if they had gone up a valley E. of that they would have ascended either the hollow which lies S., or that which lies N., of the snowy spur 3,388, the latter being that traversed by every party making the ascent of the Jungfrau from the Concordia hut by the usual route. This 'eastern valley argument,' therefore, seems to me to be decisive against placing the second bivouac at the S. foot of the Kranzberg. We must look for it at the head of the 'eastern valley'—*i.e.*, between the Gletscherhorn and the Kranzberg, perhaps near the figures 3,662.

The site of the *first bivouac* is of comparatively slight importance. It is stated (pp. 12 and 14) to have been 'on the N. side of the glacier, just where the Lötchengletscher joins the Aletschgletscher.' Literally taken, this indication would seem to point to the S. foot of the Kranzberg again; but, as we have seen above, the 'eastern valley argument' will not allow us to place the second bivouac there, so that it is still more impossible to make it the site of the first camp, though Studer (p. 103), in defiance of all his arguments, does, in a moment of forgetfulness, place it there. The first camp must have been W. of the valley at the head of which was the second camp, and, therefore, much nearer the Lötchenlücke. I would, therefore, suggest the foot of the S.E. spur of the Ebnefluh, at the figures 3,107 on the Siegfried map, or possibly that of the Gletscherhorn, not far from 3,424.

I thus come to the following conclusions as to the 1811 ascent:—

(a) The first bivouac was at the S.E. foot of the Ebnefluh, or of the Gletscherhorn.

(b) The second bivouac was at the head of the glacier lying between the Gletscherhorn and the Kranzberg, this being the 'eastern valley.'

(c) The summit of the Jungfrau was attained from the S. by way of the Roththalhorn (over the top, or near it) and the Roththal Sattel.

Of these three conclusions, (c), the most important, is that accepted by Studer and the 'Alpine Journal' writer, so that it may be considered firmly established. The two others rest on the 'eastern valley argument.' The evidence of the map in the 1813 pamphlet is thus rejected (on the ground of that argument), so far as the site of the second bivouac is concerned, but accepted (this, again, is the more important consideration) as a witness to the fact that the

glacier valley actually ascended towards the summit was that between the Kranzberg and the Gletscherhorn. It is simply a choice between the clear indication of the 'eastern valley,' and on the other side the vague statement in the text and the possibly careless marking on the map.

I cannot help adding, as a mere conjecture, that I am very much inclined to believe that all through the party mistook the Kranzberg for the Mönch; most certainly on their first attempt they were under the impression that the Gletscherhorn was the Jungfrau. Such a supposition would clear away certain inconsistencies, and I throw out the suggestion, not for the purpose of blaming the Meyers for imperfect knowledge of the topography of an unknown region (my own experience in the least known parts of the Alps enables me to realise most vividly their confused state of mind), but in order to sweep away some statements which, literally taken, seem most misleading.

I freely admit that even my theory does not cover *all* the facts known to us as to the movements of the Meyers in 1811. Hence even conjectures may be useful as possibly suggesting the true solution of the problem. Mr. E. F. M. Benecke has sent me two which are very ingenious, and which are certainly worth mentioning, though, for reasons to be stated, I can accept neither.

One is that the 1811 party, starting from their first bivouac at the S. foot of the Kranzberg (as stated on the 1813 map), went N.W. up the Jungfraufirn to the second bivouac near the figures 3,175, but ultimately bore W. so as to pass under the S. face of the snowy spur 3,388, and so mounted to the Roththal Sattel. This theory certainly clears away a great obstacle: it is undoubtedly easier to go up the Jungfraufirn than up the crevassed Kranzberg glacier, and, in this way, by keeping S. of the spur 3,388, the 1811 route is still made distinct from that of 1812, as it must be, for the 1812 party say (as will be seen in the next section) that they ascended by the opposite side to that of their friends in 1811—*i.e.*, as I believe, referring to the starting point, one S., the other E. But then this theory is open to the objection that the 1813 map distinctly shows the 1811 route as going up the Kranzberg glacier. Thus Mr. Benecke's theory accepts the evidence of this map as to the site of the first bivouac, but rejects it as to the route to the foot of the Roththorn. My theory rejects the former statement of the map, but accepts the latter. Hence the two theories both fail to cover all the facts, though I still prefer mine.

Mr. Benecke's second conjecture, made with a view to explaining the line drawn on the 1813 map, is even more ingenious. It is certain that the name Kranzberg was first given in 1841 by Desor,* and that the point 3,946 has no name on the Dufour map, being called Roththalhorn first on the Siegfried map. The name Kranzberg seems to be used in rather a wide sense, so as to include not only the mountain mass so called on the Siegfried map, but also the point 3,946 and the spur 3,388.† Indeed, Mr. Benecke says that as lately as 1890 the spur 3,388 was pointed out to him by a guide as the Kranzberg. He therefore suggests that the older writers also grouped all these points as one mountain mass, and that in this way it is just possible that the 1813 map-maker might mark the second bivouac at the foot of the 'Kranzberg,' meaning thereby that it was at the foot of the spur 3,388, or thereabouts. If this be assumed, the first bivouac could be placed at the foot of the true Kranzberg, the 'eastern valley' would be the Jungfraufrn, with the second bivouac at its head, while by keeping S. of the spur 3,388 the 1811 route would still lie to the left of the 'Kranzberg,' as indicated by the line on the 1813 map. But though all these puzzling facts would thus be explained, it is well to recollect that this theory rests on the supposition that the 1811 party, like those of Desor and Studer in 1841-42, grouped the true Kranzberg, the point 3,946, and the spur 3,388, together as one mountain mass. They may very well have done so, but there is not the slightest bit of evidence that they actually did so.

2. The route taken on the occasion of *the second ascent of the Jungfrau*, September 3, 1812, by Gottlieb—i.e., Theophilus—Meyer (son of one and nephew of the other of the adventurers of 1811), with the two Vallais guides, Aloys Volker and Joseph Bortis (also spelt Bartis and Bortes), is plain enough. Herr Zschokke's version was printed at Aarau in 1813, in a pamphlet entitled 'Reise auf die Eisgebirge des Kantons Bern, und Ersteigung ihrer höchsten Gipfel im Sommer 1812' (pp. 32-7), while Gottlieb Meyer's own narrative was not published till 1852 in the 'Alpenrosen' for that year (pp. xxvii-xxxii). They started from

* See Desor's first series of *Excursions dans les Glaciers*, pp. 380, 389-90; Forbes in *Norway and its Glaciers, Appendix on the Oberland, &c.*, p. 315; and Gottlieb Studer, *Topogr. Mitth. aus dem Alpengebirge*, pp. 112-13.

† See the above references, and Ball's *Alpine Guide*, vol. ii. p. 92.

the huts by the Märjelen lake (called by them the Aletsch lake), and bivouacked at the S. foot of the Trugberg, or perhaps at the Grüneck at the S.W. foot of the Grüneckhorn (a camp used some days before, when Rudolf Meyer found there his uncle, J. R. Meyer, and his brother Gottlieb, fresh from the passage—the third that year—of the Oberaarjoch). The dotted line on the map agrees with the written descriptions: the party simply followed what is now the ordinary route from the Concordia hut up the Jungfraufrn to the Roththorn Sattel, and so up the last peak. They thus passed N. of the snowy spur 3,388, as the 1811 party had passed to its S. The two routes joined on the Roththal Sattel, as even the 1813 map feebly tries to show, though on it not more than the mere fact of junction some way before the top is certainly stated. Studer (vol. i. pp. 108–110), followed by the ‘Alpine Journal’ writer (pp. 52–3), has no doubt as to the 1812 route, so that all is clear about it.

This ascent had been undertaken to settle doubts as to whether the 1811 party had really gained the summit of the Jungfrau, as their feat had been called in question by certain persons. But one statement, to be found in both recensions (pp. 32 and xxix respectively) of the narrative of the 1812 ascent, has caused a little confusion. This is the remark that, in hopes of finding a better way than the 1811 route, they climbed the mountain ‘from the E. side—*i.e.*, by the side exactly opposite to that ascended in the previous year.’ It should be noted that this expression is placed in the narrative while the party were still toiling up towards the Roththal Sattel, but before they had gained it. Bearing this in mind, we see that it is absolutely exact, and agrees admirably with the line taken in 1811. But some writers—*e.g.*, Mr. Ball, in ‘Peaks, Passes, and Glaciers,’ 1st series, p. 281, and ‘Alpine Guide,’ vol. ii., pp. 91–2—seem to imagine that the final peak was gained from the E. Yet the original accounts say quite clearly that this was not the case. The two routes joined on the Roththal Sattel, and ‘the ascent from opposite sides’ means simply that the 1811 party reached the Sattel from the S., and that of 1812 gained it from the E. But even Mr. Ball appears to have had an idea that the 1812 route is now impracticable. In reality it has always been the ordinary route to the Sattel, while, as for an ascent of the final peak from the E., the 1812 party certainly did not accomplish that feat, and it is even doubtful whether Mr. C. H. Pilkington’s noteworthy expedition in 1862 (see 4 below) can be said to have done it.

Strictly speaking, I believe that it is still a 'new route,' though I hope it will not be so after the summer of 1895.

3. The Roththal Sattel had thus been gained from the S. in 1811, and from the E. in 1812. But the routes taken on both ascents lay wholly within the territory of the Vallais. The peak had not yet been reached from the *Bernese side*, though the summit was divided between those two cantons. This missing link was supplied in 1828. I do not refer to the attempts of Hugi and his guides in August 1828 and July 1829 to reach the Roththal Sattel from the Roththal, nor even to Messrs. Yeats Brown and F. Slade's bold effort to force the same route, also in August 1828.* What I have in mind is the *third ascent of the Jungfrau*, made by Rohrdorf's guides, in that August of 1828 which witnessed so many attacks on the peak, this one only being crowned with success. From Caspar Rohrdorf's narrative † we learn that he set about his explorations in order to verify the old tradition of a pass from Grindelwald to the Vallais over the glaciers near the Mönch, but seeing that his way would lead him not far from the Jungfrau, determined to attempt that peak as well. After Herr Wäber's exhaustive discussion of the history of this legend, ‡ which, to my mind, finally settles the question, I need not refer to the tradition. What is specially interesting about Rohrdorf's journey is that on August 27, 1828, his party, starting from the Eigerhöhle, made the first passage of the Unter and Ober Mönchjochs, thus gaining the snowfields of the Jungfrau-firn on the E. side of the peak (pp. 13-17). After visiting the Jungfrau-joch they bivouacked at the S.W. foot of the Trugberg (probably near the figures 3,050). Next day Rohrdorf sent his best men forward to make an attempt on the Jungfrau, himself, with Christian Roth, again visiting the Jungfrau-joch, and climbing the well-known snowy hump on its W., called by him 'Sattelkopf.' He did not see his guides on the way up the peak, but caught sight of them on their descent, and fired a shot, to which they replied by a shout. On joining forces, he learnt that a cold wind, and fear of not having time enough to regain the Eigerhöhle that night (as no one wished to spend

* *Alpine Journal*, vol. v. p. 374, and vol. viii. Appendix, p. 55.

† *Reise über die Grindelwald-Viescher-Gletscher auf den Jungfrau-Gletscher, und Erstiegung des Gletschers des Jungfrau-Berges*. Bern, 1828.

‡ *S.A.C. Jahrbuch*, vol. xxvii. pp. 253-274.

another night in the open on the glaciers), had compelled them to return without having reached the summit. So the whole party returned over the two Mönchjochs to the Eigerhöhle, and next day descended to Grindelwald. On the 30th Rohrdorf went to Bern to prepare for a second journey, as he was not altogether satisfied with the behaviour of certain of his guides. But, without giving him warning, some of them, taking his implements with them, left Grindelwald on September 8, and slept at the Eigerhöhle, and on the 9th crossed the two passes again, but as the weather was doubtful slept at the foot of the Trugberg as before. Finally, on September 10, they achieved the complete ascent, by exactly the same way as that which they had tried thirteen days earlier, and by the same route from the Jungfraufrn onwards as in 1812. A ladder was found very useful, and so they gained what is clearly the Roththal Sattel (their highest point on their previous attempt), whence three hours' step-cutting led to the summit. The leader throughout was Peter Baumann, and with him were Ulrich Witwer, Christian Baumann, Hildebrand Burgener, Peter Roth (bearer of the very heavy iron flag set up on top), and Peter Moser, an old fellow of sixty years of age, all of Grindelwald. Christian Roth was left on the Sattel.* In this fashion the now usual route up the Jungfrau from Grindelwald was discovered and made. Thus a way was opened, which started indeed from the Bernese side, but joined the 1812 way on the Jungfraufrn, before the actual ascent of the peak begins. As is well known, the direct routes to the summit from the Bernese side were not forced till much later—direct from the Roththal to the Roththal Sattel in 1864; the now usual route from the Roththal to the S. ridge of the peak high up above the Sattel in 1885; and the route from the Little Scheidegg by the Schneehorn and Silberlücke in 1865. Yet I suppose that by far the greatest number of ascents of the Jungfrau from the Bernese side—at any rate from Grindelwald—are made by precisely the route discovered by Rohrdorf's men in 1828. For the sake of completeness I ought to point out that on p. 22, line 3, of Rohrdorf's narrative it is stated that the higher summit of the Jungfrau was to the S. of the ridge gained—no doubt the Roththal Sattel. This is obviously a slip of the pen. The 'Alpine Journal' writer (p. 54), relying on Rohr-

* Rohrdorf, pp. 21-2.

dorf's small map, wrongly distinguishes the 1828 route from that of 1812, as from the Jungfraufirn they were certainly identical.

4. We now come to the *Rev. C. H. Pilkington's ascent in 1862*, which was the immediate occasion of my investigations into these old routes. All that has hitherto been known of this ascent is the notice in Mr. Ball's 'Alpine Guide,' pp. 91-2. Here this ascent is first cited as confirming the possibility of the Meyer ascent, in 1812, from the E. (a survival of Mr. Ball's old misapprehension in 'Peaks, Passes, and Glaciers,' 1st series, p. 281); while, in the more detailed account given on p. 92 it is distinctly stated that the 1862 party 'reached the highest peak from its E. side, instead of from the S., as in all the other recent ascents' (obviously from the Jungfraufirn direction, for the 1864 and 1865 routes from the Bernese side were well known to Mr. Ball). And these views are simply copied by the 'Alpine Journal' writer, p. 54.

Now, among the letters on Alpine matters addressed to Mr. Ball (entrusted to me in connection with the preparation of the new edition of the 'Alpine Guide'), I discovered Mr. Pilkington's original letter to Mr. Ball, dated November 17, 1863, and illustrated with three pen-and-ink diagrams. This letter throws quite a new light on the subject, and no doubt Mr. Ball, not having specially studied the minute topography of the Vallais side of the Jungfrau, did not fully realise the true value of Mr. Pilkington's notes. I copy the most important passages of this letter before commenting on them, merely premising that it is Mr. Pilkington himself who, in the body of his letter, suggests that his line of ascent explains the difficulties raised as to the route taken in 1812, and mentioned in Mr. Ball's note (already cited) in 'Peaks, Passes, and Glaciers.' 'In the course of the summer of 1862 I went up the Jungfrau; the snow was in a very ticklish condition, and the big crevasse below the Roththal Sattel looked very impracticable; besides, the ordinary arête, being all snow, seemed to promise no end of step-cutting. We went to the right, below the Roththal Sattel, and attained some rocks, by which we got up with hard climbing, having, as it was, some 300 steps to cut, each step taking five or six blows.' He then illustrates his route by his diagrams, on one of which (a sketch of the Jungfrau, from the Jungfraufirn) he marks his route most distinctly along the E. face to a little way N. of the summit. He distinguishes the arête (his *b*) usually ascended

from the Sattel from the 'edge, or a little inside it' (his c), by which he mounted, and then proceeds as follows:— 'Now, by ascending the edge or arête (c), we did come upon the summit ridge from the E. Also, from my notes of the ascent, I find that we reached the foot of the rocks at 9.40,' having before stated that they were below the Roththal Sattel at 9. '(A.) We mounted mostly by rock-climbing to a certain spot, where we halted. Time of ascent, $1\frac{1}{2}$ hr. Time of descent, 1 hr. Time of halt, 35 min. (B.) From the halting-place to the summit we were mostly on snow, varying from 40 to 50 degrees. We were stopped almost completely, close to the top, by a very steep bit of rock, after which a short arête of 45 degrees, snow. We had to cut about 300 steps in all. Time, 12 to 3 (3 hrs.). Time of descent of the same, $1\frac{3}{4}$ hr. I believe the whole distance of the last ascent, from the foot of the rocks to the summit, is about 1,400 ft. If we divide this number between the two parts, A. and B., in the proportion of the times of descent (when the rate of motion was most uniform), we get for A. about 500 ft., and for B. 900.' At the end of this part of the letter Mr. Pilkington adds: 'I think that, perhaps, 1,400 ft. for the whole is too large, and also that A. and B. were more nearly equal.' Mr. Ball adopted the estimate of 1,400 ft., which, if anything, is perhaps too high, as the Roththal Sattel itself is 1,014 ft. (309 m.) below the top. Mr. Pilkington has also been good enough to let me see his original diary, to supply further details from his recollections, and to examine my photographs, as well as to talk over the whole matter with me. The following conclusions, therefore, sum up all that is to be known of the route he took on August 2, 1862, accompanied by Mr. Russell Stephenson and Mr. C. Parker, the guides being Chr. Michel, Benedict Nägeli, and P. Rubi. If, now, we study accurate views of the E. face of the Jungfrau, we shall be better able to judge where Mr. Pilkington really went. I have before me the following views, published in Signor V. Sella's collection, 186 (from the Concordia hut), 182 (from the same spot), and 201 (from the Aletschhorn, but here the Roththalthorn, 3,946, blocks the view to a certain extent). The view given at the end of the account of the accident on the Jungfrau in 1887* is also very useful, as well as photograph No. 657 of the collection published by MM. Attinger, of Neuchâtel.

* *Das Unglück an der Jungfrau vom 15. Juli 1887*, by F. Becker and A. Fleiner, Zürich, 1887.

It is clear from Mr. Pilkington's account that the ordinary route was left below the bergschrund under the Roththal Sattel, the party then bearing to the right, and climbing up by some rocks to the E. base of the S. arête, then proceeding to the right. Now the latter part of this course seems to cross at right angles the line of fall of the six victims of 1887. (As is well known, they quitted too soon the great S. snow arête leading down to the Sattel, bore to the left, and fell over some rocks, estimated to be about 650 ft. (200 m.) high. These are specially well seen on photograph No. 186.) This would bring the 1862 party to the edge between the great S. snow arête on the left (towering up in a high snow wall) and the rocks on the right which form the E. edge of the great rock ridge, supporting the mass of the aforesaid snow arête. I believe, then, that the 1862 party ascended along this ledge, keeping now on the snow, now on the rocks. In this way they would be able to mount to a point very near the top. Then, as Mr. Pilkington states, they were nearly stopped by a very steep bit of rock, on the left of which was a short, very steep snow slope and ridge, up which it was necessary to cut steps before attaining the N. end of the short snow crest (like that of a tent) which forms the summit of the Jungfrau. This course is exactly pictured in a sketch in Mr. Pilkington's diary, representing some of the party astride of the final crest, and *turning to the left* to gain its highest point. Of course, when coming by the usual route from the Roththal Sattel the S. end of this crest is gained and by it the summit. The last portion of Mr. Pilkington's route is fairly well seen on Sella's photograph, No. 201, and the actual shape of the final crest in the sketch given in Forbes' 'Norway and its Glaciers,' Appendix, p. 321. Mr. Pilkington's party thus never touched the N. arête * at all, gaining the N. end of the final crest direct from the E. But this was the only bit done from the E., so that in no proper sense can this route be said to be up the E. face of the peak. It lay along the E. base of the great snowy S. arête, in part along the snow on the left, in part along the rocks projecting on the right, which in 1862 were deep in

* It is worth noting that the topmost snowy gap in the N. arête was in 1878 gained by a party coming from the depression between the highest peak and the Wengern Jungfrau (4,060 m.), 'about 30 yards from the former on the N.E. arête,' some difficulty having been found in traversing these last few yards. (*Alpine Journal*, vol. ix. p. 112.) This party therefore gained the N. end of the final crest from the N.

snow. Strictly speaking, this route (occasionally taken even now, I understand, under exceptional circumstances) is but a variation of the ordinary route by the S. arête. It is in a certain way parallel to that taken in 1867 by Herr von Fellenberg,* who, to avoid the S. arête, then blue ice, kept along the edge of the rocks overhanging the Roththal, now climbed from the Hochfirn by anyone ascending the peak by the so-called 'new route' from the Roththal Club hut. No doubt Mr. Pilkington's route was at a greater distance below the crest of the snowy S. arête than Herr von Fellenberg's, but it seems to me that, speaking broadly, we can say that each party avoided the crest of the S. arête, one (1862) keeping along its E. base, the other (1867) along the rocks which fringe it on the W.

I have also come across an account of an ascent of the peak, made on July 20, 1862, by M. F. Thioly, of Geneva, with the Eggishorn guides, A. Walters and J. Minig.† The route taken is very much that which I suppose Mr. Pilkington's party to have followed—viz., by the E. base of the great snowy S. arête, keeping perhaps a little higher up than Mr. Pilkington in order to try to edge up to the crest of the S. ridge; 1,200 to 1,300 steps had to be cut in hard, very steep ice. This route was adopted because it was found impossible to get over the highest crevasse just below the crest of the Roththal Sattel. In the end the S. arête was struck a few steps before reaching the summit, herein differing from the line taken by the English party. The foot of the slope leading up to the Sattel was left at 7 A.M., but the top gained at 2 P.M. only, and the return was made by the same way. M. Thioly's narrative is very clear, and he defines very precisely the relation of his route to that usually taken. He states that no ascent of the peak at all was made in 1861, and that his party was the first in 1862. Hence he anticipated Mr. Pilkington, save in the very last bit of the latter's route. The Jungfrau in 1862 seems to have been in a very odd condition, so far as regards its Vallais face.

I hope that by discussing these necessarily very minute points of topography I may have done something to clear up the real lines of ascent hitherto taken up the Jungfrau from the

* *S.A.C. Jahrbuch*, vol. vi. pp. 148-9.

† *Echo des Alpes*, 1865, No. 2, pp. 1-18, and summary in Studer, vol. i. p. 117.

Vallais side. As is well known, the serrated N. arête of the Jungfrau from the Jungfrauoch has not yet been traversed, though, after the hotel is built on the summit of the peak, perhaps a party may spend several days in forcing it, secure of a shelter for the night on the top, and of an easy retreat by rail thence to the Little Scheidegg. But to those who take an interest in historical mountaineering I would recommend the 1811 route from the S. over (or nearly over) the Roththorn, 3,946, which an active party starting from the Concordia hut could easily manage in not too long a day; and, further, either a repetition of the exact route of 1862, or a direct ascent up the E. rocky face straight to the summit, or to a point close to it, on the S. arête. I shall indeed feel rewarded for having written this paper, if I succeed in inciting some of our members to make these routes, particularly if they will be good enough to send me detailed notes of their climbs for use in my 'Oberland Climbers' Guide.'

Let me also add an excellent suggestion sent to me by Mr. Benecke, from whom I have received most valuable aid in carrying out these historical investigations. He writes as follows: 'Would it be quite hopeless for an explorer to try and find some trace of the Meyers' bivouacs? The various possible places are, after all, not so very numerous, and they are all within easy reach of the Concordia hut. One of the travellers might have scratched his name on the rocks (such documents seem to last well—*e.g.*, the initials on the Zumsteinspitze); or one might conceivably find some fragment of burnt wood, or some small article lost by one of the party. The bivouac would doubtless be in some sheltered place, and no one is likely to have been there since. The chances of finding anything are of course small; but still, of the many people who go aimlessly wandering about the Aletsch glacier from the Eggishorn, might not one spare part of a day on the chance of coming across something? The discovery of anything—say, at the foot of the Ebnefluh, which is particularly accessible—would be so very conclusive.'



THE MOUNTAINS OF MONTENEGRO AND ALBANIA.

BY W. H. COZENS-HARDY.

(Read before the Alpine Club, March 5, 1895.)

IT is with some amount of trepidation that I venture to read to the Alpine Club to-night a paper on the mountains of Montenegro and Albania. For in talking of mountains in Montenegro I feel a difficulty not unlike that which arises in describing the snakes in Ireland—there are none; none, I mean, which I can conscientiously recommend as worthy of attention to the gymnasts of a Swiss centre. Glaciers are not to be found, large snow fields do not exist, while hazardous rock climbs are to be obtained more in imagination than in fact. But I will avail myself, so far as any rate as concerns the technical details of climbing, of the traditional defence, my paper shall be only a little one.

For my own part I must confess to a sneaking partiality for a form of mountaineering which is something more than settling in an Alpine centre, and, like a bear in a pit, climbing the walls all round, only to return to the bottom: I would rather get to the top and go beyond. That was the spirit of my mountain ascents in Montenegro, and the Secretary has bidden me include these more general topics in my paper to you to-night; and, if I may respectfully say so, I think he is eminently wise. Since I have been in Montenegro I have more than once been asked whether it is not a South American republic, or if the natives are not Negroes. Though these delusions are naturally not shared by any member of the Club, there is one other delusion, in respect to which I am not so confident that the same immunity prevails. My impression is that if a poll were taken of the Club as to the colour of the mountains of Montenegro an overwhelming majority would affirm that they were black. Let me say at once they are white or they are green; black they are not. The removal of that delusion might alone be sufficient justification for my paper on Montenegro. But I can plead a further ground. No one has ever read to the Club or written in the Journal any account of the mountains of Montenegro or Albania. Yet mountainous, in the broad sense of the word, these districts certainly are. In Montenegro, though the highest mountain is not much more than 8,100 ft. above the sea, yet there are eleven mountains over 7,000 ft., thirty between

6,000 ft. and 7,000 ft., and nineteen over 5,000 ft. high; while in Albania there is range after range of unmeasured and unnamed peaks the summits of which rise even higher. The fact, then, that these mountains are unknown to this Club may perhaps atone for the absence of that wealth of technical mountaineering detail with which a paper usually abounds.

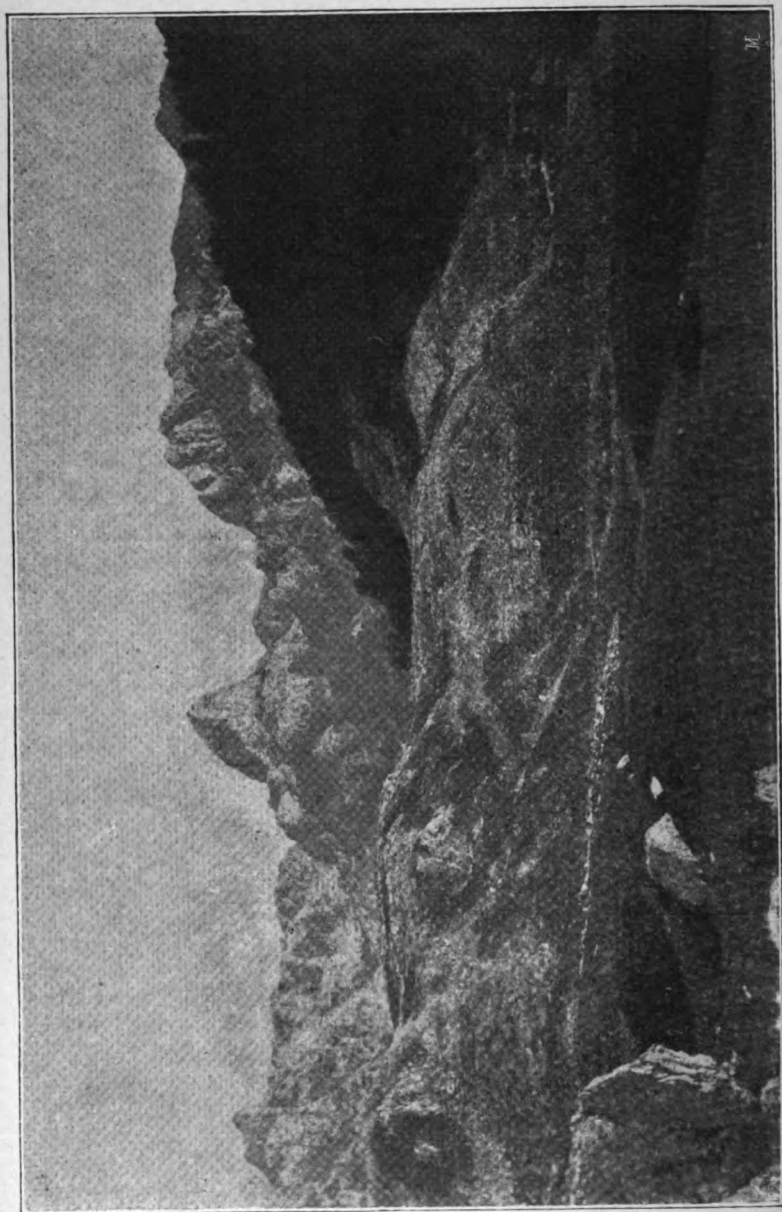
My own acquaintance with this part of the Balkan Peninsula dates from the year 1891. In that autumn a sudden inspiration seized me at Venice to visit the coast of Illyria. Once there the fascination of the smallest Power in Europe compelled me to make the journey from Cattaro to Cetinje, and to cross Montenegro into Herzegovina and Bosnia. I returned in the autumn of 1892, and in 1893 I spent in Montenegro and its border-lands the whole of a Long Vacation.

Montenegro itself falls naturally into two parts: one, to the south and west—a limestone district of bare hills and treeless basins, with an average level of 2,000 ft. above the sea; the other, to the north and east—grass-covered mountains and wooded valleys. From a mountaineering point of view there had always been two goals before me: one was Kom in the east, the other Durmitor in the north, the two highest mountains in the country. Let me take them in this order; and first of Kom.

On August 17, 1893, I left Cetinje, the capital, for Podgorica, to the north of the Lake of Scutari. Mr. Munro came with me for ten days before beginning the excavations of the Roman town of Dukle, and with us was an officer of the Prince's bodyguard, whom the Prince had put at my disposal, Mileta by name, and a mounted policeman, called Novica, given us by the Mayor of Podgorica.

Podgorica lies low in the plain, shut in by mountains, and I was not sorry to get free from the oppressive heat into the more temperate climate of the hills. The roads, like all those in the limestone districts of Montenegro, were monotonously bad—mere tracks loosely covered with slippery stones. The first day we camped at Medun, where is an old Turkish fortress and the ruins of Cyclopean masonry. The second day's march brought us to a level of 4,000 ft. above the sea. We were within sight of a range of mountains to the east, where the snow still lay in patches, and beech trees grew luxuriantly. Gradually the dreary expanse of grey limestone through which we had been passing gave

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M

TORÁČ, PAŠÁK, AND VELI VRH.

From a Photograph by Mr. J. A. R. Murray.

place to green pastures, where cattle and sheep were grazing. At last we reached a beautifully wooded valley 4,500 ft. above the sea. At its head was a group of mountains of striking form. The precipitous limestone cliffs of Torač and Veli Vrh enclosed the valley, and in the middle rose the tall pointed peak called Pašak. From this side they appeared almost, if not quite, inaccessible. But we were bound for Kom; so we crossed a ridge, and at the bottom of another small valley, Mokra Dolina, halted for the night. Two days' travelling had brought us to a different climate. We were only too glad of all the coverings we could get that night, and in the morning it was with a shudder that I washed.

We were now at the foot of Maglič, a mountain which I wished to climb in order to see what lay in front. The next morning we made our way up the valley to the ridge of Širokar at its head. The general features of the landscape bore a strong resemblance to the Furggen Thal leading up to the Antrona Pass near Saas. As we reached the crest a magnificent view burst upon us. A thousand feet below lay a deep valley lined with fir trees; immediately opposite was the sharp-pointed peak of Vila, over which the Montenegrin frontier passes. But what fascinated me more was the first glimpse I had had of the mysterious Albanian mountains, which filled up the background. The eye took in innumerable jagged rock peaks flecked with snow. The morning light showed them up to perfection, but made it impossible to distinguish the ranges into which they fell.

Maglič, however, lay behind, and not in front. Retracing our steps, an hour's ride brought us to the foot of the final summit, and after half an hour up grassy slopes—so steep that the descent on the return by a sitting *glissade* was as easy as it was destructive to one's garments—and ten minutes over a shaly arête, we reached the top, 7,700 ft. above the sea.

The view from Maglič is, to my mind, the finest in Montenegro. On the east and south lie the Albanian mountains; to the north rises the double-peaked mass of Kom; below are sombre valleys clothed with dark forests, through which trickle tiny streams; and beyond, across the frontier, the town of Gusinje, encircled by the Albanian ranges. Descending Maglič, we passed through forests and then over pastures, until the collection of shepherds' huts, 6,000 ft. above the sea, called Carina, was reached, and here the camp was pitched. Above the camp rose the boulder-strewn slopes and limestone cliffs of Kom; 1,500 ft. below, a deep valley,

lined with trees, in which the river Peručica flows, led down to the river Lim.

The shepherds at the huts were from Dulcigno—Albanians in speech and dress, Montenegrins in nationality. Their head man was a fine old gentleman, who rejoiced in the name of Jeka Ledj. He was dressed in a usual Albanian costume—tight trousers of white homespun braided with black, and a white scarf wound like a turban round the head, and then carried under the chin and round the neck, leaving only the face exposed. He was elaborately armed with two chased silver pistols, inlaid with coral, a ramrod, and a yataghan—all worn in his belt. He gave us milk; we gave him tea—the first he had ever tasted.

There are two main peaks of Kom—Kom Kučki to the west, Kom Vasojevički to the east. So far as I could learn, no one had yet been up Kučki Kom, estimated by the Russian officers who had ascended Vasojevički Kom to be 80 ft. higher than the other. My first efforts were, therefore, directed against Kučki Kom. Though it was not visible from our camp, it was clear in what direction it lay, and a sheep-track, leading in well-marked zigzags up the mountain-side behind Carina, offered an obvious means of access to the mountain. At 6.15 on August 20 Munro and I, accompanied by Mileta, Novica, and three other Montenegrins, left the camp, and in an hour reached the top of the zigzags, 1,000 ft. above Carina. Here we were on a saddle, the lowest point of a ridge forming the south edge of a large crater-like basin, which opened out below us. To the east lay Vasojevički Kom, rising in sheer precipices of rock 1,000 ft. above the basin. To the west, slopes of loose stones led up to a precipitous wall of rock, running north-east and south-west, and surmounted by jagged pinnacles. This western range throws out various minor summits on its eastern side to form the north-west and west edge of the basin, the only exit to which is the narrow opening between the Kučki and Vasojevički ranges. Through this cleft the distant hills were visible, grassy and covered with trees; while at our feet, in the bottom of the basin, were large patches of old snow.

From the saddle we followed the ridge westwards, keeping Carina below us to our left. We ascended rapidly, partly over boulders, partly over shale, until the face of the rock wall lying above us, and rather to the north, was opened up. At the north end of this lay Kučki Kom. Novica suggested there was a way up round behind this ridge. As,

however, a direct route, if possible, seemed preferable, I examined the face to discover whether it could be climbed. The wall was 300 ft. of vertical precipice. The most likely route appeared to lie up a gully leading to a gap between two sharp-pointed peaks on the arête, rather to the south of Kučki Kom. Up this gully Munro and I decided to make the attempt. Novica and another Montenegrin went off round the south end of the ridge; Mileta and the rest preferred to remain where they were, and for some time followed our course with horror-stricken gaze.

Munro and I made our way over the screes to the foot of the gully, and there we put on the Alpine Club rope, which I had brought with me in case of emergency. The gully proved straightforward enough. The climbing was not particularly difficult, and after one false attempt on a wrong route we worked our way up through a narrow chimney at the top, and so in half an hour from the foot reached the arête. On the north-west the ridge fell precipitously down 1,500 ft. or more, and below us on that side was a considerable bed of old snow, the largest in Montenegro. From the top of the gully half an hour over the teeth of the arête, where the rocks were very loose, brought us to the summit, 8,032 ft. above the sea, in three hours and a quarter from Carina. Novica had joined us just before. He was much more agile than his companions, and found his hide shoes give good footing on the rocks. Mileta, he reported, had tried the ascent, but became giddy, and, repenting of his folly, turned back. Novica's companion would come no further than the peak at the south end of the ridge, called Kom Vrh Više Rogan—*i.e.*, The summit of Kom above Rogan.

The view from Kučki Kom, more especially over the Albanian mountains, is fine, but not so good as that from Maglič. The foreground of forests, and of the Gusinje valley, which is so conspicuous and beautiful a feature in the latter view, is not made up for by the screes, and snow, and cliffs of the Kom basin. The summit on which we were was obviously the highest on the ridge. To the north was the slightly lower summit of Bajvan Veli, on which there is a cairn; to the south the peak above Rogan. Kučki Kom itself appeared inaccessible on its north-western or south-eastern faces. The only way up would seem to be by the route we had followed, or by the north-east arête, invisible from the top, which leads down to a deep gap between Kučki Kom and Bajvan. From this gap up to Bajvan the

arête appears to present no difficulty, but it may not be easy to reach this gap from the Kom basin.

After constructing a large stone man, we left the top at 10.15. Novica was much alarmed at the rope, and when I suggested that he should attach himself to it he refused. 'If we fell,' he said, 'we should drag him down too.' Argument was unavailing, and so he had to take his chance. We descended by the arête to the head of the gully, and, continuing south-west along the ridge, in half an hour reached the Vrh Više Rogan. After building another cairn, we left at 11, and, following the easy south-west ridge, soon unroped. Near here all the usual Alpine flowers were growing, including the Alpine ranunculus, the yellow poppy, and the gentians, among which the dark blue species was conspicuous. The edelweiss alone was nowhere visible. Bearing east, we regained the saddle we had passed over earlier in the day, and in half an hour returned to Carina, which we reached in two hours from the southern peak.

According to all the evidence I could collect, this was the first ascent of Kučki Kom by a stranger. Novica said he had been up as a small boy. But both he and the captain from Medun, who keeps his sheep at Carina every summer, as well as an old Montenegrin who had known the mountains for fifty years, agreed that no foreigner had ever been up that peak before. In my opinion, the name Kučki Kom has been sometimes loosely used as the name of another summit on the eastern range. For instance, Signor Maissa, the Italian Consul at Scutari, who had been with his son up what he had thought was Kučki Kom, came to the conclusion, after we had compared notes, that he had been mistaken. He had only ascended the southern peak of the eastern range, and had never touched the western ridge, on which the real Kučki Kom lies. The same criticism probably applies to two other travellers—Baldacci, an Italian botanist, and Hassert, a German pedestrian. From their own accounts of their ascents, and also from the statements of the captain of Medun, with whom they both stayed at Carina, neither had ever ascended the real Kučki Kom, the highest summit of the western ridge.

The ascent of the mountain, and more particularly the use of a rope, was the topic of conversation, and the subject of long and elaborate telegrams from Mileta to the Prince, paid for out of the revenues of the State. When I returned to Cetinje the Prince summoned me before him, and upbraided me for my foolhardy conduct in going to a place

from which it was possible to fall down. 'If you had tumbled and hurt yourself,' he said, 'your countrymen would say that the brigands of the Black Mountain had murdered you.' I explained that I was a member of a secret society, under vows to get as far from the lower world as possible, that my emblem was a mystic rope within which lay a thread of red, and that, armed with this, I could go anywhere in safety. After I had descanted on the true principles of mountaineering, the Prince relented, and acquitted me of rashness.

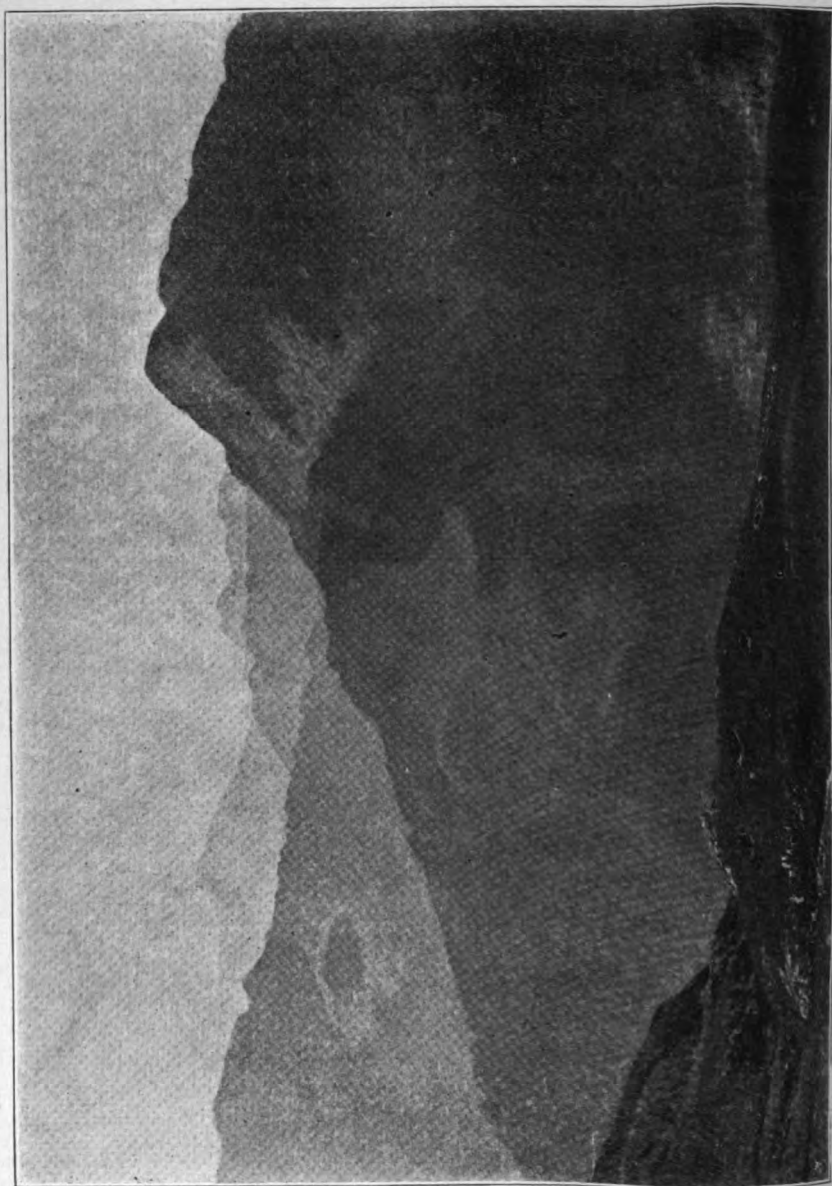
My first visit had left Vasojevički Kom unascended, but on September 5 I left Podgorica a second time, with the object of going up it. My route now led me nearer the Albanian frontier than before. Soon after passing the extreme south of the range of Helem, which divides Medun from the frontier, a magnificent view of the Albanian mountains opened out to the south and east across the narrow gorge, 1,500 ft. deep, through which the river Zem flows. To the north-east the view was bounded by the Prokletija—the 'Accursed Mountains,' as the Montenegrins call them. They have only this general term for all the Albanian peaks, though the Albanian tribes, they say, have separate names for each. The nearer mountains were covered with grass and trees, but the distant peaks stood out bare and gaunt in the sunlight. The first night we stayed with Maraš Marko, the captain of Zatrijebač, at a village—ten houses scattered over three miles of country—called Nik Maraš. The captain talked Albanian and only a few words of Serbian, and his stone house, behind which the tent was pitched, had the wooden verandah so common a feature in Albania. Here we were not half a mile from the frontier; and, to protect the camp from imaginary Albanian raids, eight men in the typical white Albanian costume, armed with rifles, were posted round the tent during the night. They were much pleased with tea, but thought the cups, as well as their contents, were meant as presents to them. In credit, however, to their honesty, I must admit that the one cup which was missing the next morning, because its possessor had gone home, was duly returned to me afterwards at Cetinje.

From Nik Maraš onwards there is a series of fine mountain views. The path winds over the grey limestone rocks, keeping close to the edge of the precipitous cliffs which form the right bank of the Zem. At least 1,500 ft. below the glittering ribbon of water was visible in its narrow bed.

On the southern side the slopes rose equally precipitously to the summits of the nearer Albanian mountains. Soon we reached, at Poprad (3,500 ft. above the sea), the region of large beech trees, and before long came out on the undulating grassy pastures, covered with sheep and cattle, of Korita. To the north the mountain Hum Orahovski rose directly from the meadows. To the south and south-east the alp terminated in thick forests of beech and fir. Beyond, and towering above them, rose the inaccessible cliffs of a nameless Prokletija peak, surrounded by all the ranges of the Accursed Mountains, on which the snow still lay. Their jagged pinnacles of bare rock and their fantastic shapes, which at evening flushed with all the colours of the setting sun, reminded me irresistibly of the Dolomites round San Martino. No sign of vegetation, no trace of human life, was visible among them. Their summits looked down in desolate silence. Their apparent inaccessibility, not more than the mysterious legends of strange and warlike tribes who lived among them, threw a spell upon me. To penetrate into the heart of them was what I had long desired. But that afternoon my design was to receive a check. Two men, as villainous-looking scoundrels as anyone could wish to see, dressed in Albanian costume and fully armed with rifles and belts of cartridges, came up and sat down by the tent. They said they were returning from Montenegro to Gusinje, 'an evil place,' they told me, 'where bad men lived.' For themselves, though they had no objection to my going there, they advised me not. 'They believed,' they said, 'that I had brought money and papers to buy Gusinje and hand it over to Montenegro.' And then they left. I afterwards ascertained that these were not two simple wanderers, but spies sent out from Gusinje to keep me from the town. Here, then, was another hindrance in my path, and the chance of ascending any of the Prokletija seemed more remote.

The next day, with two Montenegrins, I went up Hum Orahovski. A path led in zigzags up above the camp. The only gully on this side served when the path ended, and the top was gained in one hour from the tent. The view from this height of 5,920 ft. was even finer than below. Across the Zem the ramifications of the Prokletija were more clear, and the chain resolved itself into two ranges, separated by a deep valley running nearly parallel with the Zem until it joined that river. The nearer range was lower and in parts well wooded. The higher, distant range was composed of countless peaks of every shape. The rocks

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From a Photograph by Mr. J. A. H. Munroe.

VITYAZ MT. AND THE PROLETARIA, FROM SIBIRSK.

were steep and bare, and large beds of snow lay at the bases of the cliffs. From this side, at any rate, access looked improbable. There was no verdure, no water, no camping ground, except among the rocks.

To the south-west rose the grey Montenegrin mountains; Rumija near the sea stood out conspicuously; below it stretched the broad expanse of the Lake of Scutari, with the lofty citadel of the North Albanian capital at its southern end; thirty miles away, between Cetinje and the Adriatic, the little white chapel on the top of the sacred mountain Lovćen, where lie the bones of a Montenegrin ruler, was clearly visible through the glass. The summit I was on was the culminating point of the range. Half a mile to the west was another much lower peak, on which there was said to be a pyramid.

We raced down in half an hour to the camp, as I was anxious to diverge from the route to Kom to see the view, which was said to be magnificent, from the little point called Sokol, at the edge of the Korita plateau overlooking the Zem. The slopes leading up to it were covered with fine beeches. We crossed the frontier before reaching the top, and, emerging from the trees, we found ourselves on Sokol, 5,000 ft. above the sea. The whole valley of the Zem lay opened at our feet. Three thousand feet or more below we watched the river, coming from the heart of the Accursed Mountains, flowing between lofty precipices, widening out where it passed by the little village of Seljci—the white chapel of which gleamed in the sunshine—contracting again just below us, and making its tortuous way to the west through a defile so narrow as only to allow room for the river and the path. Along this a few microscopic Albanians with their pack-horses were slowly passing. Beyond and above was the perpetual background of the Albanian mountains. Revolver-shots, fired off by Mileta to inform the neighbourhood that though on Albanian soil a Montenegrin was not afraid, evoked hoarse cries from far-away Albanian warriors, defiantly challenging the rude interrupters of the stillness. The view was certainly well worth the divergence from the path.

Continuing our march towards Kom, we passed to the east of Pašak, of which I have already spoken, obtaining fine views of the pointed Vila on the Albanian side of the Lake of Rikavac. This dark blue mountain tarn, to which we descended, lies in a grassy valley, three hundred yards across, leading direct to Gusinje. Above it was the green summit

of Sirokar, and our camp was conspicuous on the top. On reaching the tent we found ourselves obliged to remove it hurriedly away to lower ground, lest it should prove too attractive a target for bullets from Gusinje. The proper way, so I have been told, of using a tent in the Albanian mountains is to pitch it and then sleep under a tree a hundred yards away. The tent, and not its owner, is bullet-riddled in the morning.

The next day, September 8, took us to our old camping ground at Carina. Jeka Ledj and his Albanians were still there. The captain of Medun had returned home. His son, however, agreed to come with me up Vasojevički Kom. Accordingly early the next morning he and I left Carina, and skirted the base of Kom high above the valley of the Peručica. The narrow track crossed the steep slopes of the mountain, on which the débris of bare tree-trunks and boulders bore silent testimony to the force of the avalanches of snow and rocks which sweep down from the wild crags of Kom, towering above us, magnificent in form and colour. Beech trees succeeded to grass; and their trunks, blown down by wind and overturned by snow, offered serious obstacles to our path. But in two hours from Carina I came out on to the grassy shoulder running north-east from the north-east foot of Vasojevički Kom. This ridge, called Stavna, is nearly level pasture-land, three-quarters of a mile in length and 6,000 ft. above the sea.

Turning south-west I rode up to where the grass ends and the shale begins, and here left my horse. From this point an arête runs up towards the main ridge. Direct access to the summit from this side is impossible, as the northern and western faces are sheer precipices. I made my way up the steep screes and over rocks, until in half an hour I struck the main arête. Here I saw the great contrast between the eastern and the western slopes of the mountain. To the east, for some little distance, were easy slopes of grass and rock; to the west were the sheer sides of the Kom basin. Continuing along the crest of the ridge, which presented no difficulty, I reached a pyramid of stones three feet below the true summit and fifteen feet away; and at last I stood on the top of Vasojevički Kom, 7,946 ft. above the sea. The day, though bright, was somewhat cloudy, and the mists were seething in the basin below, across which the western range was visible—Kučki Kom and the rock wall I had ascended a month before. To the east, across the deep gorge of the Peručica, was a series of bare rock peaks, along

which the Albanian frontier runs, hiding to a great extent the Prokletija mountains. Durmitor, so my Montenegrin companion assured me, was visible, and Belgrade as well; but for the truth of these statements I cannot vouch.

The way I had chosen is not the route which those who have been up before have followed. That lies, I gathered, up the grass slopes to the east. I returned the same way, but the rock and scree were more quickly descended. Running and sliding down, I reached my horse in twenty minutes as compared with an hour and a half for the ascent, and that afternoon reached the town of Andrijevica.

And now for the highest mountain in Montenegro—Durmitor, which lies far away to the north. A cardinal article of faith of the ordinary Montenegrin is that each mountain top is haunted by a malevolent spirit. My own experience of three years of Durmitor has made me a convert to this creed.

On my first visit to the country, in 1891, I had desired to get to its top. My ideas of the topography were, however, vague. I had no tent, no food, and an impression—which was undoubtedly correct—that nothing to eat was to be obtained near the mountain. I endeavoured to supply myself with food at Podgorica, the centre of Montenegrin commerce. Tinned meats were beyond my dreams; but sardines, I was told, were caught close by, and put into tins in the town. The whole of Podgorica was ransacked. Shop after shop was drawn blank. Everything but sardines was to be found. A rope-maker at last produced a tin. It once held English biscuits, but now was empty. As no supplies were forthcoming, I got no nearer Durmitor that year than spending one night in the open among limestone boulders with a large circular loaf of brown Montenegrin bread as a pillow, and another in an Austrian fort, into which, by whistling the Austrian National Hymn, I had effected an entrance, scatheless, after dark.

The following year I might have been more successful. Tins I had plenty with me; and had it not been that my companion was hurriedly summoned away by telegraph, and our journey cut short, I feel sure we should have got to the top or perished in the attempt.

On my third visit, in 1893, I was, it is true, more successful in the bare fact of ascending the highest summit. But the spirit of Durmitor revenged itself for such a desecration of its shrine by drenching me with rain and freezing me

with wind, and—what was worse—blotting out from my view everything more than five feet away.

Of this final attempt on Durmitor let me now give some account. The name Durmitor is, strictly speaking, the general name for an intricate mass of summits, of which twelve rise above 6,500 ft., and of which the highest, Čirova Pećina, boasts a height of 8,147 ft. above the sea. The suffix 'tor,' though recalling the Devonshire 'Tor' and the Italian 'Ruitor,' occurs elsewhere in the district as a mountain name—as, for instance, Visitor. The Durmitor group is not visible at a distance to the south and west, and, though I had twice before travelled along the Duga Pass not far away to the west, it was not until 1893 that I obtained my first view of it, in the Sandjak of Novi Bazar in Turkey. I had come north-west from Novi Bazar through lofty table-lands and picturesque river gorges, and from the road near Plevlje a lofty mass of mountains, towering in the distance above all else, was a striking object in the view. Returning to Montenegro through Foča and the mountain defile of the Drina, I had passed to the north and west of the range over the lofty upland pastures—3,000 to 4,000 ft. high—which extend from the Tara to the Piva, and out of which Durmitor rises, and had at length reached Nikšić, in the centre of Montenegro. Neither the luxuries of civilisation and the Court—for the Prince has a small house here—nor drives over the plain of Nikšić, nor fishing excursions organised by his Highness (where I have seen 250 river trout netted in ten minutes) could keep me long from Durmitor.

So, on October 1, Mileta and I started off from Nikšić, and a long day's march to the north brought us to Šavnik, a little village, 3,500 ft. or more above the sea, beautifully situated where two rivers meet. The school-house made an excellent encampment, which was all the more appreciated as on the following day came a terrific thunderstorm and a deluge of rain. The sun shone on the morrow, and, after a gradual ascent of an hour to the summit of Ivica, 6,000 ft. high, I at length came in sight of Durmitor, at the little village of Bukovica, lying in an Alpine valley 5,000 ft. above the sea. The mountain mass was very imposing from this side; but as the best route up it was said to be from the east, we skirted the mountain, and in five hours from Šavnik reached the small village of Zabljak. It lay in the middle of open grass lands, just under 6,000 ft. above the sea. Immediately to the west rose in a majestic semi-circle the various peaks of Durmitor. At their base was a dense

forest, interspersed with grassy glades. The school again proved the best camping place—not this time on account of the rain, but because of the cold, which in this exposed situation was extreme. It was almost impossible to keep warm that afternoon or evening. Even inside the school I had to dine wrapped up in rugs, and bed was the warmest place to be found.

Mileta had made arrangements to ensure my ascent of Čirova Pećina the following day. He himself preferred to remain below, but he had secured three Montenegrins to be my guides. The morning proved very misty, and extremely cold. I was determined, however, not to be balked a third time, and so at 5 A.M., before daybreak, we set off—I on horseback, they on foot.

Our path led for two hours through thick forests, ascending gradually at first. The mist soon turned to heavy rain, which penetrated even through the fir trees. Before long the slope grew steeper, the trees fewer. Riding was no longer practicable. Ascending steeply over grassy boulder-strewn slopes, I found myself at the mouth of a small valley, which apparently led into the heart of the mountains. Up this valley, four hours from Žabljak, two or three deserted huts of loose stones gave a moment's shelter from the rain, and here I left my horse. The wind had now risen, and was blowing a hurricane. The drenching rain had long since wetted me to the skin. Leaving the huts, we made our way up the stony slopes. Worse and worse grew the weather, the wind stronger, the rain heavier, the mist denser. At last the Montenegrins took refuge under a rock, and seemed disinclined to move. They assured me that it would be quite impossible to stand in this wind higher up, that there was nothing to be seen if we went, and that it was better to turn back. Ascertaining, however, that they could find their way to the top and back in spite of the mist, I decided to continue. At first I had to go alone; but seeing me bent on carrying out the mad idea—as they thought it—of ascending the mountain, they one by one rejoined me. We made our way laboriously over boulders and shale to what appeared to be a col. We then followed an arête—at least, such I imagine it was, from the force of the wind, which at times obliged us to crouch down and anchor ourselves to the rocks, and the seething mass of white mist on each side. The rocks were wet and disagreeable, but the scramble was not difficult. Before long—forty-five minutes from the huts—I found I

could get no higher, and they assured me it was the top. At last, then, I had reached the summit of the highest mountain in Montenegro.

Nothing but surging mist was visible, and the wet rocks at our feet. Half a minute was long enough to stay there. The temperature was too low for comfort. We beat a hurried retreat the way we had come, and rejoined my horse at the huts. We raced back on foot in two hours to Žabljiak, where we arrived wet through at midday. The baggage had long since gone forward. Mileta alone was waiting for me. A hospitable Montenegrin, however, lent me a bed while my clothes were dried, and in the afternoon Mileta and I started to ride back to Savnik. It was still raining hard, and blowing a gale. It was getting dark when we reached the top of Ivica. We were enveloped in a thick mist. The track was impossible to find; there was no habitation near; and had it not been for a shepherd in a sheepfold, across which we accidentally stumbled, we should probably have spent the night in the open. We were put back in the right path, and eventually I reached Savnik and my baggage, wet through for the second time, but with the comforting reflection that at last I had been up Durmitor.

So much, then, for the mountains of Montenegro. So far as Albania is concerned, I have no mountain ascents to relate. Of the intricate chains of the Prokletija I have already given you some description. But to get to Gusinje and ascend any of the peaks remains yet to be done. Two Englishmen alone have reached that town—one, fifteen years ago, just escaped with his life; the other arrived there in safety five years ago. To get away he found more difficulty. The chief men debated whether they should kill him or not; he sat all day in the inn with his revolver cocked and lying on the table at his side. The innkeeper turned the scale. True to the strict traditions of Albanian hospitality, he announced that he and his family would avenge his guest, if anything happened to him. The others gave way, and the Englishman was allowed to leave unhurt. In 1893 I tried every means of getting into Gusinje and out again, but failed.

To one other mountain district of Albania—Rugova by name, near the Eastern Montenegrin frontier—I endeavoured to penetrate. I was told that it was a single mountain, inhabited by a savage tribe, and could only be approached by a narrow track. One Albanian I met, who

had spent a night in the place in terror of his life. I made one attempt to get, at any rate, a view of the mountain from the Montenegrin side of the frontier. With due escort I rode from Andrijevica up the valley of the Lim, which flows through fertile Alpine scenery from Gusinje. At one point a tongue of Albania crosses the track; and for the twenty minutes we were on the Turkish soil the Montenegrins unslung their rifles and held them ready across their saddle-bows. But when I reached the foot of the hills from which Rugova might have been seen, so many difficulties were raised that I had to abandon the idea. In 1893 the whole of North Albania was in an unusually disturbed condition. The various tribes among whom the mountains are divided were at daggers drawn with each other. The blood feud which universally prevails was unusually rampant. To my great regret my hopes of ascending any of the lofty Albanian peaks were that year doomed to disappointment.

In Albania, therefore, remains a wide field of unexplored mountain country, less known, according to the most competent witnesses, than the interior of Africa. The chief difficulty lies in access to the peaks. To reach them depends on the good-will of the tribes. To gain this, time and patience are requisite. With these two qualifications there should not be insuperable obstacles in the way. The mountains of the Hoti and Klementi, of Dibra, of the Mat country, and of Ljuma may yet be ascended for the first time. And if my paper should stimulate any member of this Club to investigate the mountains of Montenegro and Albania, it will not have been read in vain.

NOTES ON OLD TRACKS.

BY DOUGLAS W. FRESHFIELD.

BEHIND THE BERNINA.

I.

A MOUNTAINEER of a quasi-theological temperament recently recommended mountaineering as an excellent substitute for going to church. I am not disposed to disagree with him. But though doubtless our pursuit is capable of satisfying the religious emotions, I hardly think it owes its origin to this source. Two still more elementary or primitive instincts of human nature seem to me to lie at the root of mountaineering. There is the desire of every properly constituted child to get to the top of the nearest mound or sand heap, and then to roll down again. There is also the craving of the intelligent infant to

get to the other side of things. In the case of the healthy adult these longings are satisfied by peaks and passes. There is more excitement and exhilaration in the peak; but it may be maintained that to a refined taste there must be a more lasting and subtle enjoyment in the pass. The approach to a crest which has long barred our range of vision is always fraught with a dramatic interest. There is the practical question of the nature of the ground, slope or precipice, on the other side. There is the pictorial interest of the new landscape which is suddenly unfolded as the earth drops from under our feet. The descent into a strange valley through a landscape differing in colour, in expression, in features, in foliage and in fertility from that we left in the morning, among people of another race and language and villages of a distinct architecture, condenses into the smallest possible space of time some of the most delightful sensations of travel.

Yet of late years this curiosity as to the Beyond seems to have lost something of its force as an element in mountaineering. It has become a commonplace to remark on the rarity of any taste for passes, for wandering across country by high-level routes. It is alleged of some of the younger generation that they scramble, but they cannot ramble. The pleasure of investigating bye-corners of the mountains, of learning a new valley, does not attract them. 'We don't care for *new* places,' murmurs some crack-climber. But surely he forgets that all old places were once new. It is more prudent to lay down a cellarful of wines than a single bin!

Few districts can be better than the Engadine for observing this change in the spirit of not a few Alpine visitors. One may meet there climbers and travellers of quite average intelligence who have never seen the other side of the Bernina, or been in Val Masino. They talk of Val Malenco as if it were as remote and uncivilised as Suanetia. They lose a great deal in fine scenery and climbing, and I shall try in the following notes to convince them of their loss by giving some further particulars of a region I have known since 1862.

'The old order changes, giving place to new,' the poet tells us. Striking indeed are the changes that force themselves on the notice of the Swiss traveller. Before I start once more on a tour of the Bernina, let us, as the tombstone says, 'halt and cast an eye' over the landscape of the Ober Engadin after an absence of some twenty years. Promiscuous building has made havoc with the homely charms of the Lake of St. Moritz. The boulders on the shore are plastered with advertisements of—*horresco referens*—an English newspaper. A gigantic tin hand—it might be a cheap glover's sign—points to a shed called a Casino. Hard by an Italian architect has perpetrated an ignoble compound of a campanile and a pagoda. An unfinished row of booths, a little Vanity Fair among the mountains, connects barrack-like hotels, the bare spaces round which are either converted into a bad imitation of town gardens, or littered with straw and waste paper and *Einspänner*. When we come in sight of Pontresina it is hard to recognise in a long line of cosmopolitan caravanserais the once typical twin Engadine hamlets. The top of Piz Languard has been levelled, railed round, and provided with a profusion of little benches and tables, at

which hot drinks are supplied from a shed hard by. The original purveyor was not long ago found dead, killed by a fall between his place of business and his sleeping quarters—Georgy's Hut—a few yards below. But he has now a successor. The platform is generally in the possession of a crowd of Germans wrapped in Inverness capes. 'Kolossal,' 'Pyramidal' are the mildest epithets that meet the ear.

But after a time, if the traveller cannot reconcile himself to the changes, he finds that they are in the main superficial. The Alps are happily built on too large a scale to be easily spoiled. Man's worst—additions such as would ruin Lynton or the Lakes—may easily be overlooked on the watershed of Europe. The charming view from the Ober Alpina above Campfer across the Maloya to the Bregaglia mountains has not suffered. The snow peaks from Alp Ota or the Diavolezza Pass are still sublime. The crests of Piz Ot and Piz Julier are unimproved and generally untenanted. The village street of Pontresina yet shows many vistas of wide-doored houses, quaint turret windows, and elegant iron balconies, often gay with flowers. Even the bazaar of St. Moritz proves on a wet day to be redeemed by some too fascinating curiosity shops. Since the Germans walk in capes it is not difficult to arrive before them on Piz Languard. Let me note, by the way, that the published Languard Panoramas of the guide-books are far from exact; Mont Blanc is *not* visible, but the top of the Weisshorn is, and may possibly have been mistaken for the monarch of mountains. The peak usually set down as Monte Viso is not that summit, but, I think, the Ciamarella in Val di Lanzo.

If the landscape of the Engadine remains substantially the same, so too do the people. 'Dicker Diebe als die Zigeuner' (stouter rogues than gypsies) a Basel professor rudely called them in the seventeenth century.* But his printer had to apologise handsomely for the libel. He would be not only a rash but a somewhat prejudiced man who repeated it to-day. The Engadiners were never deficient in business qualities, and these they have developed as fortune favoured them. A common phrase hits exactly, I think, the present state of things: 'They know how to charge.' Much communication with strangers has given no foreign polish to the *Einspänner* coachmen. They drive as casually and answer as grumpily as in old days. 'Jetzt kein mehr Reklamation,' shouted one to a lady who had asked him not to drive in the thick of his comrade's dust. Of the guides I saw little myself; but the best judges allow that two or three are first-rate, and hold that the mass are mediocre. The charges for quite moderate expeditions have waxed higher and higher; and, perhaps partly in consequence, when the weather is not favourable for high peaks the street benches are lined with the Unemployed, and beards wag thickly in the *Bierhalle*.

* See the Rev. Canon G. F. Browne's article in the *National Review*, August 1883. To the current number (May) of the *National Review* Canon Browne (now Bishop of Stepney) contributes an interesting speculation on the physical features of the Ober Engadin in the Middle Ages, and the probable effect of extinct lakes on the highways of traffic. My personal opinion is that the evidence brought forward shows Pons Saracenus to have been a mediæval scribe's version of Pontraschin, the Romansch form still in local use.

But what of the visitors? How have they changed since the days when Gredig and his family kept half a dozen rooms for the strangers who came once or twice a season, and Badrutt did not know the look of a circular note?

In a village where thirty years ago the gathering together of two or three English was an event there were last year 220 guests feeding as one at a single hotel. Royalty and republicanism find luxury at St. Moritz. The world and the stage congregate mostly at Maloya. At Pontresina we find plain, conventional folk, neither famous nor notorious, who enjoy out-of-doors life according to their bent and powers; who do their Languard or their Corvatsch, their Bernina or their Crast' Aguzza, as they feel inclined. Not that the place is without a few Alpine oddities. I remember a company of mild-eyed, melancholy golfers who drove daily in an omnibus down to the flats of Samaden. This sect affects not to recognise mountains, and one of its members was authentically reported to have refused to learn the names of the Roseg summits on the ground that it was scarcely worth while, since, as he understood, the snow peaks melted every year and fresh ones came up in spring in their place. A few youths, limp and languid on week days, proceeded to church on Sunday morning in frock coats and silk hats, lamented the rarity of dress clothes of an evening, and generally behaved as if they were inmates of a Scotch water-cure establishment. Occasionally a 'serious climber' put in an appearance, and departed, leaving behind him an *obiter dictum* that 'there was nothing, as far as he could see, of interest in the Bernina.' This, being interpreted, proved to mean that he had found nothing worthy of his gymnastic powers. The result seemed to us in part due to his always waiting to make his start for a perfect day, with a falling barometer.

Once or twice, perhaps, in the height of the season Pontresina suffers from an incursion that makes us blush for our country—a miscellaneous and misconducted assortment of 'Arrys and 'Arriets, who rush violently up and down the ice stairs at the foot of the Morteratsch Glacier with screams such as we associate with the sandpits on Hampstead Heath. But these revels are happily exceptional: the Engadine is too far from railways to attract many cheap trippers. It is spared another form of congregational revelry. The promoters of Union Congresses prefer Grindelwald, where, let us hope, Mr. Whympfer may always be at hand to subdue their excessive gaiety by a lecture on glacier theories and Alpine catastrophes.

I might go on, but it would hardly be right to occupy any more space in these pages with the humours of an Alpine centre. Let us look at the other side of the picture. The mountaineer and Nature-lover in the Engadine find as a set-off to modern drawbacks not a few modern facilities provided for them. The organisation of the great hotels is excellent, and if the climber is not revered, as he was once, he is treated with the most humane tolerance. He finds fair inns at the foot of the Morteratsch and Roseg Glaciers, good beds and food (much too high-priced) on the Diavolezza Pass. The Italians have established a hut—perhaps a little more convenient than the Fellaria

chalets—close to the Scerscen Glacier. Another hut facilitates the ascent of the Forno peaks and passes. Well-planned terrace paths lead right and left from the Surlei Fuorcla to Sils-Maria and St. Moritz, and give a succession of picturesque views of the chain of lakes. On the water itself boatmen from Como and even Venice ply their trade. A sail down the Silvaplana See shows the Upper Engadine in quite a new and perhaps its most romantic aspect, and is very refreshing after a warm walk over the Fex Fuorcla.

Under what heading shall we classify the teahouses that now dot every hillside? The smaller village capitalists have realised that 'Pension' fare does not fully satisfy either German or English appetites. The one must have more beer, the other more tea. With characteristic enterprise they have rushed to supply the demand. The Engadine is now a land in which it seems always afternoon tea. Everybody 'five-o'clocks.' About that hour the woods and paths of St. Moritz are brightened with Watteau-like groups of fair faces and gay costumes. The African lion sits down with the Alpine lamb on the lawn of the Restaurant Alpina. Ropes and ice-axes seem almost as much out of place as they might in Rotten Row. Yet the contrast is piquant, and the tea is generally good.

A sign of the times at Pontresina, of the extent to which scrambling has been accepted as the essence of mountaineering, is the invention displayed in the search for decayed rock-teeth, and the importance attached to their ascent. You hear more of the Blumen and the Schwestern than of the Crast' Aguzza or Piz Badile. 'The Sisters' acquired an unhappy notoriety this year by luring a German climber to his death. They are three eminences on the rocky spur of the range of Piz Languard, which immediately overhangs the village and threatens it with stone avalanches. The climb undoubtedly has picturesque merits. If you are not too careful to take the easiest way you may give a neophyte the pleasure of dangling by the rope on a highly tilted rock-face, of jumping (like the hero of one of the illustrations to Mr. Whymper's 'Scrambles') across a gap in a very narrow ridge, of climbing by cracks imperceptible fifty yards off a cliff of perpendicular aspect. These delights appear to move—in prospect at any rate—the hearts of many ladies, and an escort over 'the Sisters' is a compliment much appreciated by the sex. When the crags are dry and free from fresh snow the ascent is quite safe for any properly roped and constituted party. But the right track is not always plain, and a fall almost anywhere must be fatal. After the recent catastrophe further warning ought to be superfluous. But it may be as well to repeat the opinion expressed before the accident by the old climbers who escorted my family. We all agreed that few should venture on the passage without companions, and no novice except in company of, and roped to, an experienced mountaineer.

The tariff charge for the ascent (20 francs) is excessive, and by tempting tourists to dispense with guides may be a source of peril. It is, I think, desirable also that some notice should be placed on the crest at the Schafberg end, where the path stops, that the rocks beyond are dangerous for solitary or inexperienced persons.

The ascent of Piz Julier (11,106 ft.) is an excursion that deserves to be more frequently made. The mountain has two ridges, one of which connects it with Piz d'Albana; the other falls towards the road of the Julier Pass. Between these rises a short spur. A track marked by stone-men leads up to the rock-face between the spur and the Julier ridge, and gains that ridge some two or three hundred feet below the top by a steep gully, generally full of snow or ice. A slip in this gully might cause damage, and there are one or two corners 'nur für Schwindelfreie,' as the handposts in Tyrol put it. The climber of experience will not need a guide, but one should certainly be taken by tourists. A second route, more arduous and involving some rock-climbing, preferred by mountaineers, is to ascend by steep grass slopes and a tiresome gully from Val Suvretta to a gap N. of the lowest point in the ridge falling to Piz d'Albana, cross a wild hollow full of monstrous mountain ruins to the central spur, and climb along this to the top. A snow-storm prevented me from completing this ascent; the lower part is unpleasant, owing to the rottenness and looseness of the rocks.

The summit has also been reached by the Suvretta ridge, by the face between it and the spur, and by the glaciers which lie on shelves on the E. face. Despite their accessibility the rocks and precipices round the top are extraordinarily bold and large in scale for so moderate a peak. The distant view is magnificent. Piz Bernina and Piz Roseg are seen to the greatest advantage. The basins of the Fex and Forno glaciers are spread out in full view, backed by Monte della Disgrazia. To the W. the great towers of the Bregaglia—Cengalo and Badile—spring in magnificent curves from the deep vale of Chiavenna.

But it is time I left the Engadine and justified my title by getting 'Behind the Bernina.' My centrifugal force—or old-fashioned weakness—very soon led me with François Dévouassoud to the last chalet on the Poschiavo side of the Canciano Pass. Thence we walked over the glaciers of Piz Scalino (10,925 ft.) to Chiesa. The traverse was invented by Mr. Tuckett many years ago. It is 'without interest' from the climbing standpoint. The views, however, are extensive and admirable. In the range between Piz Scalino and the Val Tellina stand two bold rock-peaks, the Cima Painale and Cima Vicima, which are not referred to in the 'Alpine Guide,' and have never been climbed by Englishmen, though, according to local information, they have succumbed to Italian climbers.

Two days later we stood on the top of Monte della Disgrazia. With regard to this mountain a popular fallacy is maintained by the guides of the Engadine. It is assumed that the proper starting-point for the ascent is the Forno hut, and the proper tariff 150 francs. A mountaineer so active as Sir Seymour King found the expedition taken in this way very lengthy and laborious. It is only needful to look at a map to see that it must be so, since it is necessary to cross a lofty range in order to get at your mountain. To any one who can endure to visit an Italian valley there is no need for this not very profitable 'Grat-Wanderung.' At Chiesa, in Val Malenco, a capital inn, in a lovely situation, and good guides may now be found. The direct walk up

from Chiesa is, in the lower portion, shady and agreeable. Near the Alp Rali copious springs of ice-cold water burst out of the hillside; these are the drainage of a glacier lying high up on the flank of the Disgrazia. Something remains for an explorer in this direction. The hut on the Passo di Corna Rossa is in a splendid position for a sunset view. On one side the eyes range to Monte Rosa; on the other they command the green slopes and bright villages of Val Tellina.

In recent years the Italian guides have varied the ascent from the Sasso Bisolo Glacier to the top by going straight up the crags from a point some hundred feet below the saddle. This is, no doubt, the shortest climb when the rocks are free from ice. Heavy snow forced us to stick to the crest, which must always be the more beautiful way. The step-cutting can be laborious, and on a windy day might be very disagreeable. The views down the precipice on to the torn glaciers on the Val Malenco side are superb, and the ridge, though not in the least dangerous in ordinary weather and with common care, is narrow enough in places to thrill persons of sensibility. The top of the Disgrazia is all a rock peak should be—a naked crag held up by converging ridges of the most savage aspect. The crest that stretches to the southern pinnacle, broken by steep teeth and laden with loose boulders, is a peculiarly splendid specimen of mountain structure. It has only once been traversed, by Mr. Still and Mr. Pratt Barlow in 1875. We were on the peak on the hottest day of the year, when the thermometer stood at 98 degrees in the shade at Milan. Lombardy was veiled in golden heat haze, but the green hills and vales of Como, and the whole company of the snowy Alps from the Grand Paradis to the Weisskugel, were basking in clear, shadowless light. After a month in the Engadine, of such panoramas as that from Piz Languard, where the lower peaks are grey and gaunt, and beneath the snow line the prevailing tone of the hillsides is a rusty brown, the glorious greenness of the middle zone of the Alps on the Italian side was very grateful to our eyes. The Disgrazia seems almost to overhang the meadows and forests of Val Tellina. I was reminded of the view of the Mingrelian uplands from Tetnuld, so close was the juxtaposition of snows and pastures. Not a breath of air stirred. Yet fifty feet below us we saw a record of the fury with which at times the blasts beat on this exposed summit. The torn and bent metal roof of a hut which a daring Italian had induced the local guides to erect lay beside a formless heap of broken walls on the western rocks.

We were back in time to drive down to Sondrio and spend a pleasant evening under the vines and oleanders of the ever-hospitable Hôtel de la Poste.

I subsequently, in company with Mr. C. A. V. Butler and François, revisited my old haunts in Val Masino. This district has a curious distinction. It has proved a stumbling-block to map-makers. Even the Dufour Atlas misplaced one of its passes, and made a mess of its nomenclature. The new Italian Survey is very far from satisfactory in its representation of the details and glaciation of the main ridges. It is to a private individual, Count Lurani, that mountaineers owe the only trustworthy and exact delineation of the southern slope. I have

ventured to reproduce here the main part of the sketch-map he issued with an interesting account of his scrambles in 1882. We crossed from Maloya to the Baths by the Casnile and Zocca passes, a pleasant walk of 10 hrs. It leads through fine glacier scenery and is free from difficulty. The Zocca Pass is so frequented by smugglers that the *doganieri* are under orders to visit it periodically. Yet Mr. Comyns Tucker once found difficulty with a Bergschrund on it, and smugglers seldom risk Bergschrunds. The fact is that there are two gaps; the westernmost appears to be the pass to any one ascending from Val Masino, and this is defended on the N. side by an ice slope and crevasses. A hundred yards or less further E. the ridge can be gained from both sides by easy rocks, and this is where the people of the country cross. The rock scenery in the descent to Val di Mello is very astonishing to travellers coming from the Engadine. There could hardly be a more complete contrast than that between the shallow, smooth-sided dales of Fex and Fedoz and these deep trenches, hemmed in by cliffs and pinnacles of extraordinary height and abruptness. On a warm afternoon the bottom of Val di Mello seems unattainable, though the track does not lose any time in needless zigzags.

It has not, I think, been noticed in these pages that an easy way has been found up the Cima di Castello (formerly the Cima del Largo) from the head of the Albigna Glacier. The ascent from the Forno Glacier, first made by Mr. Comyns Tucker and myself, includes an ice slope some of our followers have thought steeper than that of the Gussfeldt Sattel. Mrs. Main has photographed the Albigna face of the peak.

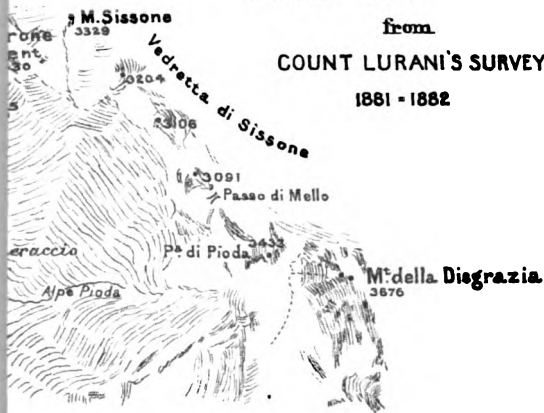
Years have not greatly altered the Baths of Masino. The solitary house in the forest under its horse-shoe of granite precipices has a curious fascination for the few Englishmen who have reached it. The beech-woods, the lovely southern ferns, the bright brooks and waterfalls give a romantic charm to the stern heights that shut out equally the heat of the plain and the frosts of the Grisons. The near walks are not many, but there is a fine view of the Disgrazia to be had 10 min. from the house. The Italian Alpine Club has pointed out the way by red marks.

A hut has been built 3 hrs. above the Baths for the ascent of Piz Badile. We did not think it needful to use it, nor, as François had, with Mr. Coolidge, made in 1867 the first ascent of that peak (when it was called the Cima di Tschingel), did we take a local guide.* But François's memory proved defective, and we spent a humiliating number of hours on a climb that more active mountaineers—such as Mr. Garwood and young Imboden—have done in half the time. It must be said for us that we lost an hour by attacking Dr. Minnigerode's chimney, which was impracticable in the state in which we encountered the mountain. Our predecessors found the rocks wet. An intensely hard frost, which had frozen deep into the ground even round the Club hut, had converted all the moisture on the peak into ice. In this state of things I thought the rock-climbing extremely, once or twice perhaps excessively, interesting.

* *Alpine Journal*, vol. iv. p. 51.

The Glaciers
of
VAL MASINO

from
COUNT LURANI'S SURVEY
1861 - 1862



di 1.75 000

Chilometri

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The following directions may be useful to after-comers:—From the glacier W. of the summit strike the foot of the S. buttress—which is not marked on the new Italian map—close to its lower end. Climb by easy flowery shelves to the crest and keep under this on the E. side by ledges sometimes narrow and overhung but nowhere difficult. The top of Minnigerode's chimney, which falls to the S.E. glacier, is soon passed. The ledges broaden out as the angle, between the buttress and the main mass of the peak is approached. Here there is a choice of routes. The trough in the angle is the most obvious, and, when not icy, probably the easiest. But there are smooth places which we found nasty. The last climb to the great tooth of granite that dominates the crowning ridge is comparatively simple. In descending we kept more to our right, nearer the top of the buttress, to avoid ice. We had to cross one or two places I thought difficult. We might possibly have avoided them by a middle course. We spent nearly 8 hours in all away from the hut, including an hour or more on the top.

The view from the summit of the Lake of Como as far as Menaggio, and again near Argegno, suddenly revealed to us, as a passing mist swept off, was most unusual and beautiful. Striking too was the vista along the lakes of the Ober Engadin, and the peep of the roofs and chestnuts of Promontogno, cowering apparently under the northern cliffs.

I had never explored Val Codera—the valley which descends between the westernmost spurs of the Bernina group to the Lago di Mezzola. Has any member of the Club? To descend through it to the level of the Lake of Como, from the snows to the olives, promised to be a walk after my heart. The idea was encouraged and finally adopted when we found on the outer wall of the Club-hut a notice that the 'Via alla Stazione; Novate' was indicated by red triangles. The marks guided us most efficiently across the alp westwards past several gaps which we might easily have mistaken for the pass to a narrow grassy hogsback. The extraordinary beauty of the western view was beyond description. We sat down enchanted to appreciate its details. Close at hand the wild ranges of Val Codera rose in noble curves to bold rocky summits. Italian hills, delicate in modelling and robed in soft greens or blues, according to their distance, filled the middle of the picture. High on the horizon the Pennine and Oberland snows swam clear but soft in 'a golden air.' This pass—its height is given as 8,629 ft. in the new maps, but no name is attached to it—cannot be more than 3 hours' walk from the Baths, and would be an agreeable excursion for their visitors.

The descent began by a grass ledge. After a few yards this was suddenly closed by overhanging rocks. François, who was first, appeared to us to plunge down a precipice. He answered our criticism by pointing to the red triangles. They indicated the only means of advance. It was requisite to go down a dozen feet of nearly vertical rock by the help of two grass tufts, and then for several yards to walk across a horizontal crack which gave foot-hold varying from 2 in. to nothing. Nominal support—help in balance—could be gained at first by digging axes into grass overhead; further on hand-hold was obtainable.

François walked across without a moment's hesitation, but we did not despise the rope. This 'mauvais pas' would not, perhaps, trouble younger cragsmen. It came upon us unprepared and when somewhat tired. But to indicate a route including such an obstacle to unsuspecting tourists as a Station Path is surely rash. A practical joke that may lead to fatal results should only be resorted to under exceptional circumstances—as, for example, in the case of an hotel bore. There can be little doubt that in this instance the Milanese section entrusted their paint-pot to a conscious, if unconscientious, humourist; for we found afterwards that he had continued his triangles through the villages, along the high road, and finished up only on the ticket office.

The remainder of the descent down steep rocks and loose shale to the first alp was straightforward. A zigzag path left of the stream (not right, as marked on maps) leads into the young pine forest which entirely clothes the head of Val Codera. There is soon a picturesque view up a side valley to the left towards the fine peak of Monte Ligoncio (9,948 ft.). This summit and Monte Droso (9,668 ft.), the peak opposite it on the range between Val Codera and Chiavenna, should be climbed for their views. Mr. Garwood knows the latter, which is very conspicuous from the Lake of Como.

Near a summer hamlet of stone huts the stream is crossed to the right bank. The middle portion of the valley is bare and the path stony. Stones are everywhere. The rain storms that visit the mountains at the head of the Italian lakes have poured torrents down every trough in the hills, rent their sides, and spread ruin over their hollows. The landscape is consequently more interesting to the physical geographer than to the lover of the picturesque. Where the valley curves southwards stones become less prevalent, and green meadows and chestnuts refresh the eyes. The village of Codera lies in a romantic situation on a sloping hillside above the head of the great gorge through which the torrent cuts its way to the lake. Beside the church stands an immemorial sycamore.

Our path—the only path out of the valley—proved to be one of the most singular and impressive in the Alps. It is in many places a mere groove cut in the face of a cliff, and without any parapet, above a sheer abyss. The gorge is closed in front by a green bluff crowned with cottages. In order to reach this long flights of broken stairs had to be climbed down and up again. Then the view opened on the purple slopes of Monte Legnone, still aglow with the reflection of the sunset. Over its edge the rising moon threw a pale light on the blue hills behind Gravedona. We forgot all anxiety about trains, the seventeen hours we had been afoot—everything but the vision before us, one of the most exquisite I have known among the mountains.

How interminable in the gloaming seemed the last zigzags! how deep and far the shining levels of Lago di Mezzola! The moon, sailing in the most friendly way just above the spurs of the Legnone, soon threw bright beams full on our path. At last we were among the lawns and fields and stone walls of the Vale of Chiavenna. Ten minutes more and we gained the high road and the village street of Novate. Good news met us. The last train to Chiavenna was due in

five minutes. A day of 18 hours, of many pleasures and no mishaps, was crowned by an excellent supper and beds in the Hôtel Conradi.

I trust these few notes may encourage more Englishmen to go to Promontogno and Val Masino, and explore thoroughly a district I have always found fascinating. Its fascination for me lies in the extraordinary contrast between the savage rock scenery and crevassed glaciers—the Bondasca glacier has of late years repulsed more than one party of capable climbers—and the lovely verdure close at hand. Promontogno and Soglio filled me with enthusiasm in 1864, and thirty years after I find I come back to them, as to most of my rather numerous *premiers amours*, with increased affection. The Grey Twins—Piz Cengalo and Piz Badile—we looked up to with such awe because Mr. Ball had called them inaccessible have lost nothing by being climbed; they have rather gained a personal interest. The vignettes of peak and waterfall in Val Bondasca improve by being lingered over on the off days which advancing years occasionally demand. Sitting by the Castle on the Wall—Castelmur—between the pines and chestnuts, the traveller realises, as it can seldom be realised, that he is sitting at the very gate of Italy—that gate which is barred as by a flaming sword to the Limited Company of Serious Mountaineers.

A NEW ASCENT IN THE SOUTHERN CARPATHIANS.

FOR several dreary months I was tied to the narrow cobbled streets of the 'city of pleasure,' Bucharest, situated in the middle of the huge Roumanian steppe 'where there is neither hill nor rock.' Even there, however, I enjoyed some few swiftly passing moments when the rare atmospheric conditions permitted a view of the 'white-wintered' tops of the Southern Carpathians. I can call to mind at least one glorious hour of delight when the Balkans on the south and the Carpathians on the north were visible in all their beauty of snow-white covering. Forced for many a month to live thus far from the mountains, it was with satisfaction that I joined in the annual summer migration Sinaia-wards, where King Charles's lovely château rears its red-tiled towers amidst the pine-clad heights of the Bucegi range. Behind, the Cepi, the Caraiman, and further on the Homul—the second highest peak in the Southern Carpathians—uprise in steep precipices. The range is of peculiar form. It runs about N.N.E., with an average height of between 6,000 and 6,500 ft. On the E. it falls abruptly in dark frowning cliffs with steep rocky spurs pushing out every now and again into the main valley. On the top extends a plateau for about six miles whose breadth varies from a quarter of a mile to two and a half. On the W. it slopes gradually down to the valley of the Ialomitza. It is therefore on the east face that the climber would find the best opportunities for indulging in his sport.

The heights of the different peaks are not yet scientifically measured. There exists an old map—made by the Austrian topographers during the occupation—but it is incorrect in several respects and especially in

the measurements of the peaks. Roughly speaking the Homul is about 8,500 ft. high, the Caraiman about 8,000, the Cepi, 7,500, and the Cleia—which is merely a spur running from the main range down to the valley of the Prahova on the E.—only about 5,000. From Busteni—now quite a fashionable watering-place—to Sinaia, about 7 miles, there is only one mountain path suitable for mules, and that is somewhat to the south of the latter place. Consequently, except for the people of Sinaia, there is a long stretch of hard high road to be covered before the ascent to the mountains can be commenced. The Roumanian peasants in the neighbourhood of the Carpathians cannot be called climbers. With the exception of some few shepherds and smugglers, they seldom make excursions to the mountains. As it is only within late years that the magnificent pine forests have been exploited, there are few of the welcome woodmen's paths that are so numerous on the lower slopes of the Swiss and Austrian mountains. More than once I have, after leaving the rocks, been obliged absolutely to chop my way down to the valley through the dense undergrowth of the forest.

In my reconnaissances along the east face of the Bucegi range, I had been struck by a bold rocky peak which stood at the base of a narrow spur of the great chain. On inquiry I found that it was called the Cleia—the hay-cock. Its slopes were decidedly steep all round, at an angle of about 45°, I should say, and, although there was a certain amount of wood running up the sides, it was broken by rocky terraces that almost encircled the mountain. Every peasant whom I consulted informed me that its summit had never been reached, and it may be imagined how welcome was the news. Immediately I set about examining it from the neighbouring eminence, and concluded that the best chances of reaching the top were afforded by a deep gully to the south of the Cleia. Thence several terraces trended out on to the east face of the peak, and I decided to try them, in the hope of striking at least one which would bring me either to the steep face or the narrow arête that runs up to the top on the N.E.

It would be wearisome to relate in detail the different attempts I made. Seven times I attacked the mountain and seven times failed. The terraces were deceptive in that they disappeared entirely or were broken by wet, slippery, pudding-rock gullies, dangerous to climb or traverse. After the fifth attempt I deserted them and attacked the precipice on the south face. This was tempting, inasmuch as down it there ran a cleft almost as far as the base. I had scanned the cleft with field-glasses, but could see no way of arriving at the point—some 20 ft. from the bottom—where the cleft became distinct and looked 'climbable.' In brief, I found myself one fine morning worming my way along the terrace at the foot of the precipice which towered above me in the most unpromising way. Arriving directly under the cleft, I found that it spread itself out into a number of cracks which were hardly big enough to admit my fingers, much less my body. Higher up these divergent cracks rejoined the cleft, which there seemed to become ample enough to afford good climbing; but the difficulty was to arrive at this point.

The rock before me was decidedly difficult. The crack which

offered the best handhold was, after all, but a slender support. The arms had to do all the work. It was of no use feeling about for footholds, for there were none. It was fatiguing work. With feelings of relief I reached the main cleft and, wriggling well into it, lay motionless, with hands and arms trembling, after the exertion they had just been called upon to make. In five minutes I was again upright in my chimney and scanning the chances of success. The sides of the cleft opened at an angle too wide for chimney-sweep climbing. Some 20 ft. up, a fallen rock was wedged into the chimney. To climb over it seemed impossible, but I concluded that there was a way under it. At any rate, it merited a close examination, and I advanced towards it. The climbing was fairly easy. There proved to be a narrow gap behind the boulder. I enlarged it by clearing away some loose stones and grass which were clotted there, and when this was done, progress could be resumed. Above, there seemed every possibility of continuing the climb without very great difficulty except at the top, where a huge rock barred the way. I sat on the level surface of my boulder, which formed a most excellent dining table although it was only 3 ft. square, and was hanging between heaven and earth, on the face of a precipice about 1,000 ft. deep. Refreshed by my meal I continued my way, and found that the 'going' was not pleasant. There was a good deal of dry slippery grass on the rock which had to be cleared away. It was not until I had been climbing for more than an hour that the base of the last great obstacle was reached. I was within 20 or 30 ft. of the top of the precipice, which in its turn was only about 100 ft. below the top of the Cleia. Surely there would be again a hole big enough for my body to pass through! Soon I was burrowing under the rock like a coal-miner. I had already tunnelled about 2 ft. when the head of my axe struck a rock. I cleared everything all round, and was mortified to find that a smaller boulder had completely shut up the passage. Nevertheless, I still continued, in the hope that there might yet be an opening wide enough for me; but when everything was cleared there was only a space about the size of a saucer, through which I could see the top of the precipice and the end of the climb. It was a good example of the 'slip 'twixt cup and lip.' There was nothing for it but to descend. I made my way down the rocky gully, with the disappointment of a sixth failure adding to my physical fatigue.

For the next week I did nothing but prowl round the Cleia, examining it from every point. With field-glasses I could see magnificent chimneys and gullies; but, unfortunately, they all seemed to begin quite out of reach of a climber. My repeated attempts to scale the peak had not failed to attract the attention of the country side. The peasants began to believe I was utterly mad, kind friends took care to tell me I should never succeed, and a shepherd in whose hut I slept one night, kept tapping his forehead in a way that was rudely significant. However, I was infatuated about my peak, and could not give up the hope of yet climbing to its virgin top. Having exhausted, as it seemed, all the likely routes on the south-east face, I reluctantly turned to the west side. I say 'reluctantly,' because it was towards

the W. that the summit of my mountain was connected with the Bucegi range. From the col thus formed to the top was only a matter of perhaps 200 ft., and although I knew that those 200 ft. must be very difficult climbing, yet it did not seem quite a fair way of attacking the Cleia; to my mind it was like taking my old enemy in the rear. The remembrance of six failures, however, overcame all my scruples, and I set off one morning with a determination again to put to the test the reputed impracticability of the peak. Arrived at the col or saddle, I stopped to examine minutely the piece of rock that lay between me and success. Towards the summit of the Cleia I found that the saddle kept narrowing very rapidly until it formed a regular razor of an arête. On each side were sheer precipices: 1,500 ft. on the one side and about 800 ft. on the other. I have seen some sharp ridges in my life, but I never saw one so like a wall as this. I gave myself the trouble to take some measurements afterwards, and found that 20 ft. down it had only increased 4 ft. in thickness. Beyond, only about 100 ft. away, rose my peak—'so near and yet so far.' Now I understood why it had never been ascended, and I at once came to the conclusion that, here as well as on the other sides, the difficulties were sufficient to stop a man. My razor-like arête was stopped by a 'gendarme,' or tower, of rock. To climb this tower seemed impossible, whilst there was little chance of turning it by descending on either side on to the face of the precipice. To convince myself by close inspection of the truth of a conjecture made after a somewhat distant examination, I made my way along the top of the arête straddle-leg fashion. I found things very much as I expected; but round the north side of the tower there was a way. Roped, and in company with two experienced rock climbers, it would, perhaps, have been possible to give it a trial; but I unhesitatingly decided not to crawl along the edge of a precipice, where hand and foot holds were, to say the least, rare, and where I had no means of taking precautions in case of a very probable slip. Sad at heart, therefore, and shaking my fist at the top, now so near to me, I turned my back on the peak, and sullenly descended the mountain side, on the way to my inn and to certain jeers.

A continuance of lovely weather, several successful expeditions, and some rather ungenerous remarks about my repeated failures, filled me with a desire to try my luck once again on the peak. This time I determined to spend every minute of daylight on the east and west faces. I started long before sunrise, and was well up on the terraces when the sun first struck the hillside. My wanderings and explorations were long and tedious, and it was not until after 2 o'clock in the afternoon that I halted before a grassy ledge which ran along a precipice of pudding-stone, beginning about halfway up and ending on the north-east arête, which I had never yet succeeded in reaching. It was a long time before I could make up my mind to trust myself to the strength of the grass ledge. It had an insecure appearance which was not attractive. Pudding-stone is notoriously a bad rock for climbing. When there are projections they are rounded and afford no hold. As a rule, too, it is very rotten, and, although it is frequently traversed

by ledges, generally of grass, yet they are mostly treacherous. However, it was a case of an ignominious retreat, or an attempt on the ledge, and I decided for the latter. I will not harrow the reader's feelings by a description of mine as I wormed my way along. Suffice it to say that I crossed. It seemed to me the 'jumpiest' episode in my life. More than once I thought that my ledge was about to give way entirely, for it trembled under my weight. Once over, I made a solemn vow never to touch that ledge again, and, unlike most vows made on the mountain, this has been religiously kept. I thus gained the arête, and was able to work my way up with a certain amount of ease. It was, however, a tiring scramble, and I went slowly. Gradually, but surely, I approached the summit, and all remembrance of the dangers I had gone through, and that still might be before me, vanished. Rather suddenly, I found myself on a small eminence on the arête, whence the way to the summit was plainly evident. A baby might toddle the rest, and I gave vent to my feelings of triumph in a shout that might have been heard at Sinaia. Mountaineers will smile when I tell them that all the difficulties I had gone through were below the line of vegetation, for my summit was covered with dense dwarf fir; but I can assure them that it had given me more trouble than any snow peak I have ascended, and the rock-climbing was certainly as difficult as the Riffelhorn from the glacier, or the Pillar Rock by the Ennerdale Valley route.

I was now on the top of the Cleia, a standing contradiction to the saying that ambition is never satisfied. But how was I to get down? On the E. there was only one way of arriving below, and that was by the ledge which I had renounced. The only other route with which I was in any degree acquainted was by the saddle on the W. But there, too, was an obstacle in the shape of the rock tower which had put an end to my former reconnaissance. I determined to examine it more fully from the east side, which, of course, I had not been able to do before. Before leaving the summit, I erected a sort of cairn, and left my name and the date. Remembering, too, the usual incredulity of the inhabitants of the valley in all that concerns mountaineers and their exploits, I felt that I ought to erect something that could be seen from below. For want of a better ensign, I left my shirt, stuck on a stout pole made of an old fir branch. It waved proudly in the breeze as I turned to descend. I found to my great relief that the tower was easy of access on the east side. I climbed to the top of it, and carefully made my way down as far as possible towards the arête. The view before me was rather terrifying. On each side were yawning precipices. I was seated on a shoulder of the tower, having beneath me 12 ft. of smooth 'unclimbable' rock, and below that again, the grim arête, looking nastier than ever. In order to get home that night, I must reach the razor-like ridge. I could not climb down, so there was nothing left but to jump the 12 ft. dividing me from it, or to make my way back to the summit, and spend the night there. A drop of 12 ft. is not much; but when the drop has to be made on to a narrow arête, where a bad landing or the slightest loss of balance is sufficient to hurl one some hundreds of feet below, it

begins to seem formidable. The sooner it was over the better. I tied my sack tightly round my body to prevent it swinging me off my balance, and grasping my ice-axe in one hand, I gathered myself together and jumped. There was a horrid momentary sensation of leaping into empty air, then came a bump, and I found myself lying along the arête in as fair and as square a position as could be wished. But, alas! my old and tried companion that had helped me out of many a queer place had slipped from my grasp, and was hurtling and whirling through the depths below. I made many an attempt afterwards to find it, and offered rewards to the peasants, but my ice-axe still lies rusting on the Southern Carpathians. Perchance, in years to come, it will be used as a proof that the Cleia was once a snow peak, and the favourite resort of mountaineers.

H. A. GWYNNE.

SCORESBY'S ACCOUNT OF AN ASCENT IN SPITZBERGEN.*

In the summer of 1818, I was several times on shore on the main near *Mitre Cape*, and landed once, in the same season, on the north side of King's Bay. Being near the land on the evening of July 23, the weather beautifully clear, and all our sails becalmed by the hills, excepting the topgallant sails, in which we had constantly a gentle breeze, I left the ship in charge of a principal officer, with orders to stand no nearer than into thirty fathoms water, and with two boats and fourteen men rowed to the shore. We arrived at the beach about 7½ p.m., and landed on a track of low flat ground, extending about six miles north and south, and two or three east and west, from the east side of which a mountain-arm takes its rise, terminating on the south with the remarkable insulated cliff constituting *Mitre Cape*. This table land lies so low that it would be overflowed by the sea, were it not for a natural embankment of shingle thrown up by the sea; indeed, from the seaweed and driftwood found upon it, it seems at no very remote period to have been covered by the tide. The shingle forming the sea-bank consists, in general, of remarkably round pebbles; many of them being calcareous, are prettily veined.

After advancing about half a furlong from the sea, we met with mica-slate in nearly perpendicular strata; and, a little farther on, with an extensive bed of limestone in small, angular fragments. Here and there we saw large ponds of fresh water, derived from melted ice and snow; in some places small remains of snow; and, lastly, near the base of the mountains, a considerable morass, into which we sunk nearly to the knees. Some unhealthy looking mosses appeared on this swamp; but the softest part, as well as most of the ground we had hitherto traversed, was entirely void of vegetation. This swamp had a moorish look, and consisted apparently of black alluvial soil,

* Reprinted from W. Scoresby's *Account of the Arctic Regions*, Edinburgh, 1820, vol. i. pp. 118-123, 126-130.

mixed with some vegetable remains, and was curiously marked on the surface with small polygonal ridges, from one to three yards in diameter, so combined as to give the ground an appearance similar to that exhibited by a section of honeycomb. An ascent of a few yards from the morass, on somewhat firmer ground, brought us to the foot of the first mountain to the northward of the Mitre. Here some pretty specimens of *Saxifraga oppositifolia* and *Groenlandica*, *Salix herbacea*, *Draba alpina*, *Papaver alpina* (of Mr. Don), &c.; and some other plants in full flower were found on little tufts of soil, and scattered about on the ascent. The first hill rose at an inclination of 45° to the height of about 1,500 ft., and was joined on the north side to another of about twice the elevation. We began to climb the acclivity on the most accessible side at about 10 p.m., but from the looseness of the stones and the steepness of the ascent we found it a most difficult undertaking. There was scarcely a possibility of advancing by the common movement of walking, for in this attempt the ground gave way at every step, and no progress was made; hence the only method of succeeding was by the effort of leaping or running, which, under the peculiar circumstances, could not be accomplished without excessive fatigue. In the direction we travelled we met with angular fragments of limestone and quartz, chiefly of one or two pounds weight, and a few naked rocks protruding through the loose materials of which the side of the mountain, to the extent it was visible, was principally composed. These rocks appeared solid at a little distance, but on examination were found to be full of fractures in every direction, so that it was with difficulty that a specimen of five or six pounds weight, in a solid mass, could be obtained. Along the side of the first range of hills near the summit was extended a band of ice and snow, which, in the direct ascent, we tried in vain to surmount. By great exertion, however, in tracing the side of the hill for about 200 yards, where it was so uncommonly steep that at every step showers of stones were precipitated to the bottom, we found a sort of angle of the hill free from ice, by which the summit was scaled.

Here we reeted until I took a few angles and bearings of the most prominent parts of the coast, when, having collected specimens of the minerals and such few plants as the barren ridge afforded, we proceeded on our excursion. In our way to the principal mountain near us, we passed along a ridge of the secondary mountains, which was so acute that I sat across it with a leg on each side, as on horse-back. One side of it made an angle with the horizon of 50° , and the other of 40° . To the very top it consisted of loose sharp limestones, of a yellowish or reddish colour, smaller in size than the stones generally used for repairing high roads, few pieces being above a pound in weight. The fracture appeared rather fresh. After passing along this ridge about three or four furlongs, and crossing a lodgment of ice and snow, we descended by a sort of ravine to the side of the principal mountain, which arose with a uniformly steep ascent, similar to that we had already surmounted, to the very summit. The ascent was now even more difficult than before: we could make no consider-

able progress but by the exertion of leaping and running, so that we were obliged to rest after every fifty or sixty paces. No solid rock was met with, and no earth or soil. The stones, however, were larger, appeared more decayed, and were more uniformly covered with black lichens; but several plants of the *saxifraga*, *salix*, *draba*, *cochlearia*, and *juncus* genera, which had been met with here and there for the first 2,000 ft. of elevation, began to disappear as we approached the summit. The invariably broken state of the rocks appeared to have been the effect of frost. On calcareous rocks, some of which are not impervious to moisture, the effect is such as might be expected; but how frost can operate in this way on quartz is not so easily understood.

As we completed the arduous ascent, the sun had just reached the meridian below the Pole, and still shed his reviving rays of unimpaired brilliancy on a small surface of snow which capped the mountain's summit. A thermometer placed among stones in the shade of the brow of the hill indicated a temperature as high as 37°. At the top of the first hill the temperature was 42°, and at the foot, on the plain, 44° to 46°, so that, at the very peak of the mountain, estimated at 3,000 ft. elevation, the power of the sun at midnight produced a temperature several degrees above the freezing point, and occasioned the discharge of streams of water from the snow-capped summit.

The form of the mountain summit which I visited is round backed, the area of the part approaching the horizontal position not being above a quarter of an acre. The south side, where we ascended, and the south-east are the only accessible parts, the east, north, and west aspects being precipitous nearly from top to bottom. What snow still remained on the summit was but a few inches deep, and appeared to be in a state of rapid dissolution; the sides of the hill were almost entirely free from snow. The masses of stone on the brow of the mountain were larger than any we had yet met with, the fracture was less fresh, and they were more generally covered with lichens.

From the brow of the mountain, on the side by which we ascended, many masses of stone were dislodged by design or accident, which, whatever might be their size, shape, or weight, generally made their way with accelerated velocity to the bottom. As they bounded from rock to rock they produced considerable smoke at each concussion, and, setting in motion numerous fragments in their course, they were usually accompanied by showers of stones, all of which were lodged in a bed of snow lying 2,000 ft. below the place where the first were disengaged. This may afford some idea of the nature of the inclination. Most of the larger stones which were set off broke into numbers of pieces, but some considerable masses of a tabular form wheeled down upon their edges, and though they made bounds of several hundred feet at a time, and acquired a most astonishing velocity, they sometimes got to the bottom without breaking.

The prospect was most extensive and grand. A fine sheltered bay was seen on the east of us, an arm of the same on the north-east, and the sea, whose glassy surface was unruffled by a breeze, formed an im-

mense expanse on the west; the icebergs, rearing their proud crests almost to the tops of the mountains between which they were lodged, and defying the power of the solar beams, were scattered in various directions about the sea coast and in the adjoining bays. Beds of snow and ice filling extensive hollows, and giving an enamelled coat to adjoining valleys, one of which, commencing at the foot of the mountain where we stood, extended in a continued line towards the north, as far as the eye could reach; mountain rising above mountain, until by distance they dwindled into insignificancy; the whole contrasted by a cloudless canopy of deepest azure, and enlightened by the rays of a blazing sun, and the effect aided by a feeling of danger, seated as we were on the pinnacle of a rock, almost surrounded by tremendous precipices—all united to constitute a picture singularly sublime. Here we seemed elevated into the very heavens, and, though in a hazardous situation, I was sensible only of pleasing emotions, heightened by the persuasion that, from experience in these kind of adventures, I was superior to the dangers with which I was surrounded. The effect of the elevation and the brightness of the picture were such that the sea, which was at least a league from us, appeared within reach of a musket shot; mountains a dozen miles off seemed scarcely a league from us; and our vessel, which we knew was at the distance of a league from the shore, appeared in danger of the rocks.

After a short rest, in which we were much refreshed with a gentle breeze of wind that here prevailed, and after we had surveyed the surrounding scenery as long as it afforded anything striking, we commenced the descent. This task, however, which before the attempt we had viewed with indifference, we found really a very hazardous, and in some instances a painful undertaking. The way now seemed precipitous. Every movement was a work of deliberation. The stones were so sharp that they cut our boots and pained our feet, and so loose that they gave way almost at every step, and frequently threw us backward with force against the hill. We were careful to advance abreast of each other, for any individual being below us would have been in danger of being overwhelmed with the stones which we unintentionally dislodged in showers. Having, by much care and with some anxiety, made good our descent to the top of the secondary hills, to save the fatigue of crawling along the sharp ridge that we had before traversed we took down one of the steepest banks, the inclination of which was little less than 50° . The stones here being very small and loose, we sat down on the side of the hill, and slid forward with great facility in a sitting posture. Towards the foot of the hill an expanse of snow stretched across the line of descent. This being loose and soft, we entered upon it without fear, and our progress at first was by no means rapid; but, on reaching the middle of it, we came to a surface of solid ice, perhaps a hundred yards across, over which we launched with astonishing velocity, but happily escaped without injury. The men whom we left below viewed this latter movement with astonishment and fear.

GLACIAL PROGRESS.

SINCE the appointment of the Sub-committee upon Glacier Observations another movement has taken place. Acting upon a 'Lettre d'initiative' from the writer to Professor E. Renevier, President of the International Congress of Geologists at Zürich in 1894, a committee has been formed consisting of a representative of each country concerned: the writer was requested, and consented, to act for Great Britain and her Colonies. In our case the 'Alpine Journal' forms, so far as room can be found in it, the natural organ wherein to record progress.

As regards our A. C. Circular, it would seem that sufficient time has not yet elapsed for many exact data to have reached us, with one very brilliant exception—that of New Zealand. Fortunately our President's Memorandum, dated June 1893, reached the Antipodes in time for the climbing season (our winter months, be it remembered), and was officially circulated.

Amongst the explorers of the Southern Alps are men not only mountaineers, but who are also greatly interested in these problems, shrewd observers, and efficient officers of the N.Z. Survey. We have the novelty of new excursions, combined with the determination of a series of positions upon which to found future measurements, and all this in mountain ranges till recently scarcely known. The writer will give a summary of this work (with great conciseness, the result of instructions he has received). In the absence of key maps, he omits tables, which would not be understood without diagrams of the various localities. So far as members of the Alpine Club are concerned, these will be found in publications contained in the Club Library, and referred to in the following paragraphs. The library at the Office of the Agent-General for N.Z., Westminster Chambers, 13 Victoria Street, S.W., can also be utilised.

In the year 1892 an exploration was made in the hopes of finding some practicable route for a road from the West Coast, Middle Island, N.Z., across the main range to 'The Hermitage.' Although this object was not completely attained, materials for a survey of the country were collected, and a map by Mr. C. E. Douglas, explorer, Westland, is published in the Report for 1893 of the N.Z. Surveyor-General, as also a sketch of the geological formations of Copland District and sundry inspiring views of glaciers and peaks. Messrs. Douglas and Cuttance describe the Copland, Lyttle, Strauchon, and Cuttance glaciers amongst other features of the scenery.

In the Report for 1894 Mr. Douglas gives an account of a survey of the Westland Alps, with the assistance of Mr. A. P. Harper, from November 1893 to April 1894. On this expedition a satisfactory triangulation was carried up several glaciers. In the case of Franz-Joseph Glacier, points in its neighbourhood and on the ice itself were determined in sufficient number to afford data for estimating its future movements and bulk. This will serve as a typical glacier on the north-west side of the range. Its 'snout,' 692 feet only above the sea,

is but four miles distant from the beach, in Lat. $43^{\circ} 25' 30''$ S., and Long. $170^{\circ} 10' 58''$ E. It has made great winter advance and summer retreat. Débris from lateral ranges have lodged in crevasses of the higher layers of ice, which further down have become the lower layers, the upper ice pushing over the lower, as is exemplified in photographs to be found in our library, showing itself in alternate clear and dirty ice. The upper ice overlaps and breaks off at the terminal face, as also shown in the photographs. Other illustrations and maps will be seen in the Survey Report for 1894, together with a text full of interest. Over one matter the writer has been much exercised. Mr. A. P. Harper gives, at page 77, a table of rates of ice movement during his stay. An average of his figures at different stations gives the daily rate as 154.2 inches. At page 73 Mr. Douglas makes a statement of considerable interest to students of ancient glaciers. He says: 'In valleys containing large glaciers I have always found four tiers of terraces, or old ice-lines, as if there had been four distinct periods. These lines keep a wonderfully regular distance from each other, and their inclination is very uniform, from, say, 4,000 feet to 600 ft. or 700 ft. . . . The larger the valley the more gentle the slope.'

Mr. T. N. Brodrick, C.E., sent a paper, accompanied with four maps, to the writer for communication to the International Congress of Geologists held at Zürich in 1894. This he had to render into French previously to its being read.

In the October number of the New Zealand 'Alpine Journal' is an abstract of this paper by Mr. Brodrick. Its title is 'Ice Motion of the Canterbury Glaciers.' The most important point of Mr. Brodrick's work is a triangulation and survey carried up the Mueller glacier, during which were determined, not only the position of stones on the ice relatively to stations on the huge lateral moraines, but the distance and bearings of many such blocks *from each other*. These positions were first fixed on March 29, 1889, re-determined November 14, 1890, and again December 3, 1893.

Here we have a beginning of great completeness, and as years pass by a record will be attainable of considerable historical value. The measurements so far showed (what has been found elsewhere) that the sides move more slowly than the centre; that the ice moves more slowly as it approaches the terminal face; that the current is varied by surrounding circumstances, such as bends of the glacier and, probably, the unevenness of its bed.

Its daily rate is not constant; a comparison of the rate for 1889-90 with that of 1890-93 shows a decrease of speed during the latter period. Here we ask, how as to *bulk* in those years? Fluctuations of the terminal faces of the Tasman and Mueller glaciers have been constantly remarked, but changes have not lasted sufficiently long to show if the ice is retreating or advancing. Captain Hutton, President of the New Zealand Alpine Club, states that about 1882 the Mueller glacier reached over the Hooker River to the side of Mount Cook, and sheep were taken over on the ice. Traverses were made of the terminal faces of the Tasman in November 1890, and of the Mueller in March 1889 and November 1890. Mr. Brodrick says that the

Hooker River so modifies the contour of the Mueller that the experiment has failed to demonstrate short changes satisfactorily, though these traverses will no doubt be of interest in the future. During a recent period all the Canterbury glaciers appear to have been in retreat, but latterly, and for a number of years, to have been stationary.

There is no evidence of ploughing up the earth and leaving it in ridges, and falling stones are in great measure stopped by lateral moraines, and do not reach the ice. Mr. Brodrick gives tables of rates of motion, and one of the areas of six glaciers, together with that of the sources of supply, as regards *névé*.

This Mueller glacier, flowing on the eastern side of the range, will no doubt show contrasts with the Franz-Joseph. No reports have reached the writer of the meteorology of the two regions. He has, however, asked for such. Also he has suggested that metal or wooden plates, with date and bearings stamped or burnt upon them, may be buried in the *névé* at different altitudes, in the hopes of getting at any peculiarities of motion.

It is not in our province to review work abroad for the present; but attention should be drawn to the notes of Mr. Percy Kendall in the 'Glacialist's Magazine' for October, November, and December 1894 upon Zermatt glaciers. And with regard to ancient action in our British Lake district there is a short suggestive article, by Mr. Marr, in the 'Quarterly Journal of the Geological Society' for February 1895 on 'The Tarns of Lakeland;' and one in the previous number, for November 1894, by Dr. Gregory, on 'The Glacial Geology of Mount Kenya.'

All this is better fortune than we could have hoped for so soon after our request was made known.

We have received some photographs from the Dominion of Canada, from India, and elsewhere, and we trust that work is actually going on, and will be communicated to us in the course of next winter.

We must recruit our numbers. Men with the energy of youth are wanted in each Colony. Sportsmen as well as scramblers can give us useful wrinkles. Volunteers to the front! MARSHALL HALL.

NEW EXPEDITIONS IN 1894 (*continued*).

[Contributors of 'New Expeditions' are requested to observe the following rules:—(1) To forward their accounts in the form in which they are to appear. (2) To prefix the name of the peak or pass from the best map, and the altitude both in *mètres* and feet in a parenthesis after the name. (3) To give the date of the ascent, and the names of the party. (4) To give exact references to any previously published descriptions of allied routes to which they may have occasion to refer. (5) To write the description with the best existing map before them, and to quote the figures of any measured point their route may touch. (6) To use always the points of the compass instead of the misleading words 'right' and 'left.' (7) To record their 'times' exclusive of halts. (8) To make their descriptions as brief as possible con-

sistently with the above considerations. (9) To write on one side of the paper only, leaving a large margin, and to begin a new sheet for each expedition.]

THE following new expeditions or variations of routes previously taken were made in 1894 by a party consisting of Mr. E. A. FitzGerald and Mr. W. M. Conway, with the guides J. B. Aymond and Louis Carrel, and the Gurkhas, Karbir and Amar Sing :—

Cottians.

PELVO D'ELVA* (3,064 m. = 10,053 ft.). *June 8.*—Started from Elva at 4 A.M., and walked in 2 hrs. to the Colle della Bicocca (2,289 m.), and thence W. along the ridge in 1 hr. to the foot of the peak. Hence Mr. FitzGerald ascended by the N.E. arête. Mr. Conway and the Gurkhas bore l. below the E. face to the first couloir S. of the arête. They climbed this to a difficult place, and then bore back r. to the N.E. arête, by which the summit was gained in 2 hrs. The descent was made (by the normal route) along an easy snow-ridge to the S.W. shoulder and down a steep snow-slope, at the foot of which a path was found. The Colle della Bicocca was reached in 1 hr. from the peak, and Casteldelfino 1 hr. later.

Ruitor District.

COL DE S. GRAT (c. 3,350 m. = 10,981 ft.). *June 24.*—Started at 2.30 A.M. from a hut west of and about 1,000 ft. above the S. Grat chapel. Traversed N. and crossed the foot of the Glacier de la Sachère. Mounted diagonally over rocks, and in $\frac{3}{4}$ hr. came to the foot (level with the valley's third step) of the last couloir to the left leading up towards the Becca du Lac (3,395 m.). Climbed a snow-slope and the couloir for 1 hr. to rocks, and then bore r. up snow and over rocks for $\frac{3}{4}$ hr. to the watershed, close to the summit of the Becca du Lac. Descended the Ruitor Glacier for 2 hrs.; quitted it for its right bank above pools, and reached the club hut in 40 min. Followed a path for 1 hr. to the big waterfall, $\frac{1}{2}$ hr. to La Joux, 1 hr. to La Thuille. This route up to the Col lies much further W. than that taken by the first party in 1886.†

Aiguilles Rouges Range.

COL DE LA FLÉGÈRE. *July 1.*—Left the Floriaz hut above the Flégère at 3 A.M. Mounted in 1 hr. to the col S. of the Aig. de la Glière (2,851 m., the point next to the S. of the Aig. de la Floriaz ‡). Descended a very steep and stone-swept couloir (snow on ice) for $\frac{3}{4}$ hr. Bore right, and reached the Col de Bérard in $\frac{3}{4}$ hr., and so ascended the Buet.

Dammastock Group.

GALENSTOCK (3,597 m. = 11,802 ft.). *July 21.*—Having reached the summit of the peak by the usual route from the Grimsel,

* *Alpine Journal*, vol. xv. pp. 330-1; *Rivista*, 1894, pp. 68-9.

† *Alpine Journal*, vol. xiv. pp. 495-6.

‡ See Vallot's map of the Aiguilles Rouges in the *Annuaire du Club Alpin Français*, 1892.

descended a few yards along the N. arête, and turned E. down the most prominent couloir in the E. face. by which the Tiefen névé was reached in $1\frac{1}{4}$ hr., and the Gletschjoch in $\frac{3}{4}$ hr. more. The descent was made to Goescheneralp.

Tödi District.

GURKHA PASS (2,856 m. = 9,371 ft.), PIZ GURKHA (3,063 m. = 10,050 ft.), AND PIZ VALPINTGA (2,962 m. = 9,718 ft., 2,938 m. = 9,640 ft.). *July 25.*—Left the Maderanerthal Hotel at 5.30 A.M. Two hrs. to the Hüfi hut, $\frac{3}{4}$ hr. to the glacier, $1\frac{1}{2}$ hr. up the glacier and easy snow, and finally a few rocks to the Gurkha Pass. Here the party divided. FitzGerald, Carrel, and Amar Sing turned W. and followed the ridge, climbing both peaks of Piz Valpintga; the rest turned E., and climbed an easy rock arête in 35 min. to the top of Piz Gurkha, which commands a splendid view. Both parties returned to the col, whence the descent was made in 20 min. to the foot of the snow, and $\frac{1}{2}$ hr. further to the Rusein Alp. Peak and pass, being nameless, were named in honour of the Gurkhas. In the 'Tödi Climbers' Guide,' p. 30, the height 2,856 m. is wrongly assigned to the Cambriales Pass, which is really at or near 2,905.

HAUSSTOCK (3,152 m. = 10,342 ft.). *July 28.*—The summit of this peak having been reached from the Muttensee club-hut by way of the Ruchi, the descent was effected by the E. arête, in a thick fog, to the Meer Pass (2,692 m.) in $\frac{3}{4}$ hr.

Silvretta District.

OBER VERMUNT PASS (2,931 m. = 9,617 ft.). *August 4.*—Left the Madlenerhaus in fog and rain about 1 P.M.; $1\frac{1}{2}$ hr. to the foot of the Gross Vermunt Ferner; $2\frac{1}{2}$ hrs. (in dense fog and snow-storm) up the glacier and long snow-slopes to the pass,* which lies between the Piz Mon or Mont (2,984 m. or 2,977 m.) and Piz Mon or Jeramins (3,133, 3,134, or 3,126 m.). Descended a narrow valley and débris slopes, where the route from the Vermunt Pass was joined. Guarda was reached in $1\frac{3}{4}$ hr. from the col. The figures and names are taken from the as yet unpublished sheets of the Siegfried and new Austrian maps.

Oetzthal District.

WEISSKUGEL (3,746 m. = 12,291 ft.). *August 7.*—Left the Weisskugel hut by the right bank of the Langtauferer Glacier at 4.10 A.M. Crossed the glacier to rocks at the foot of the N. ridge of the Weisskugel. Climbed these to above the séracs. Descended on to the Langtauferer névé to leave the baggage (2 hrs. from the hut). Returned to the N. arête, at a point just above 3,258 m., and followed it to the top in $1\frac{3}{4}$ hr. from the baggage. Carrel and the Gurkhas returned to the baggage and carried it over the Weisskugeljoch to the Hinter-Eis névé. The rest of the party descended from the

* See map in *Die Erschliessung der Ostalpen*, vol. ii. facing p. 16.

summit straight down the excessively steep E. snow-face, and in 40 min. rejoined the others near the point in the névé marked 3,086 m. on the D. und Oe. A.V. map. Vent was reached in 3¼ hrs. walking. This descent would have been impracticable with the snow in normal condition.

Neither of these routes is mentioned in 'Die Erschliessung der Ostalpen,' vol. ii. p. 283 sqq.

NEW ZEALAND.

On Christmas Day 1894 the summit of Aorangi (Mount Cook) was reached, for the first time, by a New Zealand Alpine Club party from the Hooker Valley side. Mr. E. A. FitzGerald, accompanied by the guide Mattias Zurbriggen, made the first ascents of the following: Mount Sefton, from the Hermitage (in Zurbriggen's opinion 'the most dangerous and difficult mountain he has ever done'), Mount Tasman, (the second highest mountain in the island), Mount Haidinger, the the Silberhorn (c. 10,000 ft., between Cook and Tasman), and Mount Sealey (a peak often tried without success). They also discovered and crossed a new pass over the main range, and made the second complete ascent of Aorangi. The inn at the Hermitage has been closed this season, so that supplies have now to be fetched from a great distance. After Mr. FitzGerald's departure down country Zurbriggen walked up Mount Cook alone.

IN MEMORIAM.

/ WILLIAM EDWARD HALL.

TWENTY-SIX writers contributed signed articles to the first volume of this Journal. Thirteen of them are no longer members of our Club. While we may congratulate ourselves that among those who remain are several of the men whose names, as long as the Club may last, or stories of Alpine travel be read, will be to climbers what those of Mynn or Ward, Mytton or Osbaldeston, are to the devotees of other sports, we cannot but own with regret that, among the half who have left us—the list begins with Hudson, and ends for the present with Hall—are many whom we could ill spare.

Hall, who was in his sixtieth year at the time of his death in August last, joined the Club in 1861, and was, during the strenuous years that followed, one of its most energetic members. In the first volume of the Journal his name will be found recurring over and over again. He had already formed one of the jovial party who first succeeded in reaching the top of the Lyskamm, August 1861; and in the following year, with J. A. Hudson, had made the first passages of the Cols delle Loccie and des Bouquetins. The records of both expeditions will be found in the second number of the Journal. His account of the first ascent of the Dent d'Hérens, in company with Messrs. Grove, Woodmass, and Macdonald, a little later in the same

volume, is well known, and is a good specimen of the old breezy Alpine literature, now, it is to be feared, practically extinct, or only occasionally galvanised into a semblance of life again. In these days, when one hardly dares to mention any point in the Alps without appending in brackets its height in mètres and feet, it is curious to note that, in the whole paper, there is no indication of the height of the Dent d'Hérens; and Hall was decidedly a careful man about details, when details mattered. A week before, the same party had made the first passage of the Studerjoch, which found its chronicler in Mr. Grove (vol. i. p. 364); and yet a week earlier Hall and Woodmass, with three others, had made the first ascent of Piz Palù, an expedition not devoid of adventures.*

Hall continued to go to the Alps after 1863, but his name does not appear any more under the heading 'New Expeditions.' In 1864 he spent some time, in company with Mr. Auberon Herbert, in watching the war between Denmark and the German Powers, from the Danish side. On one occasion at least they came under fire. Military matters always possessed a great interest for Hall, though his main work was done in the more peaceful domain of International Law, a subject upon which he was a recognised authority.

Not only in the Alps was Hall an active member of the Club. He was twice on the Committee, and acted as Secretary in 1867-8. He also formed one of the Committee appointed in 1864 to consider various questions relating to ropes and axes, whose report will be found in the first volume. In 1869 he took an active part in the investigations held respecting Mr. Chester's death on the Lyskamm in September of that year, and read a paper on the subject in the following March.

His travels extended a good way beyond the Alps. He went to Chili, in 1868, on business connected with the Tichborne case, and gave some of his impressions of that country and of the Straits of Magellan in a paper which was read for him in May 1869. In 1873 he went to Lapland to shoot and fish—diversions which he pursued with more diligence, perhaps, than success—and again the Club benefited by his experiences. In later years he roamed almost all over the world; but, except on the occasion of a bold attempt (which, owing to the opposition of the military authorities, was only partially successful) to see something of the fighting in the Soudan, I do not think his roamings took him much out of the ordinary tracks. From a remark which he made to me some five or six years ago, I gather that his interest in the Alps had rather abated; but he never lost his interest in the Club, and was a frequent attendant at its meetings. He was a man of many accomplishments and many interests, and a large number of persons will regret that his somewhat quaint presence has departed.

A. J. B.

* See Mr. Buxton's paper, 'The Glaciers of the Bernina,' *Alpine Journal*, vol. i. p. 339 *sqq.*

REVIEWS AND NOTICES.

Guida alle Alpi Centrali Italiane e regioni adiacenti della Svizzera. By Professor Edmondo Brusoni. Vol. i. 1892; vol. ii. part i. 1893. (Published by the author at Domodossola.)

THE 'Guide Book to the Western Alps,' by Signori Martelli and Vaccarone, is planned to describe that part of the Alps between the Maritimes and Monte Rosa, though it unluckily has not yet progressed beyond the Eastern Graians. Signor Brusoni, patriotically anxious that the rest of the Italian Alps should not lack a minute description written in Italian, has resolved to take up the tale from Monte Rosa, and hopes to complete his work as far as the Ortler group. He proposes to divide it into six volumes and a supplement (the latter giving tables, &c.), and of these one and a half are now in the hands of his subscribers. Vol. i. is devoted to the Sesia valley, the neighbourhood of the Lake of Orta, the Ossola valley (*i.e.* the Italian slope of the Lepontines), and the Saas, Rhone, and Binn valleys, which cannot be left out of any account of this bit of the Alpine chain. Part i. of vol. ii. describes the glens and hills round the shores of the Lago Maggiore and of the Lakes of Como and Varese. Both are adorned with woodcuts (nearly 400 in number), but only a single sketch-map is given. The twelve detailed maps of mountain districts which are announced in the prospectus will doubtless be issued with one or other of the two specially Alpine volumes—iii. (the ranges between Monte Rosa and the rivers Adda and Mera) and vi. (the ranges between those two rivers and the Adige). In this way the valleys and the lower hills will lead up to the minute account of the higher ridges.

As far as I can judge, these volumes seem very well executed, and are specially attractive to those who do not feel drawn to explore the snowy regions of the Alps. The descriptions are carefully done, while information on historical and architectural matters is given in abundance.

I hope that the author will find a large enough number of subscribers to justify him in continuing the issue of this extensive and valuable work. The subscription price is only 5 fr. per vol. (and 2 for the supplement), each being well printed and strongly bound. Names should be sent to the author at Domodossola (Provincia di Novara, Italy). Such an enterprise should not be allowed to fail for want of support, particularly as the next volume will be one of special interest to climbers. I hope soon to be able to welcome it in these pages, and to use it on the spot.

W. A. B. C.

Die Erschliessung der Ostalpen. Unter Redaction von Prof. Dr. E. Richter. Herausgegeben vom Deutschen und Oesterreichischen Alpenverein. 3 vols. (Berlin: Verlag des D.Oe.A.V.)

Properly to review this magnificent work would require almost as many writers as have contributed to its production. The most that a single critic can do is to note a few of the reflections which its appear-

ance suggests, and sample a few pages relating to districts of which he happens to know something.

This book, to a true lover of the Alps, is profoundly melancholy. With *Erschliessung*—which the dictionaries inform us means ‘opening’ or ‘disclosure’—the glory of mountaineering is gone. The *arcantum imperii* is divulged. Half the pleasure of crossing a pass vanishes when you know that the ground on the further side has been carefully surveyed and contours are laid down at every hundred feet of height; when your map shows you exactly how far you are from the nearest place of shelter, streaks of paint on the rocks and trees point out the way thither, and your guide book tells you exactly what sort of accommodation you will find when you get there. One uncertainty indeed remains. You never know how many other people will have been availing themselves of the same means of information; from which it follows that at all events during July and August it is necessary to bespeak your quarters beforehand, which, again, means that a tour must be planned out in detail, and the plan strictly adhered to. No more variations adopted on the spur of the moment, no more waiting for a favourable day in order to accomplish some long-cherished purpose. The peak must be climbed, the pass crossed on the appointed day, it may be in snow or rain, or given up for the year altogether. Who can wonder that the flowing tide is with the ‘centrist?’

But *Erschliessung* has had another result. Something of the nature of enterprise—using the word in its widest sense—is essential to all sport. It need not necessarily involve physical danger; but it must in some way call into activity the pugnacious element in human nature. Something has got to be faced and beaten by the operation of ‘endurance, foresight, strength, and skill.’ That the first explorers of the Alps found plenty of occasion for the exercise of these qualities is clear enough from the records of their achievements; but in these days of *Special-Karten* and *Wegmarkirungen* where are their successors to find it? As the odds get shorter the stake must get higher. Speculation must supply the excitement that enterprise no longer can afford. ‘We have reached a state of things,’ says Dr. Richter in his excellent preface, ‘which may be summed up by saying that nearly all’ (why ‘nearly?’) ‘Alpine peaks of any importance have been climbed, all possible passes discovered, many—perhaps all—of the possible routes up conspicuous peaks taken; and the only new enterprises that can be undertaken are either unimportant or, more especially, foolhardy.’ He might have added, ‘or both;’ for a characteristic of some modern performances is to combine these two conditions. Take for instance an expedition which was a good deal talked about in some quarters a year or two ago—the *Gratwanderung* from the Schaubach hut to Sta. Caterina, by the ridge running from the Cevedale to the Tresero. The distance to be traversed is about equal to that from Dorking to Guildford by Leith Hill, Holmbury, and Ewhurst Mill; and with the snow in proper order would present to a good walker very little more difficulty. But, as the greater part of the route lies at a height frequently exceeding and seldom falling far short of 12,000 ft., bad weather may have very serious consequences. On a fine day, then, the

walk, though doubtless enjoyable in the extreme, contains little to call into exercise the qualities we have mentioned; while if, in the language of the old sporting writers, Jupiter Pluvius should be unpropitious, dangers will arise against which they will be of no avail. The same applies to several other expeditions which have been undertaken in the same district. The fact that a long snow gully is raked by stones does not make the ascent of it—as an ascent—any more creditable, though no doubt it ensures its being more talked about; the accomplishment of the feat tells us nothing except that A. B. has not had his head broken when he might, but it has gratified the gambler's instinct in A. B. Somewhat more deserving of respect are the gymnastic feats for which limestone formations offer the best opening; though we cannot but feel that they again are among the less admirable results of *Erschliessung*. We have heard an eminent Vienna climber defend Alpine railways, *Wegmarkirung*, and all the other 'facilities' which have, to say the least, not rendered the Alps more attractive to those whose memories of them extend back to the sixties, on the ground that anything was to be welcomed which enabled you to pass rapidly over the space between your starting-point and the foot of your scramble. Little did he care for the delights which a former President of the Alpine Club described many years ago in this Journal—the 'glorious forests intersected by a hundred streams, rushing downwards under the shade of pine trees, and washing the feet of mossy boulders, among which the traveller has often sought and joyfully found tall lilies and fair spikes of pyrola, rosy cyclamens perfuming the air, purple primulas festooned about the rocks.' Still less would he have included among the qualities needed by a mountaineer the power of finding the right path through those forests, of noting the features of the ground over which you might later have to pass, of acquiring that general eye for country the want of which has caused many a man to lose his time, and a few to lose their lives; all of which played their part in the *Erschliessung*.

It will not be expected, then, that these volumes will possess the charm of 'Peaks, Passes, and Glaciers.' One will hardly sit and read them by the fire as one reads Von Ruthner or Weilenmann, Tuckett or Whymper, Stephen or Wills. They are splendidly illustrated. Probably few things have ever been done in the way of book illustration by means of photography which can equal the views of the Thurwieser and the Schrankogel. The woodcuts are less satisfactory, but some of the smaller and more sketchy ones printed with the text are clear as diagrams, for which they mainly serve. Once or twice the photographs tell a tale. On the snow arête of the Thurwieser a party of four is proceeding, roped two and two, an arrangement of which Tyrolese guides are, for some obscure reason, only too fond. On the Drei Schuster it seems to be usual to discard the rope altogether in steep places.

Grundlichkeit and *Genauigkeit* are German characteristics, and they do not fail in this book. We might, perhaps, contend that passes have had at least as important a part in *Erschliessung* as peaks, and

deserve at least as much consideration. On the other hand, it may be urged that in the regions below the snow-line most passes have been in use from time immemorial, and the book does not profess to be a guide. Whether in the interests of thoroughness it was necessary to record the first occasions on which mountains were ascended by ladies may be questioned, unless it was essential to mark a well-known stage in the peak's progress.

A few points of detail may be noted. It should be said that *die Ostalpen* practically means the Austrian and part of the Italian Alps. Piz Linard and the Verstankla group of peaks are included, but, we think, no other peak which is wholly in Switzerland. In the map of the Silvretta group the names are given as used on either side of the frontier, and the heights according to both Swiss and Austrian measurements. The differences between these are striking and difficult to account for. When we find as much as 33 ft. between the estimates in the case of the Fluchthorn and 30 in that of Piz Buin, we are inclined to despair of the possibility of ever ascertaining the height of a mountain accurately, all the more so that in the former case the excess is on the Austrian, in the latter on the Swiss side. Curiously enough, there seems to be a kind of rule, though with many exceptions, that where the frontier runs N. and S. the Austrian figures are higher; where it runs E. and W., the Swiss. We congratulate the authors of the map on having preserved for a small peak in Val Tuoi its indigenous name of Piz dellas Clavigliadas, a picturesque and sonorous appellation (*Clavigliadas* = some kind of trap for chamois, such as used to be set hereabouts), which we are sorry to learn the Swiss official survey has discarded.

Who were 'die Engländer John Morell und J. Kochlefeld' who are recorded to have ascended Piz Linard in 1871? No reference is given, and the second name, at all events, is not exactly familiar to English eyes.

We do not quite understand the apparent implication on p. 11 that the way up Piz Buin no longer lies through a rock couloir. It certainly lay through a rock chimney last autumn; but this may, of course, be a different feature from that referred to by Herr Weilenmann in the passage quoted. The writer of the Silvretta section may be glad to learn, by the way, that Franz Pöll, who made the first ascent thirty years ago with the famous Swiss explorer, took a party up last summer on a stormy day, his seventy-four years notwithstanding.

Is the same writer correct in saying that a party made an ascent from the Jamthal hut on August 23, 1881? We can answer for it that five days earlier the hut was not in existence.

Philology, perhaps, has not much to do with *Erschliessung*; but, as one or two writers have touched upon it, we may point out that 'Futschöl' can surely be nothing but a Tyrolese corruption of 'Forcella' or some equivalent Romansch form, and that the derivation of 'Ferwall' (or 'Verwall') from *Ferri vallis* is against the usual law, according to which such words are compounded, the *vallis* always coming first; and, further, does not account for Vermunt, Vereina,

Vernela, Verstankla, and the host of names beginning with *Ver* which turn up in these parts.

Herr Friedmann's Ortler section will probably be the part of the book to which most readers will turn first. They will find it, perhaps, the most readable of any, though Herr Hess on the Oetzthal is nearly as good. The discussion of the Steinberger legend in connection with the Königsspitze is clear, and we fear we must say convincing, though we believe that Pater Corbinianus still adheres to his story. Probably if he had continued his mountaineering career he would be more easily convinced that his observation must have played him false.

Herr Friedmann has one happy sentence that may be quoted, as bearing in some measure on our opening remarks. 'The discovery of a new route,' he says, 'is kept secret; "problems" are no longer set to the world, and trumpeted abroad; it has become harder to find a "Weg" than to follow it when found.' Scarcely a sportsmanlike state of things! In this section (Ortler) we notice a curious omission. Why is the ridge between Martell and Ulten followed only as far as the Zufrittspitze? The extreme point of it, known as the Hasenohr or Vlatschberg (c. 10,700 ft.), must be a view point second almost to none. It is conspicuous from everywhere, and is said to be often ascended by the youth of Latsch, in the Vintschgau. But for some reason the innocent peak suffers under a conspiracy of silence. Ball, indeed, mentions it as 'a fine peak,' but it will not be found in the index to Bädeker. The present writer has no prejudices in its favour. He has more than once tried to get up it, and always been defeated by weather. But it should not be overlooked.

Turning to the Oetzthal, let us say that we can hardly think Herr Purtscheller right in believing that he made the *first* ascent of the Acherkogel above Oetz in 1881. Certainly in the previous year well-informed people at Oetz spoke of the ascent as no uncommon performance. But, no doubt, a 'first ascent' in the technical sense is compatible with many previous ascents in the sense in which ordinary mortals use the term.

We will end with a good story told by Herr Hess, who, perhaps, with no less diligence than his colleagues, combines more sense of humour than some of them. In 1830 an enterprising Frenchman, named Mercey, went to Tyrol; and published a book on his travels in 1833. He ascended (for the first time, it is believed) the Schalkkogel in the Oetzthal. From the summit his guides pointed out various objects of interest, including the direction in which lay the notorious 'Lac de Gewester.' This was an unknown name; but inquiry showed that Peter Anich, being a good Tyrolese, had indicated on his map the site of the periodic glacier lake in the Rofen Thal—which in his day was empty—by the words 'Gewester See.' Now *gewester* is Tyrolese for *gewesener*—as we should say, 'a lake that was.'

Der Montblanc. Von Paul Güssfeldt. (Berlin: Gebrüder Paetel. 1894.)

This most exact and carefully written book describes the Alpine ascents made by Dr. Güssfeldt since his 'Hoch Alpen' was published.

Many well-known climbs are included in it, and the mountaineer revisits, in most excellent company, the Gabelhorn, the Matterhorn traverse, the Monte Scerscen, &c.

A winter campaign in January 1891 is of great interest, and conveys a very vivid picture of the possibilities of winter cold and storm. One of the best characteristics of the book is the careful topographical note which precedes each group of ascents, and enables the reader, even if unacquainted with the district, to acquire a definite idea of the lie of the mountains. The actual ascents themselves are described with a minute accuracy that has been seldom rivalled in mountain literature. At rare intervals the enthusiasm of the born mountaineer breaks through the author's habitual reserve, and his touching reference to the late Ferdinand Imsegg is not merely singularly appropriate to that happiest and most sanguine of guides, but breathes the true spirit of the mountain worshipper.

The main interest of the book, however, centres, as its name implies, in Mont Blanc. Dr. Güssfeldt is, perhaps, better acquainted with this mountain than any other amateur living. He has traversed—either in ascending or descending—the two Grands Mulets routes (Bosses and Corridor), the St. Gervais route, the route by the Rochers du Mont Blanc (erroneously known as the Aiguille Grise), the true Aiguille Grise route (Glacier du Dôme), a Brenva glacier route, and that from the Brenva glacier to the Aiguille Blanche de Peuteret, and thence by the Mont Blanc de Courmayeur to the summit.

The Brenva route followed was that taken, some years since, by M. Gruber. The ascent of the terrible couloir, down which great masses of ice fall, on the average, some six times a day, was only accomplished just in time, an avalanche sweeping it a few minutes after the party had reached a place of safety. Whilst this line of ascent may, perhaps, be rather easier than that discovered by Mr. Walker's party in 1865, it is undoubtedly far more dangerous. Presumably, Dr. Güssfeldt's party failed to identify Mr. Walker's route: there is nothing to indicate that this most perilous couloir was deliberately preferred to the more difficult, but infinitely safer, ascent by the rock buttress and ice ridge.

The last expedition described, that of the Mont Blanc by the Aiguille Blanche de Peuteret, is, it is needless to say, of very exceptional length and most continuous difficulty. It involves a high camp on the bleak slopes of the Peuteret and a second night in the near neighbourhood of the top of the Mont Blanc de Courmayeur. The passage of the stone-swept gullies and slopes of the Brenva face of the Peuteret may be reckoned amongst the most adventurous scrambles ever effected in the Alps, and the more daring school of English climbers will be glad to find that the veteran Dr. Güssfeldt is one with them in act and feeling.

ALPINE NOTES.

THE ORTLER.—Two ascents of this peak deserving of record have been brought under our notice. In August 1894 Mr. E. Aleister Crowley, with the guides Michael Ortler and J. J. Thöni, of Trafoi, traversed the peak, ascending by the Hintere Grat and descending over Stickle Pleiss. Mr. Crowley also accomplished a variation of the Hintere Grat route, by the rock-ridge at the base of the Grat.

Mr. Gilson also made an interesting and possibly new expedition, of which the following is his account :—

‘On September 2, 1893, Mr. R. C. Gilson, the Rev. E. H. Kempson, and Mr. J. P. Gilson left Trafoi about 2.30 A.M., and reached the Bergl hut at daybreak after a steamy climb through the pine wood above the Three Holy Springs. Some 300 ft. above the hut begins a rock arête, extending upwards in a south-easterly direction, and forming the western wall of the steep ice gully called “Pleiss” by Mr. Tuckett,* and marked “Stickle Pleiss” in Hoffmann’s map. This ridge terminates in the pointed Pleisshorn—a prominent object from the Stelvio road—which is separated from the main mass of the Ortler by a narrow snow saddle forming the head of the gully already mentioned. The summit of the Pleisshorn (3,154 m.) is only a few feet higher than the saddle, but its western side is a tremendous precipice, rising sheer from the lower part of the Unter-Ortler glacier. This circumstance, together with the sharpness of the rock rib and of its termination, gives it from some points of view the appearance of a distinct and not inconsiderable peak. The saddle gives easy access to the comparatively flat summit snow-fields of the Ortler, the crown of which (about 400 m. higher) lies 2 kilomètres to the E.S.E. The difficulty in the early ascents of the Ortler from Trafoi was (see Tuckett’s paper) the Pleiss gully, because of its steepness (45° near the top), and because of falling stones. Tuckett avoided it in 1864 by striking to the left, and making his way up over broken ground to the Tabaretta ridge. The party named above avoided it in ascending by keeping to the right and following the rock rib to the top. The guides at Franzenshöhe declared that the arête “failed,” and could not be used as a ladder to the Ortlerspitze, but they were unable to indicate either the point or nature of such failure. As a matter of fact no particular difficulties were encountered, though the climb is decidedly interesting, and about 3,500 ft. of elevation are gained by the almost continuous use of hands as well as feet. A snow-storm coming on, the passage of the upper névé was abandoned, and the party cut steps down the Pleiss—a tedious proceeding, and not altogether safe, though the stones seem to fall mostly on the E. side of the couloir. It would doubtless have been better to return down the arête. This route to the highest point in the Eastern Alps is strongly recommended as more interesting and not necessarily much longer than Tuckett’s, while it is infinitely preferable to the crowd-tramped path from Sulden.’

* *Alpine Journal*, vol. i. p. 409.

We have received numerous complaints of inefficiency in respect of the Ortler guides, and in particular it is alleged against them that they are in the habit of roping in parties of two (one traveller and one guide) when about to cross *névé*. It is stated that they assert that they do so in accordance with instructions given to them by superior authority. We find this hard to believe, for no more pernicious practice, especially for men otherwise inefficient, can be conceived. In the Ortler district, as in the Pennines, there are to be found a few first-rate guides, though the majority, there as elsewhere, are doubtless a feeble lot. Travellers who may visit the Ortler district in the coming season will perhaps do well to inquire what foundation, if any, there may be for the statements of certain Ortler guides to which reference has been made above.

THE MÖNCH IN 1894.—In the early summer of 1894 two expeditions were made up this peak, which deserve to be chronicled in these pages. We are indebted for the following details to Herr Andreas Fischer, of Grindelwald, who in one case derives his information from one of the guides of the party, in the other from his own personal experience. On June 29 Herr A. Hügli, a law student from Bern, with the two Johann Kaufmanns (uncle and nephew), of Grindelwald, as guides, succeeded in climbing the Mönch from the Wengern Alp, a route which is believed not to have been accomplished since it was done in September 1886 by Messrs. Jose and W. Fairbanks's party.* Starting from the Guggi Club hut about 3 A.M., the 1894 party at 7.30 attained the base of the great bulging ice wall which has for many years proved such a great obstacle. Part of this wall was ascended by means of a ladder left here in 1893 by some Lauterbrunnen guides on an unsuccessful attempt. Above the ladder the difficulties increased, and more than four hours' hard step-cutting was required to gain the upper snow slopes. The aid of the ladder was found to be absolutely necessary, and the one found was left for the benefit of future parties. No other difficulties were encountered. The summit was attained at 3 P.M., and Grindelwald, *via* the Mönchjoch, that night at 10 P.M.

On July 8 Herr Fischer and Johann Kaufmann the younger left the Guggi Club hut at 3 A.M., and forced their way with considerable difficulty to the top of the Jungfrauoch, which had not been reached from this side for several years. Some time was lost on the way, as neither member of the party had ever been on this expedition, and they were in a thick fog up to the pass. This was gained at 11 A.M., and soon bright sunshine drove away the mists. The two adventurers then followed the crest of the S.W. arête of the Mönch to the top of that peak. It is believed that this had never been previously done, as it is usual to gain that ridge from the S., some way above the pass, and to follow the snow and ice slopes on the S. face of the S.W. ridge.

'We followed the ridge to the Mönch without ever going down to the S. Its highest point was gained at 1.30 P.M. Here we looked

* *Alpine Journal*, vol. xiii. pp. 128-9.

down into a steep cleft which separated us from the Mönch. We had to descend about 150 ft. over bad rocks covered with ice, and at 2.15 p.m. began to climb the S.W. ridge of the Mönch. For $\frac{1}{2}$ hr. the way lay over snow and ice and was very easy. Then came a steep wall of bare rocks, which looked doubtful. As far as we could see they can be climbed, but we were afraid that higher up we might be cut off, and so we traversed a steep and broad ice slope (close to the rocks) on the S. face of the mountain. The ice was covered by a mass of treacherous snow, two feet deep, which had to be swept away before a safe step could be cut. This traverse took 2 hrs. Then we got to some smooth slabs of rock, now and then half hidden in snow and thin ice. They were solid enough, but did not offer any good handhold. Over these rocks we climbed up to the ridge again. This was the most difficult part of the ascent: all the rest was easier. The upper part of the arête is nowhere very narrow, and some gendarmes are easily avoided.' The weather then broke again. Mist, a cold S.W. wind, and a snow storm encompassed the party when nearing the top, gained at 7.30 p.m. only. Later it became clearer. The col between the Mönch and the Trugberg was reached at 9 p.m., and the Bergli hut at 11.30 p.m. Kaufmann states that this is the hardest and longest expedition he has ever made, while Herr Fischer is of opinion that, with the exception of some bits on the Ecrins and the Meije (not on the ordinary line of ascent), he has never done a more difficult bit of climbing. These expressions suffice to show the true nature of the climb, and the two comrades are to be heartily congratulated on their success.

A RAILWAY UP THE MEIJE.—The Meije has shared the fate of the Matterhorn, Jungfrau, and Eiger in so far as a scheme for making a railway up it has recently been put before the public. It is, however, to be devoutly hoped that purely financial considerations, if none other, will long delay the carrying out of all these projects. Meanwhile it is curious to study the daring plans propounded by men of standing in their profession, and the following details of the Meije railway (taken from 'Le Dauphiné,' a Grenoble newspaper, of November 11, 1894, p. 259) have in any case a real historical value. It is to the brains of Dr. Prompt, of Bourg d'Oisans, and his brother, now director of the Egyptian railways, that we owe the first idea of this railway. The line is to start from La Grave, and will be $6\frac{1}{2}$ miles long. It is prudently stipulated that, as the trains are to run in winter as well as in summer, the line will be entirely subterranean. The main station will be opposite La Grave, on the left bank of the Romanche. Hence a funicular railway (maximum incline 25) is to run south-west in $2\frac{1}{2}$ miles to the beautiful little lake of Puy Vachier, on the shores of which will stand the first station. The line will then bend south-east, and another great tunnel of $2\frac{1}{2}$ miles will pierce through the Peyrou d'Amont and a bit of the ridge of the Râteau in order to gain the Brèche de la Meije, where will be the second station, also in the open, and supplemented by a very superior kind of 'Refuge.' From this point the third and last section of the great tunnel will pierce the Meije itself, making a zigzag to the east

towards the Pic Central, then turning north, and finally west, and ending in an underground station. This third station is to be 60 feet or 70 feet in vertical height below the summit of the Grand Pic, and a lift will work from the end of the tunnel to the entrance hall of the 'Hôtel Observatoire,' which will crown the highest point. The tunnel will have a diameter of 11 feet, and from the lake onwards the trains will be drawn up by steam engines. The total cost of the line, including the stations, hotel, furniture, rolling stock, &c., is estimated at only 200,000*l.*, half of which is to pay for the long tunnel in its three sections. The price of a ticket from La Grave and back is to be only 1*l.* One can scarcely take this precious scheme seriously; but it is only fair to quote the words in which the projectors express the objects they have in view:—'M. le Dr. Prompt fait remarquer que la pureté extrême de l'air permettra de faire sur la Meije des observations astronomiques et météorologiques d'une précision incomparable, et que le traitement de la phtisie pourrait y obtenir des cures très sérieuses.' It does not appear whether either of the MM. Prompt has ever been on the summit of the Meije. Those who have will, however, try to imagine the 'Hôtel Observatoire' filled with guests—say, on January 1—with a snow storm raging furiously around, and will be tempted to believe that, though the consumptive patients may get cured in that fine air, yet their nerves will be severely tried by a stay at this new 'séjour d'hiver,' and that they will return to their homes no longer sick in body, but very sick in mind indeed.

W. A. B. COOLIDGE.

UP THE JUNGFRAU IN A BALLOON.—It seems scarcely credible that a fresh degradation is in store for the unhappy Jungfrau. Yet the Swiss papers announce that such is the case. A company, with a capital of 40,000*l.*, is about to be formed for the purpose of acquiring a huge balloon. This is to be fastened to some point near the Kleine Scheidegg by a chain of 1½ mile in length, and by means of power derived from the Lütschine stream is to be thrust through the air to a height of about 325 feet above the summit of the Jungfrau. It is to carry a car capable of holding fifty persons, and the whole journey and back is to be done in one hour. The promoters of this scheme count, it is said, on a net profit of 4,000*l.* per annum. Thus in the course of a few years it will be possible to ascend the Jungfrau several times a day, either by balloon or by rail. A 'combined ticket,' no doubt, will be issued.

THE NOMENCLATURE OF THE N. RIDGE OF THE TOUR DU GRAND ST. PIERRE.—In the 'Rivista Mensile del C.A.I.' for June 1894, pp. 179–188, there appeared a very complimentary article on our Climbers' Guide for the Cogne Mountains, by our friend Signor G. Bobba, the Italian climber whose writings on the Grand Paradis district are so well known. It is very gratifying to us to find that our book has met with so warm a reception at his hands, but, whilst we gladly accept certain corrections which he has pointed out, we are constrained to call attention to several errors into which he has himself fallen.

His criticisms all relate to the comparatively little-known ridge which runs due N. from the Tour du Grand St. Pierre. This ridge we

may, for convenience sake, divide into two parts, that to the S. of, and that to the N. of, the pass known as the Coupé de Monei.

We would premise that the heights on Signor Paganini's map are very difficult to decipher, so much so that in several cases Signor Bobba and ourselves read them differently. This point, though of no great importance, will serve to explain why we do not always quote heights. Our remarks refer to the position of the peaks in question rather than to their altitudes.

1. *Ridge between the St. Pierre and the Coupé de Monei.*—(i.) The first peak N. of the St. Pierre is the double-headed *Tour St. André*. The more southerly summit, 3,639 m., P.'s map, still remains unclimbed as far as Signor Bobba's knowledge goes (p. 181). Yet it is clear that Dr. Walther Schultze on August 16, 1890, climbed over it on his way from the snowy depression between the St. Pierre and the St. André (which might fitly be called the *Col du Grand St. Pierre*) to the more northerly summit, 3,650 m., of the St. André.*

(ii.) Next comes the snowy dome marked 3,602 m. on P.'s map, first reached on August 10, 1891, by Messrs. Stallard and Ormerod,† who speak of it as 'a minor snow hump.'

(iii.) Lastly comes the *Tour St. Ours*, to which Signor Bobba assigns the figures 3,630 m. of the Italian Government map and 3,616 m. of P.'s map. But in our opinion it seems certain that 3,630 m. really applies to the St. André, while we are quite unable to find 3,616 m. on P.'s map.

2. *Ridge N. of the Coupé de Monei.*—(i.) The first summit is the two-headed *Patri*, about which we are somewhat in the wrong. We were right, indeed, in stating (p. 67 of our book) that it is the highest point in the ridge N. of the Coupé, and also in saying that it was the peak ascended in 1881 by the Signori Sella, though we should have pointed out that this party climbed the more southerly and higher of the two heads only, the N. head being still apparently unclimbed. The *Patri* occupies the position assigned on the Italian map to the *Punta Cisseta*, 3,423 m., not, as Signor Bobba maintains, that of the point 3,583 m., which is obviously the St. Ours. We cannot make out the height on P.'s map, though it may be 3,583 m., as stated by Signor Bobba.

Our error thus consists in the facts that we cannot read P.'s map, and that we omitted to state that the *Patri* has two heads.

(ii.) N. of this is the *Colle Patri*, rightly described in our book (p. 66) as having been reached from the W. by Signor Bobba in 1890.

(iii.) N. of this is the peak marked 3,417 m. on P.'s map, confounded by us with the true *Patri*, and called by us (p. 65) *Punta Valleretta*. This point we, adopting Signor Bobba's nomenclature, intend to call in future editions *Punta Cisseta*.

(iv.) N. of this is the *Colle Cisseta*, wrongly called by us (p. 65) *Col de Vermiana*. Signor Bobba is also in error as to this pass, probably owing to our mistake. It was first reached from the N. ridge of the peak here called *P. Cisseta*, by Messrs. Yeld and Trundle, in 1882, and the E. side descended to the *Valeille*.

* *Mittheilungen d. D. u. Oc. A. V.* 1890, p. 218, 1891, p. 156.

† *Alpine Journal*, vol. xvi. p. 51.

(v.) N. again of this is the *Punta Valletta*, with two heads. This peak, we regret to say, was entirely overlooked by us in our book. It was first ascended by Signori Bobba and Gadin in 1893, as narrated in Signor Bobba's oft-cited article.

(vi.) N. of this is the *Colle Vermiana* (3,100 m., P.'s map), known to hunters only.

As to the portion of the ridge still further N., we and our book are in agreement with Signor Bobba.

G. YELD.

W. A. B. COOLIDGE.

THE EARLY HISTORY OF THE HIGH PASSES ROUND ZERMATT.—This most interesting subject seems as yet to have scarcely attracted the attention it deserves. Much information relating to the local traditions is to be found in the works of Engelhardt, Fröbel, Forbes, &c., while some particulars regarding the earliest authenticated passages of the great cols near Zermatt are given in the Zermatt section of Mr. Coolidge's 'Swiss Travel and Swiss Guide Books.' Mr. Ball's most valuable notes on the subject in his 'Schwarzthor' paper* are well known. The following additional details rest on the information gathered by him during the same visit to Zermatt in 1845, and are here reproduced from his diary under date of August 11, 1845. They are specially worth consideration, as they may be taken to represent the local traditions current at Zermatt before the rush of travellers had begun. Mr. Ball is speaking of the Jung huts on the pass of that name:—

'The view of the Saas Grat and Rosa chain magnificent. The idea then first occurred to me of crossing the Lys Kamm [that is, no doubt, the Schwarzthor crossed soon after by him], as I saw that there was a pass, level at the top, and the glacier at the upper part not much broken. The question was whether the pass would lead to Gressonay and be descendible on the S. side. Braunschén [Brantschen] did not hesitate to assert that it certainly was the pass to Gressonay, and that he had heard that it had been used by the Gressonayers fifty or sixty years ago. I kept this in mind. I may as well here note down some of the other *on dits* as to passes which I inquired for.

'1. *From Zermatt to the Einfisch Thal, between the Weisshorn and the Triflhorn or Rothehorn.*—Braunschén went to Täsch to consult an old man, formerly a great hunter, supposed to know more of the mountains than any one else. He said that up to forty years ago there was a passage across the chain, but that it had been stopped up by the glacier; that a former Pfarrer of Täsch had found papers 400 years old in which this pass was spoken of as a usual one at that time. From what I afterwards saw of the head of the Turtman Thal I should suppose it possible to attain the ridge, after which there would be a considerable ice field *nearly level* between the inner and outer ridge of the Weisshorn. How the descent may be I cannot tell.

'2. *Between the Higher Gabelhorn* [these words are inserted in the MS. for 'Dent Blanche,' erased] *and the Triflhorn into the Eringer Thal.*—The tradition is that mules formerly passed this way, though if

* *Peaks, Passes, and Glaciers*, 1st series, pp. 158–60.

the glaciers were so much easier I do not see why they should not cross the Col d'Erin; perhaps the rocks were too steep. Braunschen tells of a deaf and dumb chamois hunter who, a few years since, reached the top from Zermatt, and said (how?) that he had there found the remains of a ladder, which seemed to have been used in some steep part of the descent.

'3. *The Saas Grat*.—This, it seems, is not impracticable, but the glacier is very much broken towards Saas. Two or three Englishmen started with guides. They reached the top, and were preparing to descend, when clouds came on; they returned, but were forced to spend the night on the glacier, and were laid up in bed at Täsch for three days afterwards.*

'4. *The Weiss Thor*.—Braunschen was one of thirteen who went and returned about ten years ago. Damatter, as I understood, passed six or seven years ago. Since that he and Braunschen have both been to the top with tourists, but the descent has appeared impracticable. A wicked hunter (*böser Jäger*) is said to have found a new way, easier, last year.'

[It must be remembered that in 1845 the Theodul and the Col d'Hérens only were known to have been certainly traversed, the latter quite recently.† The first of the passes mentioned by Mr. Ball is clearly the *Biesjoch*, of which the first authentic traverse seems to date from 1862. The second is evidently the *Triftjoch*, for the curé of Zermatt went up to it in 1849, and found the remains of the ladder.‡ The third is certainly the *Allalin Pass*, to which all the old references as to this range undoubtedly point; it was crossed in 1847 by Professor Ulrich's party, the first travellers, no doubt. Mr. Malkin in 1843 went to the top of the Weissthor. To the references relating to that pass in 'Swiss Travel,' p. 318, add 'Alpine Journal,' xv. pp. 147-50.]

The following extracts show how Mr. Ball's intention of crossing the Schwarzthor gradually ripened. Under August 15 he writes: 'After the work [certain observations on the Findelen Glacier] was done I proposed to cross the Riffel, in order to gain the fine sunset view which we might expect, as the day was clear, but mainly for the sake of studying the col over the Lys Kamm.' A little below he adds: 'We gained the point N.E. of the Riffelhorn, about the same height, whence the view of Monte Rosa is even finer. I examined the pass very carefully, and saw that if it were possible to pass the point where two streams unite, one from the E. ridge of the Breithorn, the other from the Lys Kamm, and where two systems of great crevasses meet, the remaining part of the way would probably offer no serious obstacle. I was, therefore, determined to make the attempt, as, if obliged to return, the obstacle would occur so early as to cause no future inconvenience.' The next day, August 16, was spent by Mr. Ball at Zermatt, making preparations for his expedition. 'In the evening Damatter came to pay me a visit and talk of the passage. He showed far more interest and enthusiasm than he had hitherto done, chiefly, to be sure, because

* [One of the party was named Shuttleworth. See *Berg- und Gletscherfahrten*, 2nd series, p. 99.]

† See *Swiss Travel*, pp. 288-9.

‡ *Ibid.* p. 295.

of the grand smuggling opportunities which the pass, if practicable, would present. He said that if he were "gesund" he would be glad to go with me gratis! He gave me several details as to the Weiss Thor, which made it appear a less serious undertaking, if the glacier were practicable at the verge of the precipice, than I had supposed. He had, like Braunschen, no doubt as to my pass leading to Gressonay, and that the descent on the Italian side would be easy. I thought the same, because I concluded that it would lead to Zumstein's route by the Hohelicht.' [Over the last words is written in a later hand, 'A great mistake of mine.'] As is well known to Alpine readers, Mr. Ball on August 18 successfully achieved his long-planned pass, which led him, however, to the Ayas valley, and not to Gressonay, in the Lys valley, as he had anticipated. His thrilling narrative of his adventures was printed in the first series of 'Peaks, Passes, and Glaciers,' pp. 162-92. A somewhat different version, with a few very interesting additional details, is given in his diary, and is continued on some loose sheets of paper (twenty-four sides of letter-paper). This may be the original version prepared for translation into French ('Peaks, Passes, and Glaciers,' p. 192). In the diary, too, are the original pen-and-ink sketches of the well-known illustrations published with his paper in 'Peaks, Passes, and Glaciers.'

THE CAUCASUS.—Mr. Douglas Freshfield has determined to alter the form of his proposed contribution to Caucasian literature. Owing to the difficulty with regard to maps, he has abandoned for the present the publication of a 'Climbers' Guide,' and will in its place bring out an illustrated work, in two large volumes, with over seventy photographs (from views chiefly by Signor V. Sella, with others by Mons. de Déchy, Mr. Woolley, and Mr. Donkin), and 100 views in the text, and a complete new five-verst map of the Central Caucasus, based on the most recent surveys and explorations. The text will contain a brief summary of the expeditions of English mountaineers, and a narrative of the author's travels and adventures in his two last visits to the chain. The book will be called 'The Exploration of the Caucasus,' and will be published in the winter. The first edition will be limited in number. Copies may be ordered of the publisher, Mr. Edward Arnold, 37 Bedford Street, Covent Garden, W.C.

SCHWARZHORN (LOETSCHTHAL).—With reference to the ascent of this peak recorded on page 347 of the present volume, Mr. Paul Montandon (S.A.C.) writes as follows:—

'Amongst the new expeditions in 1894 in the Bernese Oberland, the "Alpine Journal," No. 127, mentions an ascent of the Schwarzhorn (3,132 m.) in the Bietschhorn range, made on July 26, 1894, by Messrs. Benecke and Cohen from the top of the Schafberg and the S. rocks. As this peak was ascended by Mr. René Koenig, my wife and me (without guides), on August 31, 1892, direct from the Schafberg Hut with descent to the Bietschgletscher and valley, Messrs. Benecke and Cohen's expedition is not, strictly speaking, a new one. We did not know at that time that the peak had never been climbed, at least by tourists, and did not therefore put any descriptive notice into the Swiss "Jahrbuch."

'From the Schafberg Hut we went towards Point 2,595 m., ascended

the snow-fields marked on the Federal Map, crossed the bergschrund, and climbed in a westerly direction the easy but steep and not uninteresting rock wall S. of 2,595. We then followed the upper snowy or icy border of the rocks where they plunge into the upper snowy part of the mountain, and reached the north-western snow arête and, by means of it, the summit in about 3 hrs. easy walking from the hut. The view of the Bietschhorn is very impressive. The descent was made quite easily to the Bietschgletscher and into the Bietschthal.'

It would appear, therefore, that Mr. Montandon's party traversed the W. peak of the Schwarzhorn (*i.e.* the peak marked 3,132 m.) from N. to S., while the 1894 party climbed the E. peak from the S., and then followed the ridge over the W. peak into the Wilerjoch, so that the two routes cross one another pretty well at right angles. The E. peak is practically the same height as the other, and stands just N. of the letter h in the word 'Schwarzhorn' on the S. map.

NEW ROUTES UP THE GRANDE CASSE AND THE MONT POURRI.—Our new contemporary, the 'Revue Alpine,' of Lyons, gives some details of new routes up these peaks, the two loftiest in the Tarentaise, or Western Graian Alps. Both were made by Lieut. Messimy, with the guide Blanc (*dit le Greffier*), of Bonneval, in the course of last August. On August 23* the party went from Entre Deux Eaux towards the Col de la Vanoise by the path till it becomes level, after the first steep ascent. Then they bore N., and by a succession of gullies reached a height of 3,200 m., thus gaining a point below the depression between the two summits, 3,806 and 3,861, of the Grande Casse. Hence they mounted by the right bank of a small torrent which flows from the glacier, descending from the afore-said depression to the point marked 2,230 m. in the Leisse valley. The terraces of rock offered no difficulty, save one wall of about 200 ft. in height, which was scaled by the third gully from the right bank of the torrent. In this way the glacier, then the depression, was gained, the highest point being soon attained by the usual narrow snow ridge in about 7 hrs. from the starting point. The party descended by the same route, and reached Tignes that night by way of the Col de la Leisse. As might have been expected, they state that the ascent would be very dangerous, because of snow avalanches, if all the snow on the S.E. face had not disappeared. As it was, there were many stone avalanches. An attempt to climb direct up the whole of the great S.E. rocky face, made by the same party on August 22, was not successful.

On August 26 the same climbers started † from the Granges Martin, N.W. of the hamlet of Brévieres, below Tignes, crossed two narrow arms of the Savine Glacier, and gained that of La Gurre. Stone avalanches down the very steep S.E. face of the Pourri prevented them from attaining the summit direct by that route. So they bore to the left and gained the great S. arête, by which they attained the top by a route taken several times previously. The greater part of this route had been already taken, but the previous party did not reach

* *Revue Alpine*, vol. i. pp. 52-3.

† *Ibid.* vol. i. pp. 83-4.

the summit of the peak, and descended from a more southerly point on the S. arête to the La Gurre Glacier.

SPRING ASCENTS IN THE BERNESE OBERLAND.—Though the winter of 1894–5 was very severe in this district, the spring has been so beautiful and warm that the vast mass of snow has very quickly melted away, so that in the second half of April two of the high peaks have been ascended by English climbers. On April 21 Mr. Gaul, with Simon and H. Zurfluh, of Meiringen, climbed the *Wetterhorn* from Rosenlauri, taking 14 hrs. to the summit, as the snow was in very bad condition. This was the first ascent of the season; in 1894 the same mountain was not attained until June 5. On April 24 Mr. Douglas, with Christian Jossi and Peter Brawand, of Grindelwald, succeeded in ascending the *Jungfrau* from the Bergli Club hut. The weather was very unfavourable, and on the last slope many steps had to be cut in hard ice, so that much time was lost there, while elsewhere the snow was covered by a thin frozen crust only, thus causing great fatigue. Two years ago the *Jungfrau* was gained on April 2 (Easter Day), in very fine weather, but for obvious reasons spring ascents are but few and far between.

THE PROPOSED RAILWAY UP THE JUNGFRAU.—The following particulars as to this line are taken from the February number of the 'Echo des Alpes,' p. 53 *sqq.* From the Little Scheidegg the railway is to run for $1\frac{1}{4}$ mile above ground to the foot of the great W. arête of the Eiger, where will be the first station—*Eigergletscher*. Hence the line burrows into the mountain by a regular slope of 26 per cent., rounds the top of the Eiger, passing under the Mittellegi glacier, and reaches the *Eiger* station, situated at a height of 3,221 m. on the E. flank of the peak, above the Grindelwald Viescher Firn, and about $\frac{3}{4}$ mile from the Bergli Club hut. This station is $2\frac{1}{2}$ miles from that first named. It next ascends, by a slope of 15 per cent., beneath the arête joining the Eiger to the Mönch, passes immediately under (1,640 ft. below) the summit of the latter mountain, and soon after reaches the third station—*Mönch* (3,623 m.), $1\frac{1}{4}$ mile from the Eiger station. A descent leads down towards the *Jungfrau* joch, and, after passing 246 ft. below the crest of that pass, the line again mounts, by a slope of 26 per cent. under the E. arête of the *Jungfrau*, till in about 2 miles it bears round to the Hochfirn, on the W. side of the peak, and then reaches the *Jungfrau* station (4,100 m.), 217 ft. below the summit of the peak, which is gained by means of a lift. We are glad to note that the Swiss Alpine Club does not seem to have committed itself to a definite approval of this scheme. It has simply stated, in reply to a question, that in its opinion travellers will suffer no inconvenience from a stay on the summit, even though they have attained it without any effort on their part. This opinion, however, sounds rather odd, and one would like to know on what grounds it was arrived at.

THE ORIGIN OF THE GRIMSEL HOSPICE.—It seems to be commonly believed (*e.g.* by Mr. Ball, in his 'Alpine Guide,' vol. ii. p. 80) that the Grimsel Hospice was originally a religious foundation. In that case it would be like the hospices on the two St. Bernards, the Simplon,

St. Gotthard, Lukmanier, &c. But it is often forgotten that there were also hospices which were not religious foundations—*e.g.* All' Acqua, Schwarenbach, &c.—and it is to this class that the Grimsel Hospice really belongs. I had often searched in the special books for any traces of a 'religious' character about it, but in vain. Herr A. Bähler, of Biel, has, however, recently published a small pamphlet, 'Mittheilungen über den Grimselpass und das Grimselhospiz' (Biel, Ernst Kuhn, 1895, 8vo. pp. 47), which gives some interesting information on the point. The first mention of the pass dates from 1211, when Berchtold V., Duke of Zähringen and founder of the town of Bern, led his army across into the Vallais, where it was defeated at Ulrichen. Herr Bähler suggests that it is possible (as no doubt it is) that the first hospice was built by the Austin Canons of Interlaken, but there is not the smallest scrap of evidence in favour of this theory. We do find, however, that in 1382 the district of Oberhasle bought the Grimsel alp from the Bubenberg family. No mention is made of a hospice, and probably there was only a cowherd's hut on the pastures. Nor do we hear of any hospice either in 1419 or 1425, on both of which occasions a Bernese army crossed the pass on its way to the Vallais and the Val d'Ossola. But it had been established before 1492, in which year the Hasle and Vallais men had a quarrel about appointing a warden and the improvement of the path. Yet the Grimsel alp still belonged (as it does to this day) to Hasle, so that no doubt that commune built the hospice in order to accommodate the traders who had come to frequent the pass as affording easy access to the Vallais and Italy. In 1555 the Bishop of Sion gave permission to the men of Hasle (this was *after* the Reformation, of course) to collect money in the Vallais from charitable persons for the benefit of the Grimsel Hospice. In my 'Swiss Travel,' p. 199, I have pointed out that the actual earliest mention of the hospice is in 1479, when the tenant was granted the right of levying a toll, and I have given Stumpff's account of his experiences there in 1544. The hospice was rebuilt in 1557, and again (after the fire) in 1853, in both cases by Oberhasle, which has thus preserved its property in it to the present day.

W. A. B. COOLIDGE.

PROCEEDINGS OF THE ALPINE CLUB.

A GENERAL MEETING of the Club was held at St. Martin's Town Hall, Charing Cross, on Tuesday, February 5, at 8.30 p.m., Mr. H. Pasteur, *Vice-President*, in the chair.

The following candidates were balloted for and elected members of the Club:—A. H. Bird, Rev. Canon G. F. Browne, L. S. Calvert, Rev. W. C. Compton, Rev. L. W. V. Goodenough, E. C. Oppenheim, W. J. Petherick, S. Spencer, E. L. Strutt, A. F. B. Williams.

The VICE-PRESIDENT intimated that the officers of the Club, together with the Committee, had elected Professor F. A. Forel, of Morges, and Dr. E. Richter, of Graz, as honorary members of the Club. He regretted to have to announce that Sir Frederick Pollock

had resigned the post of Honorary Librarian, and moved that the best thanks of the Club be presented to Sir Frederick Pollock for his great services to the Club during the period of fourteen years. This was carried by acclamation. The Vice-President then stated that he was glad to say that Mr. H. Cockburn had agreed to undertake the duties of Honorary Librarian, and he was sure no member of the Club was better able to do all that was required.

The HONORARY SECRETARY AND TREASURER presented the accounts for 1894, and amongst other minor details pointed out that the cost of the Picture Exhibition was only about 65*l.* more than in the previous year, which he considered was satisfactory in view of the success of the Exhibition, the number of admissions to which had been over 3,500. The increase in cost of printing and publishing the 'Alpine Journal' was partly due to there now being 1,250 copies printed instead of only 1,000 formerly.

Mr. C. E. MATHEWS suggested that the accounts should be issued, together with the circular announcing the meeting, so that members might have an opportunity of studying them.

Mr. W. MUIR suggested that in future years the income derived from subscriptions and entrance fees should be given separately.

Mr. F. O. SCHUSTER wished to express his thanks to the gentlemen who had the arrangement of the Picture Exhibition in their hands; the experiment had been worth trying, though he did not consider it was one that ought to be repeated every year. It had long been felt that it was desirous to give the artists who so generously lent pictures at great inconvenience and expense to themselves a chance of having their pictures properly seen. Mr. Freshfield, Dr. Wills, and the others who had helped them, deserved the thanks of everyone for the admirable manner in which the arrangements had been carried out.

The HONORARY TREASURER regretted that it was impossible to adopt Mr. Mathews' suggestion, as by the rules of the Club a General Meeting had to be held annually in January or February for passing the accounts, and there was the utmost difficulty in obtaining all the accounts connected with expenditure up to the end of December in time to present them to the Club at the meeting in the commencement of February, and so it was absolutely impossible to send them round to members with the circular announcing the meeting. He promised in future years to show the subscriptions and entrance fees separately. The accounts were then unanimously passed.

Mr. G. HASTINGS read a paper entitled 'Over Mont Blanc from the Brenva Glacier without Guides.'

Mr. HORACE WALKER said he had listened to the paper with great pleasure and with unusual interest, as he was the only member of the first expedition in the Club. His pride was flattered to find that though this expedition had been undertaken twenty-nine years before, it had not yet become 'an easy day for a lady.' He did not quite understand why the party had gone so much to the left, as in 1865 it seemed the easiest way to bear to the right. He thought all must admire the courage that could enable men after such a night to go through so arduous an expedition. He had much pleasure in moving a vote of thanks to Mr. Hastings.

Mr. MUMMERY wished to say that both his companions had wanted to try the séracs on the right, but he had wished to see a little vallon in the middle of the séracs, and from this rose all their difficulties. He thought that Dr. Collie's feat of climbing the icewall on the axes was astonishing.

Dr. COLLIE said that a photograph taken in 1858 from the Col du Géant, which exhibited a portion of their route, showed the slopes to have been somewhat different from what they now are; the ice cap on Mont Blanc was not so far forward, and that was one great source of their difficulties. It was impossible for them to go to the right; but the old photograph showed a much less broken-up slope.

The VICE-PRESIDENT felt sure they had all listened with the deepest interest to an account of an ascent which reflected great credit on the pluck and endurance of the three men who failed the first day, slept on the ice, and achieved their end the second day. Mr. Mummery seemed to find that on the mountains there were no impossibilities, and he was well seconded by Messrs. Hastings and Collie. He was sure the Club would pass the warmest possible vote of thanks to Mr. Hastings for his paper. This was unanimously agreed to, and the proceedings terminated.

A new series of photographs of the Kanchanjanga group, published by Messrs. Johnston & Hoffmann, of Calcutta, was exhibited during the evening.

A GENERAL MEETING of the Club was held at St. Martin's Town Hall, Charing Cross, on Tuesday, March 5, at 8.30 p.m., Mr. Douglas W. Freshfield, *President*, in the Chair.

The following candidates were balloted for and elected members of the Club:—A. C. Benson, W. Brunskill, C. Cookson, R. Corry, C. J. Joly, S. B. Peech, O. K. Williamson.

The PRESIDENT stated that he hoped to be shortly in a position to make a communication to the Club with respect to new rooms.

Mr. W. H. COZENS HARDY read a paper, 'The Mountains of Montenegro and Albania,' which was illustrated by lantern slides. Mr. Horace Walker and the President made a few remarks, after which Dr. Norman Collie exhibited some lantern views to illustrate the paper read by Mr. Hastings at the February meeting. A vote of thanks to Mr. Cozens Hardy and Dr. Norman Collie terminated the proceedings.

A GENERAL MEETING of the Club was held at St. Martin's Town Hall, Charing Cross, on Tuesday, April 2, at 8.30 p.m., Mr. Douglas W. Freshfield, *President*, in the chair, in accordance with the following circular, which had been sent to all members of the Club:—

8 St. Martin's Place, W.C.

March 18, 1895.

A GENERAL MEETING of the Club will be held at St. Martin's Town Hall (next door to the Garrick Theatre, and almost facing the Club rooms), on Tuesday evening, April 2, at half-past eight o'clock, to take into consideration the following proposals made by the Committee for the purpose of providing the Club with more suitable accommodation.

For years past the insufficiency of the Club rooms for the meetings and general purposes of the Club has been recognised; the accommodation has been inadequate and the ventilation so bad that many old members have

given up attending the meetings. For the past three years our lease has been renewed only with the object of making no change in a hurry, and allowing the experiment of holding our meetings in a hired public hall a fair trial. This has now been done, and the opinion universally expressed is that meetings held out of our own rooms, and apart from all the Club's belongings, lose much of their attraction and traditional character. Unwilling as some of us have been to leave the familiar rooms, we feel that to occupy them, and not meet in them, is no real tribute to the *genius loci*; that the old spirit of the Club will be better kept up by the possession of premises suitable to our present needs, a hall of our own, and rooms which will give opportunity for the systematic arrangement and convenient use of the Club's possessions, its valuable library, map collection, and the pictures presented to it by its artist members.

Such premises the Committee are happy to be able to report that they have found, and they have made arrangements (subject to the sanction of the Club) for securing them at a fair rental. The situation, 23 Savile Row, is central, convenient, and quiet; and the accommodation is all that the Club requires.

The premises consist of a large, well-lighted and well-proportioned hall, about 50 ft. by 40 ft., capable of seating 200 comfortably, or 250 in case of need, having a second access from Conduit Street; a reading-room and a small secretary's or map room, both looking down the full length of Savile Row; a library and convenient lavatories. There is good accommodation in the basement for a housekeeper, and some attics which might serve as store-rooms, &c. The above comprise the whole house, 23 Savile Row, with the exception of the ground floor, which is occupied by Messrs. Rushworth & Stevens, auctioneers and surveyors, who are the holders of the direct lease from the freeholder; they have a separate entrance, and their portion of the building is known as 22 Savile Row, so that the Club's premises would be self-contained. The Committee have the offer of the premises for 15½ years, from Midsummer next, at 350*l.* per annum, inclusive of all rates and taxes, except a small water rate. The holders of the direct lease from the freeholder are prepared to give a written undertaking that they will afford the Club the option of continuing their tenancy for any further term which they may obtain from the freeholder at a rent not exceeding 400*l.*, which they are now receiving from the occupants, their lessees, whose interest it is proposed to acquire—*i.e.* the Club will obtain for 15½ years the premises at a rental of 350*l.* per annum, although the present occupants are paying 400*l.* for that term. The Club would probably have to spend the greater part of its savings in repairs, slight alterations, furnishing, &c. The premises will be open to the inspection of members from noon to 7 P.M. on April 2.

To meet the new claims upon it consequent on this change of quarters, it is requisite that the Club's annual income should be increased. After very careful consideration, the Committee recommend the following proposals to the Club:—That the annual subscription of new members be raised to two guineas, and that the present members be invited to raise their subscription to the same sum. The Committee have preferred this course to the alternative suggestion of a compulsory increase in the case of existing members, for the following reasons. It would be very repugnant to the feelings of the Committee, and they believe it would be so to the Club, to see the name of any old member who may not be in the habit of attending meetings, or using the Club rooms, and who may feel a difficulty in increasing his subscription, disappear from the list. On the other hand, they are assured that a very large proportion of the members will most readily contribute to a fund which will insure to the Club a suitable and permanent home, restore the old character to its meetings by making them more cheerful and popular, and be a source of advantage to every member who has occasion to use the library or the map room, besides giving great facilities for the exhibition, from time to time, of the artistic work of members, or of other objects connected with mountaineering.

The following alteration to Rule XV. will be proposed on behalf of the

Committee, in order to give effect to its recommendations, in place of the rule as now existing, viz. :—

‘ Each member shall pay an entrance fee of four guineas, and an annual subscription of one guinea : the subscription to be due on the 1st of January in each year. No member shall vote, &c.

That Rule XV. shall stand as follows :—

‘ Each member elected after the 2nd of April, 1895, shall pay an entrance fee of four guineas, and an annual subscription of two guineas. Members elected prior to the 2nd of April, 1895, who have not notified their intention of paying the annual subscription of two guineas, are entitled to pay only the original annual subscription of one guinea. The subscription to be due on the 1st of January in each year. No member shall vote, &c.

Members are invited to sign and return the enclosed form. All such acceptances will be treated by the Hon. Sec. as confidential.

Mr. Douglas W. Freshfield, President, will read a paper—‘ Behind the Bernina.’

J. H. WICKS, Hon. Sec.

The PRESIDENT brought the motion before the notice of the meeting in the following terms :—

‘ It is with great satisfaction that the Committee finds itself to-night in a position to redeem the pledge given by it to the last annual meeting, that it would, with as little delay as possible, bring before the Club proposals for providing accommodation suited to our present needs. It seems appropriate in doing this to indulge in a brief retrospective review. Years ago the single room that held our early meetings proved inadequate. We threw two rooms together; even so we were forced to consume our own smoke in intolerable quantities. Mr. Clinton Dent made experiments in ventilation; he did, doubtless, all that science could suggest, but the result was unfortunately inappreciable. Everybody agreed “ something must be done.” Our lease was near its end, but we had ground for hope that the Geographical Society might make itself a centre for kindred bodies, and might erect new premises, with rooms and a hall available for our purposes. That hope was unfulfilled. The Club being consulted, agreed that it could no longer meet in the old rooms, and would try the experiment of using this hall. We have tried it, and we are not satisfied. A meeting in a stale atmosphere, amid barren parochial surroundings, apart from our old associations and our own possessions, is unhomelike and ungenial.

‘ The Committee was generally requested and expected to take action. The problem before it—to find, in a first-rate situation, a suitable hall at a moderate rent—seemed to me, I confess, even so lately as six weeks ago, a very difficult one. But everything comes to those who can wait. The exact premises we wanted suddenly came into the market. The Trustees of the Young Men’s Christian Association, influenced possibly by Mr. Leslie Stephen’s timely suggestion at the winter dinner that mountaineering was a religious exercise, offered to transfer to us, at a sacrifice, their lease of some pleasant rooms and a good hall at the top of Savile Row. The situation was undeniable, the terms, as the circular has informed you, are not unreasonable.

‘ Still, the question of finance is a serious one. To live in these new

quarters the Club must have its income largely increased. And its needs, viewed from a broad standpoint, are not limited to the mere increase in rent and other expenses caused by having larger premises to keep up. No one who has for years been connected, as I have been, with the "Alpine Journal" but knows what straits the Editor is often in for lack of funds. Illustrations and maps have to be begged, borrowed, and conveyed from richer societies or private individuals. The Club is not in a position to keep up a publication equal to those of our foreign rivals. To put the Club at its ease, to enable it to play its part worthily, we require to double our income, and this must be done by providing a permanent revenue. The case would in no way be met by what has been suggested—spasmodic generosity on the part of our members. We cannot ask our Hon. Secretaries to meet the Club's necessities by raising from time to time a relief fund.

' There were three ways open to the Club for raising funds.

' The first and most obvious, at least to every *old* member, was to raise the entrance fee largely. That the entrance fee has already been recently raised, that such a step would be unfair, were minor difficulties; the conclusive objection, to our minds, was that any rise we could possibly propose would be inadequate.

' The second course, the usual one in the circumstances, would have been to raise the subscription all round. The objection was that any such compulsory rise leads, as a rule, to a loss of about ten per cent. of existing members, and that it was (as Mr. Wicks has put it) very repugnant to our feelings to contemplate such a loss.

' There remained to the Committee the alternative, the *tertium quid*, we have adopted—to propose a voluntary rise in the subscription. I might have hesitated to recommend such a course in any ordinary club, where the natural selfishness of mankind is not under the control of higher influences. But this club is not an ordinary body; it is an inspired body! It is inspired by a hearty enthusiasm for itself and an honest belief in its own merits. It values itself highly—it cannot value itself too highly—as a means for promoting one of the purest forms of human pleasure, and of kindling and keeping alight some of the most enduring of the friendships which render life worth living. There are, the Committee believes, few of our members who will, without good reason (and what is good reason we leave entirely to their own consciences), decline to make the small sacrifice asked of them if they are persuaded and convinced that such a sacrifice is called for in the true interests of the Club, that it will enable us to have a worthy local habitation as well as a world-wide name, will free us from the necessity of meeting in a vestry hall, and will add to our power of giving to our members the benefit of the results of their travels in our literary output.

' Mr. Wicks may, I am convinced, appeal with confidence to the old spirit of the Club to support our present proposals. He may appeal with the more confidence that we have received the approval of seven former Presidents, as well as of the younger generation of climbers, and he has a strong argument in his hands in the number of members who have already expressed their intention of placing themselves on

the higher subscription, and of this number, I may add, nearly half are country members. I trust that the appeal made, as we believe, in accordance with the true and permanent interests of the Club, will be met to-night in a way which will show how strongly we all have those interests at heart.

‘I call on Mr. Wicks to move the alteration in the Rules, of which notice has been given.’

The HON. SECRETARY having read Rule IX., regulating any alteration in the Rules of the Club, proposed that Rule XV. should read as follows:—

‘Each member elected after the 2nd of April, 1895, shall pay an entrance fee of four guineas, and an annual subscription of two guineas. Members elected prior to the 2nd of April, 1895, who have not notified their intention of paying the annual subscription of two guineas, are entitled to pay only the original annual subscription of one guinea. The subscription to be due on the 1st of January in each year. No member shall vote,’ &c.,

instead of as hitherto existing—

‘Each member shall pay an entrance fee of four guineas, and an annual subscription of one guinea; the subscription to be due on the 1st of January in each year. No member shall vote,’ &c.

He added: ‘I consider that after all the reasons brought before you by the President, I can add but very little, but I wish to impress upon you the necessity of passing the proposed alteration by a majority of at least two-thirds of the members here present. Out of about 500 members who are resident in the United Kingdom no less than 202 have already promised to pay the increased subscription, and I have no doubt that a considerable number of the members present will do likewise at the conclusion of this meeting. So far I have only had nineteen refusals, and the majority of the members who have sent these wrote approvingly of the action of the Committee. I will now ask Mr. Horace Walker to second the proposal, and afterwards will endeavour to answer any objections that members may make.’

Mr. HORACE WALKER: ‘I think after the admirable circular which has been sent out, and which I hope we have all read, and the remarks we have heard from the President, there is little for me to say. I admit I leave our nest with great regret. We have been there a great many happy years, and I am sorry to leave it; but still, if any reason for leaving it is required, it is comfort. Everyone who sees our new rooms will say there is the making of as comfortable a nest as that we are leaving. I formally second the proposal.’

Mr. C. E. MATHEWS: ‘It seems to me that the course proposed by the officers will be unanimously accepted by this meeting. Mr. Walker said it was unpleasant to leave an old nest, but life is full of new points of departure. It is perfectly certain the old rooms will no longer do. As Mr. Dent once said, the expression “close” friendship acquired a new signification in them. We are offered an excellent nest capable

of accommodating 250 people, where we can have the old home life which we had as a smaller body. The advantage seems to me apparent to everyone, without any corresponding disadvantage at all. I remember it was said that when Guizot first visited England, what attracted his attention most was that he saw on so many houses in London the expression "supported by voluntary contributions." Our scheme is supported by voluntary contributions. We do not ask any old member who does not wish to raise his subscription to do so. If anyone objects he will be thought none the worse of for paying one guinea. The scheme seems good, wise, prudent, and beneficial to the whole of us, and can cause no unsatisfactory feeling to a single member. I heartily support it.'

Mr. PUCKLE: 'I think the Committee have had information with regard to certain rooms being vacant in St. James's Street, and no doubt have inspected them; if not, I trust they will do so before deciding that the premises in Savile Row are the most suitable that can be obtained.'

Mr. NEWMARCH: 'Though, comparatively speaking, I am quite a young member, I must confess to having a sentimental attachment to the old rooms in St. Martin's Place; but I must also admit that they are unsuited to hold our meetings in, and I am sure that the proposed alteration is an excellent one in every respect. I have not met a single member who is in any way opposed to the change.'

Mr. HASKETT-SMITH: 'I should like to ask whether it is considered that the rooms in Savile Row will provide for the expansion of the Club during the next fifteen years.'

The HON. SECRETARY: 'I have seen the rooms referred to in St. James's Street, and do not consider that they would be as suitable as those in Savile Row; in fact, without undertaking structural alterations, which are always very expensive, they would not serve the purposes of the Club at all. It is a curious fact that, although members were appealed to at the December meeting to send suggestions to me, I received but one such suggestion prior to the issue of the March circular; no sooner, however, had this appeared than suggestions were numerous enough. One member, indeed, proposed premises in what seemed to me to be an unsuitable locality, and on making inquiries I found that the rent asked was 800*l.* a year, and the cost of alterations would amount to at least 2,000*l.* As to whether the rooms in Savile Row would suffice for the expansion of the Club during the next fifteen years, it must be remembered that the Alpine Club does not expand very rapidly, and, as far as I can judge, I see no reason why the proposed new premises should not meet all the requirements of the Club for many years to come, as they will hold meetings three times as large as our ordinary ones are at present. At all events, by the time they become inadequate—should they ever do so—the Club's finances will be in a position sufficiently strong to meet any new call.'

The PRESIDENT then put the proposed alteration to the meeting, and it was carried unanimously.

The PRESIDENT read a paper, 'Behind the Bernina,' dealing chiefly with the mountains of Val Masino and the Bergamasque Alps. A vote of thanks was proposed by Mr. Conway, which was heartily responded to.

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MOUNTAINEERING IN THE SOUTHERN ALPS OF NEW ZEALAND.

BY E. A. FITZGERALD.

ON December 31, 1894, I left Christchurch with my friend Mr. C. L. Barrow and Mattias Zurbriggen, of Macugnaga (Mr. Conway's guide in the Himalayas), for the Southern Alps of the South Island. Some other gentlemen of New Zealand accompanied us. After five days' travelling we reached the Hermitage, a small hotel in the Hooker valley. This was run by a company, lately bankrupt, and is now closed; we therefore had to camp higher up the valley. The first mountain which drew our attention was Mount Sefton, 10,359 ft. high. This rises abruptly from the Hooker valley, nearly 8,000 ft., almost sheer precipice. We decided to try it first, so on January 11 we started up and made a bivouac at an altitude of 5,390 ft. on a ridge between the Huddleston and Tewaewe Glaciers. We were accompanied on this attempt by Mr. Mannering, Mr. Ollivier, and Mr. Adamson, all members of the New Zealand Alpine Club. The day, however, proving unsatisfactory, we were obliged to return to the Hermitage. Next day being as bad, we started on January 14, and walked up to the Ball Hut. Next day we decided to try Mount Tasman, 11,475 ft., the next-highest mountain to Mount Cook in the island. Accordingly on the 15th we made a bivouac a little below Glacier Dome, between the Freshfield and Hochstetter Glaciers. It rained heavily on the following day, but we stayed on, and at 2.20 on the morning of the 17th we started, the party consisting of Mr. Ollivier, a young fellow called J. Clark, whom I had engaged as porter, Zurbriggen, and myself. We climbed up

the rocks to Glacier Dome, then cut across the Hochstetter Glacier, and taking the south-east arête attempted to gain the Silberhorn. We were driven back by bad weather about 10 A.M., when still about 1,500 ft. from the summit. We returned to the Ball Hut. The gentlemen of the New Zealand Alpine Club now left me, returning to Christchurch on the 21st. I came back with them myself as far as the Hermitage. The weather being fine, I determined to make another attempt on Sefton, alone with my guide Zurbriggen, so at about 5 o'clock on the night of the 22nd we started for our old bivouac. Next morning the wind was blowing very heavily, so much so that we could not keep our lanterns alight, and we had to wait for dawn before starting. About 4 o'clock we left the bivouac, but did not get very far, owing to the weather. We returned that morning to the Hermitage, and I arranged with my friend Mr. Barrow that we should try Mount Sealy, 8,631 ft., on the next day. Mount Sealy has been frequently attempted by the leading members of the New Zealand Alpine Club. Messrs. Harper, Johnson, Fyfe, Graham, Mannering, and Malcolm Ross have all at one time or another attempted the ascent, but the peak remained still virgin. At 5 o'clock on the morning of the 24th we left, and climbing Mount Ollivier, 6,298 ft., we skirted along the Sealy range, and ascended the mountain by the east arête. After a difficult climb, over extremely rotten rocks, we reached the summit at 3 o'clock in the afternoon. We stayed there about an hour, and returned by the same route, reaching the Hermitage about 10 o'clock at night.

On January 25, the weather being fine, I left with Zurbriggen for our Sefton bivouac. Next day the weather proved terrible, the snow coming down to the Hermitage.

On the 29th we made another unsuccessful effort. Our stores now running short, we had to drive down to Pukaki on the 31st, some forty-six miles, and get fresh supplies. My friend Mr. Barrow left me here, and returned to Christchurch. When I got back to the Hermitage I found that the rocks of Sefton were so covered with fresh snow that it was impossible to think of climbing it for the present, so we went up the Tasman valley to the Ball Hut, to have another try at Mount Tasman.

On February 4 we bivouacked again on the Hochstetter ridge, and on the 5th, at 2.20 A.M., we started for Tasman, the party consisting of Zurbriggen, our porter Clark, and myself. At 5.40 we reached the arête that we had tried

before, and at 10 o'clock we reached the summit of the Silberhorn. This mountain must be about 10,400 ft. From here we descended to the saddle, between the Silberhorn and Tasman, thence following the arête, we reached the summit of Mount Tasman at about half-past twelve. We reached our camp on the Hochstetter ridge at 6.30 that evening, the ascent having occupied sixteen hours. The route lay almost entirely over ice and snow, and up steep arêtes. A cutting wind blew the whole day, and we had great difficulty in getting down, our steps having been filled with powdery snow. The 6th and 7th of February we spent at our camp; during this time I sent Clark and Zurbriggen for fresh supplies. On the 8th, at a quarter past two in the morning, we started to ascend Mount Haidinger, 10,107 ft. We went up the Glacier Dome, then getting on to the arête leading to Haast, we followed this till within 1,000 ft. of the summit. Cutting across the east face, under some very bad overhanging glaciers, we reached the long arête that leads to Mount Haidinger. This is about a mile in length, and we had to follow all along it, cutting steps in places, as it was mostly snow. At 10.20 we reached the summit; it was a glorious day, and we got a magnificent view of the sea and the green valleys of the West Coast, also of the brown plains of the Mackenzie country towards the east. We came down by the same route, and reached camp at a little after six. Next day we rested there, and on the 10th we descended to the Hermitage, to try Mount Sefton again.

On February 12 we made an attempt, but were driven back by the weather at the bivouac. On February 14 we at last found a fine day, and at 12.45 A.M. we left our bivouac. We went straight up towards the Footstool, till we were nearly under its rock precipices; then we cut across the head of the Huddleston Glacier, and forcing our way through a tremendous ice-fall, the crevasses of which were larger than any I have seen in the Swiss Alps, we reached a small arête that led to the col between Sefton and the Footstool. We had most magnificent moonlight, or we should not have been able to accomplish this in the night. At daybreak we reached this col, and commenced the ascent of Sefton. Never have I in all my experience seen rocks in such a fearfully rotten condition as these, and Zurbriggen also agreed that in all his travels he had never seen anything to equal them. The slightest touch would at times dislodge tons. We had to go up a most fearfully steep arête to

reach the summit, near which there occurred what was very nearly being a fatal accident, a large rock falling down, throwing me completely over, and cutting two strands of the rope that held me. Zurbriggen was very badly placed at this moment, and was all but torn from his foothold. Had we fallen here we should have come straight down 7,000 ft. to the Mueller Glacier. At 10.25 we stood on the actual summit, which is an ice cone. We came down by the same route, without accident, as far as the glacier. Here we very nearly had to spend the night out, owing to some of the ice bridges we had crossed in the morning having broken through. It was not till past midnight that I regained the Hermitage; Zurbriggen was so fatigued that he stopped at the bivouac. We had been 24 hrs. underground the most severe work; also the tension on our nerves had been great all day, owing to the almost incessant danger. Zurbriggen admitted that never in his life had he done anything worse than this, not even when he and Eckenstein ascended the Dent Blanche by its face. We were considerably embarrassed going through the enormous crevasses and ice-fall of the glacier, being only two on the rope. We used crampons in this ascent, and without them we could never have reached the summit, as hours must be spent in step-cutting.

The New Zealand Government have long desired to find some feasible col to the West Coast. Up till now nobody has ever crossed the ranges. For the last few years survey parties have explored the valleys of the West Coast in search of this passage, but up till now without success. Zurbriggen and I, therefore, set ourselves the task of finding such a passage. I had had the advantage of several magnificent views from the peaks I had tried; so on the 19th we made a voyage of reconnaissance up the Hooker Glacier, till nearly opposite Baker's Saddle. I thought I now had found a feasible route, so on February 24, taking a small day's provision with us, Zurbriggen and I started, without blanket, or tent, or anything, to cross to the West Coast. We knew that we should have several days before us, but we thought it best to be as lightly laden as possible. We crossed over a saddle almost due west of Monte Rosa, about 6,997 ft. in the map brought out by the Royal Geographical Society of London of the central portions of the Southern Alps. We found an easy track up to this saddle, there being only 25 min. of snow work. On the other side, leading down to the Copeland valley, there was no ice or glacier at all. A

mule track could be built here, the pass resembling in many ways that of the Monte Moro leading from Macugnaga to Mattmark. We reached this saddle in about 6 hrs. from the Hermitage, and it has now been named Fitzgerald's Saddle by the Survey Department. The descent had to be made beside the Copeland River till we should reach Scott's house, situated on an island near the mouth of the Karangarua River. For two days and a half we fought our way down, amidst almost impassable scrub, before reaching our destination. We had considerable difficulty in fording the river, and we suffered a good deal from want of food and shelter, as it rained during one of the nights and part of one day. Here I met with Mr. Harper, who was doing some exploring for the Government; he agreed to accompany me back. We decided to return by way of the Fox Glacier; so on the 28th we left Scott's house, and travelling by way of the beach to Gillespie's township, and thence to Little's homestead, we reached the snout of the Fox Glacier. Here bad weather overtook us, and for two days we were obliged to camp in a shelter made for ourselves of ferns and the bark of trees.

On March 3 we went up the Fox Glacier as far as Chancellor's Ridge, and camped. Bad weather came on in the afternoon, and it snowed heavily. In the night it cleared, and the thermometer dropped to below freezing point. We suffered greatly from the cold. On the morning of the 4th we went up the Victoria Glacier and passed over a col to the Fritz Glacier. This col was named Blackburn's Col. We then ascended to the head of the Fritz Glacier, and reached the Franz Joseph Glacier by a col we named after Zurbriggen. We crossed the whole head of the Franz Joseph, and came over on to the Tasman side by a pass called Graham's Saddle, just at the foot of De la Bêche. We were not on the top of this saddle till about 8 in the evening. Here we had to climb down some steep rocks, and night overtaking us we were obliged to sit out the whole of it on a narrow ledge, not 200 ft. from the bergschrund of the Rudolf Glacier. It was extremely cold that night, the thermometer dropping to 25° Fahr., and a cutting S.W. wind was blowing. We also found out that we were in the line of falling stones; we could not move, however, owing to the darkness and the fact of the stones being all covered with ice. In the morning we reached the Rudolf Glacier without much difficulty in about half an hour. We now only had to walk down to the Tasman Glacier, and we soon reached

the Ball Hut without further incident. Here we were detained for a week by a fearful storm, and on March 11 I started down to reach the Hermitage. Here I met Mr. F. F. Tuckett, who had come up to see the Tasman Glacier, and I returned with him to Christchurch, arriving there on March 14, after having been away two months and a half. I left my guide, Zurbriggen, to bring down our tent and camp arrangement from the Hochstetter bivouac. When he went back there with Mr. Adamson, of the Hermitage, finding the weather fine, he started to ascend Mount Cook on March 14. Mr. Adamson went as far as 10,000 ft.; Zurbriggen completed the ascent alone, reaching the summit at 3 o'clock in the afternoon. He ascended by the north-eastern arête, not touching Mr. Green's route by the Linda Glacier at all. He described his route to me as extremely easy, but he was much impeded by the fresh snow that had fallen during the week of bad weather, when we were imprisoned in the Ball Hut. Mount Cook was ascended for the first time by a party of New Zealanders on December 25, 1894, by the western arête from the Hooker Glacier. Both Mr. Green and Mr. Mannering, on previous occasions, nearly reached the summit by following the Linda Glacier. I did not try the peak myself, as my desire was to do virgin peaks only. The climbing in the Alps of New Zealand is far different from and much more difficult than what we get in the Swiss Alps. The weather is of the most changeable character, and even the oldest weather prophets would not dare to prophesy for 6 hrs., much less for 24. The condition of the snow is worse than usually in Switzerland, and the rocks are so rotten that it would be difficult to believe how easy it is sometimes to dislodge huge boulders weighing tons and tons. The average snow line might be placed at 6,000 ft., while the valleys range from 2,000 to 3,000 ft.; thus a mountain like Sefton, which is only 10,359 ft., is in reality as high above the Hooker valley as the Matterhorn is above Zermatt. Another great difficulty is that of portage. It is almost impossible to get a man to come on to the glaciers; most have a species of supernatural dread of anything pertaining to ice. I only succeeded, after great difficulty, in getting one porter—Clark—and he was only nineteen, and could not, of course, carry the weights that an older man could. The rottenness of the ice on some of the glaciers is also wonderful; the Fox Glacier, for instance, flows down to within 700 ft. of the sea amidst almost tropical vegetation; the Franz Joseph Glacier flows down even lower, I believe.

*Punta di
Ciampono.*

Point 3,279.

N. Arête.

Corno Bianco.

E. Arête.

S.E. Arête.

*Corno di Puio
(on E. Arête).*



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Many of these glaciers advance very rapidly, such as the Franz Joseph, that moves 15 ft. in a day, so that Mr. Harper told me, when he was surveying it, his trigonometrical statements became quite useless after a few days. I should advise anybody coming out with the intention of climbing these Alps to provide himself with light Mummery tents and every species of condensed provision. I myself found, as a rule, that it was difficult even to carry a Mummery tent anywhere; almost all my camping was done in the open air, with simply a small square of macintosh sheeting to throw over myself to keep off the damp. This I could easily carry in my pocket. I was glad to learn afterwards that the New Zealand Government are now in process of cutting a track through to the West Coast by way of the saddle that I discovered on February 24. I cannot speak too highly in praise of my guide, Mattias Zurbriggen. Without him I could never have had the success that I have had. His energy was untiring. All the work devolved on him, as we could not get porters, and although I did as much as I could myself in the way of carrying loads, he, of course, did the lion's share of the work from beginning to end. His marvellous sure-footedness was the only thing that saved us from instant death on Sefton, and his patience in the face of the many obstacles that presented themselves to us, such as bad weather, which necessitated six attempts on Sefton, was marvellous. He took great interest in the work from beginning to end, as can be easily seen by his solitary ascent of Cook, made from pure love of the mountains and from the desire to see for himself what sort of a climb the mountain afforded.

THE CORNO BIANCO.*

BY CLAUDE WILSON, M.D.

(Read before the Alpine Club, May 7, 1895.)

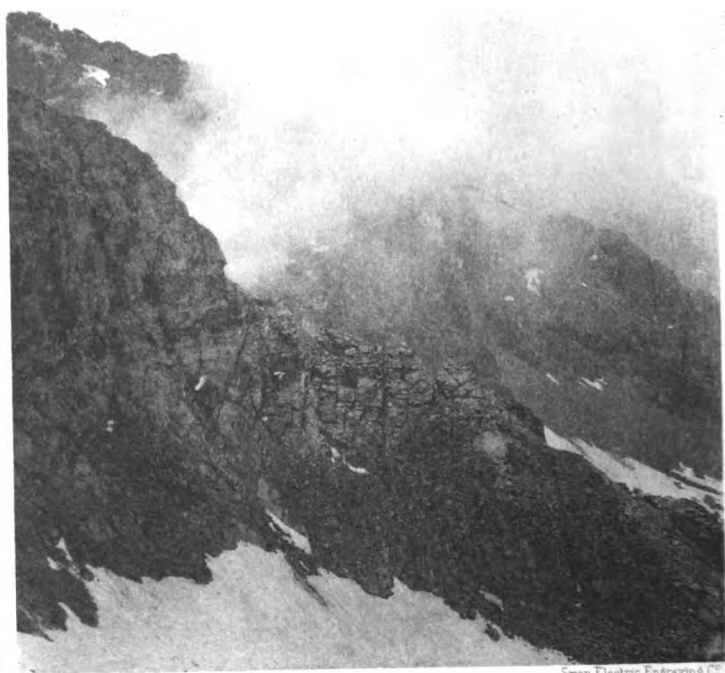
THERE are probably some members of the Alpine Club who have never even heard of the Corno Bianco, and doubtless more who, though familiar with the name, would find some difficulty in picking it out on a general chart of the Alps. This difficulty could not be removed in the

* The two illustrations which accompany this paper are reproduced from drawings by Mr. Ellis Carr, the general view being founded on Signor Sella's photograph from the Linty Hut, the other on a slight sketch made by Mr. Willink from the summit.

manner usually available in such cases, for the Corno Bianco is one of the very few Alpine peaks of any note to which no reference has as yet been made in the pages of the 'Alpine Journal;' a fact in itself sufficient to justify a paper which will supply climbers with the information they have a right to expect in the book of the chronicles of the Alpine Club. It is, however, not on this ground alone that I may rely in concluding that some account of the mountain and its climbs will prove acceptable; for even Mr. Conway, after having ransacked the literature of all nations, is obliged to confess that 'the published descriptions of the various routes up this mountain are exceedingly difficult to interpret,' and that 'accurate information is desired.' Those who have gone, 'Climber's Guide' in hand, to ascend the Corno Bianco, will heartily agree with the two sentences just quoted, if with little else that they there find recorded; for they will have got hopelessly mixed over the instructions, and will almost certainly have failed to discover the main point from which the muddle arises—namely, that the final peak has always been approached from a gap in the S.E. ridge, and not, as there stated, from a col in the N.W. arête between the point 3,279 and the top, a col which has certainly never been reached from either side, and an arête which, until the past summer, has probably never been traversed. Even with this point cleared up, the directions are by no means easy to follow, for, to change the scene of action for the sake of illustration, the traveller is next blandly invited to make his way from the Mansion House to Newgate by way of Holborn Viaduct. Yet the account reads so pat, and sounds so plausible, that some hours may be lost before it is discovered that the whole description is unreliable.

Having devoted some little space to applauding some of Mr. Conway's statements and to disparaging others, I can hardly leave his description of the Corno Bianco without a few more words of friendly comment upon four very definite statements to which I have not yet alluded. When told that the first ascent appears to have been made by Captain Albert in 1831, and that the summit commands one of the finest views in the Alps, I can only bow my head in humble acquiescence; but when informed that the mountain is carefully avoided by Philistine climbers, and that all the routes are perfectly easy, I have a word to say,—for a band of Philistine climbers laid siege to the mountain last summer, and succeeded in reaching its summit by two routes, neither

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The Corno Bianco from above the Col d'Oron

of which was perfectly easy. If, then, this beautiful peak has at last been desecrated by the foot of the Philistine (merely another name, I believe, for the odious gymnast or centrist), we must ask our fellow-members to look upon the evil as one of those perpetrated that 'good might come;' for, without this visitation, the information which even our revered and 'eccentric' vice-president desires would not have been forthcoming.

The Corno Bianco is situated on the ridge which separates the Val Sesia from the Val de Lys. This ridge is the direct continuation southwards of the main backbone, from which spring all the peaks of Monte Rosa—from Nord End to the Vincent Pyramide—whence it sinks gradually to the Colle d'Olen (9,419 ft.), where there is a first-rate mountain inn under the management of the Brothers Guglielmina, of Alagna. South of this the ridge becomes broken up into sundry minor peaks and passes, more or less rugged, before reaching its highest point (10,893 ft.) in the Corno Bianco—a very inappropriately named mountain, consisting of a bold mass of black rock, too steep to allow much snow to lie on any of its sides. The highest point of the Corno Bianco (marked 3,320 m. on the map) lies on a spur which runs S.E. from the main watershed, and it is only its lower point (marked 3,279) which touches the barrier between the two valleys. Southward from this point (3,279) is the Punta di Ciampono; and south of this again the Rissuolo Pass, the Cresta Rossa, and the Colle de Valdobbia, the last named being a well-known mule pass, on the summit of which is a small hospice, where food and beds may be obtained.

The general position of the mountain being thus defined, it will be evident to anyone at all familiar with the locality that the ascent ought to be practicable, without sleeping out, from four different starting points—from the Valdobbia hospice on the S., from the Colle d'Olen inn on the N., from Gressoney on the W., and from Alagna on the E. In spite, however, of being so advantageously placed, and of an outline sufficiently bold to attract the most adventurous of mountaineers, the Corno Bianco has been very seldom climbed by Englishmen. This fact was remarked by the Abbé Carestia, who published a very interesting, though occasionally obscure, paper on the Corno Bianco in the 1869 'Bollettino' of the Italian Alpine Club; and the only explanation he could suggest was that our countrymen could never have seen the peak, in support of which view he

urges the very singular fact that from nowhere in the Val de Lys, except quite at its head, is the Corno Bianco visible, while only two momentary glimpses of it are caught by the traveller who drives up the Val Sesia to Alagna. The excuse is, however, a poor one, for the appearance of the mountain as seen from the Otro bridge, just below Alagna, can hardly have failed to strike all who have visited that place; and, moreover, from the whole of the frontier ridge, from Monte Rosa to the Dent d'Herens, the Corno Bianco forms, though dwarfed, a prominent object in the landscape. Why it should have been so neglected by Englishmen it is difficult to explain; indeed, there would seem to have been some repelling power at work, for even Mr. Conway, though 'desiring accurate information,' and though in no danger (Heaven forgive the suggestion) of being accused of Philistinism, spent three weeks at the inn on the Colle d'Olen, where he must have been often sorely tempted, and yet, to make use of his own words, he 'carefully avoided it.' While, however, the number of strangers who have made the ascent must be extremely small, the Italians have shown their appreciation by making the mountain one of their favourite climbs. A quarter of a century ago the route from the Lago Nero to the summit was marked by frequent cairns,* and, when we arrived last summer at the top, we were surprised to find a well-filled book of visitors' names, stoutly protected by a weather-proof case.

Considering how popular the mountain is with our Italian *confrères*, it is perhaps surprising that they have not been more adventurous in discovering new routes to its summit; for, whether starting from Alagna, from Gressoney, or from the Valdobbia hospice, the routes which they follow all meet at or above the Lago Nero on the Colle de Rissuolo route, whence the summit is reached by an interesting but easy scramble, the first portion of which is known as the 'Passo d'Artemisia,' a name which refers in this case to a canalone or chimney, and not to a pass in the ordinary sense of the word. A common practice has been to sleep at the Valdobbia hospice, or at the chalets of the Pisole Alp, from either of which starting points the climb is a short one.

Travellers from Gressoney have a choice of two routes, the easiest way being to make straight for the Passo di Rissuolo, whence some skirt the flanks of the Punta di

* *Boll. C.A.I.* 1869.

Ciampono, and join the route to be next referred to, while others simply drop down upon the Lago Nero and commence the climb from there. The other and more interesting plan is to ascend from Gressoney la Trinité by the Netchio or Netz Glacier to its head, thence to skirt the face of the final peak, just at the foot of the steep rocks, and so to join the usual route to the summit. This traverse is not difficult, but there may be danger from stones which not infrequently fall from the great precipice, which seems to forbid all thought of a more direct attack. It must often have occurred to travellers who have reached the col at the head of the Netz Glacier that the best route ought to lead over the point 3,279, and so by the N.W. arête to the top. On paper it looks easy enough; and it must have been from a study of the map, together with the obscurity of the published reports, that Mr. Conway was led into the error of supposing that this was the usual way; but even such climbers as Messrs. Dent and Willink, who ascended from Gressoney in 1892 with the 'Climber's Guide' in their hands, thought it did not look very promising, and decided to skirt round the slopes above the Lago Nero. I shall return to this arête later on, when dealing with our own adventures, but may, perhaps more appropriately, allude at once to the question as to whether it had or had not been climbed before 1894. There is no doubt that the point 3,279 can be easily reached from the col between it and the Punta di Ciampono; and, however unpromising in appearance, it would seem strange that no one should have attempted the passage thence to the top. The Abbé Carestia alludes to the subject in the following words:— 'It has been said that it is possible to get to the top of the Corno Bianco from Gressoney la Trinité by the Netz Glacier, crossing the high hill which ends in the Risolo Alp, and after that following continually the crests to the point where they join the principal peak. Nevertheless, according to the inspection which I have studiously made last summer of all these places, as long as the human species shall be composed only of the *homo sapiens*, who, as is known to all, is not provided with wings on his arms for spreading out his flight like an eagle, nor with suckers on his feet for clinging to every sort of surface like a Gecko lizard, I shall never be able to give my adherence to those worthy but prejudiced people.' It is clear from the above quaint lines, written in 1869, that there had been some rumours of the ascent being feasible by this route, and of

course it may have been made by chamois hunters or others; but it has never been recorded, and the present-day guides of Alagna and Gressoney appear never to have seriously contemplated it.

Climbers who ascend the Corno Bianco from Alagna have quite as much choice as those who come from Gressoney in the matter of how to reach the final peak; but, as already stated, the eventual climb is always the same, or very much the same. The most common route is by Riva and the Vogna Valley, whence the Rissuolo path to the Lago Nero is reached; or, ^{as} is more usual and shorter, the valley is quitted earlier and the ascent made by the Alps of Pisole and Pisse into the barren and stony defile known as the Forno Valley, at the head of which the route we are considering meets that which proceeds from Alagna by way of the Val d'Otro. Thence the summit can be easily reached by keeping to the arête; but it is usual to descend somewhat upon the S.W. face, and so, following a line of cairns, to join the track up the final peak, above the Passo d'Artemisia. The route from Alagna by the Val d'Otro is more direct, but is looked upon, we gathered, as a rather break-neck undertaking, and one most difficult to find without local assistance. By it the crest of the great S.E. arête is gained, just at the head of the above-named Forno Valley, from which point to the top the route is identical with that from Riva. The method of effecting this junction is by crossing the Otro stream shortly after reaching the top of the waterfall, and then, passing by the Alpe Sender, to follow a track which runs between the Taylly Lake and the little lake above it. The path next leads through a rocky region known locally as the Passo di Piova (not a pass in the usual acceptance of the term), and so on to the little Glacier di Pujo, which is crossed obliquely, in order to gain the slopes leading up to the S.E. arête. This Passo di Piova may also be reached by another route, which takes the traveller first on to the Otro Glacier, and thence, crossing the ridge which descends from the Corno di Pujo—a rocky peak on the E. arête of the Corno Bianco, 'rendered from a remote date infamous by the death of Pujo of Alagna'—'touches,' according to the already mentioned Abbé Car-estia, 'upon a region too grim to be recommended to the devotees of Alpinismo.' Once only, it would seem, had the Corno Bianco, prior to our visit, been ascended direct from the Glacier di Pujo, and this ascent has, I believe, never yet been properly recorded. General Grober, the President of

the Italian Alpine Club, to whom I am, through the kindness of Signor Gonella, indebted for much of the information already imparted, has made some ten or twelve ascents of the Corno Bianco, and on one occasion he attempted and made the ascent by this route, scaling the steep rocks at the head of the glacier, and so reaching the crest of the S.E. arête at no great distance from the summit. 'But this is not,' says he, 'a way to be recommended, because it is exposed to very frequent avalanches.' This route must have been very much the same as that taken by us in the latter portion of our first climb; though, as I shall point out later on, we discovered a line of attack which was free from danger of falling stones or ice.

Such, then, are the routes which had been followed prior to the summer of 1894. They have been traced out with the greatest possible difficulty, for the printed records are obscure, and constantly refer to names such as Artemisia, Pujo, Forno, and Piova, which do not appear upon the Italian map. Considerable correspondence with M. Guglielmina, of Alagna, and finally with General Grober, has at last revealed the exact localities referred to by these names, and this has enabled Mr. Carr to produce a map which will, I hope, be of use to future climbers. It is, of course, based upon the Italian survey, but several corrections have been made, and notably two glaciers (that of Pujo, and one N. of the point 3,279) have been inserted, both of which are entirely wanting upon the Italian map.

On June 29, 1894, the party which was destined to find new routes up the Corno Bianco sailed from Folkestone. I have already said that there probably exist some members of the Club who have never even heard of this now famous peak; certainly on June 29, 1894, not one of the party just alluded to would have been able to give anything more than an evasive answer to the novice who had ventured to inquire as to the whereabouts of this mountain. The party consisted of our indefatigable secretary, Mr. J. H. Wicks, and myself. My wife and a lady friend completed the caravan, but, as neither of these ladies shared in the fatigues and glories of the ascent, we may dismiss them at once from our thoughts. Ellis Carr, our third man, was detained in England for an extra week on important business, and only came in for the second ascent. He will be again gracefully alluded to in the proper place.

The party in question proceeded by express train from Boulogne to Turin, where they experienced tropical heat,

and passed a restless night. Next morning they were again astir betimes, and, lurching at Pont St. Martin, arrived at the excellent *hôtellerie* of De la Pierre, at Gressoney St. Jean, in time to partake of an admirable and much-to-be-remembered dinner, which, though a merciful Providence concealed the fact from them, was to last them for some four or five days; for the next evening found them at the Hôtel Thédy, at Gressoney la Trinité. It was early in the season, and the *chef* had not arrived for the summer, so that our estimate of this hotel may very likely be erroneous. The impressions we gained were, however, not favourable, and we did not stop there as long as we had intended.

I have omitted to mention that at Pont St. Martin we met, by arrangement, a young man of the name of Henri Rey. He is a son of the redoubtable Emil, and had acted as sub-alpine porter to Morse, Wicks, and myself during the previous summer. Him we had engaged as porter, interpreter, and factotum in general. On July 3 Wicks and I, accompanied by the said Henri Rey, started from Gressoney la Trinité at 5.30 in the morning, for the purpose of getting into training; and, with this laudable object in view, we set ourselves the unenviable task of reaching the Sella Hut below the Fellik Joch, an altitude of 11,600 ft. We strolled leisurely up the valley to the beautiful Cortlis Alp (the Cœur du Lys), and there, sitting down and looking backwards, we saw, for the first time, rising behind and above the rocky face of the Ciampono, the black, forbidding, yet inviting cone of rock which forms the summit of the Corno Bianco. To see it was sufficient. We must go up it; and so, for the first time, we got out 'Conway,' and gathered that it could be ascended from almost anywhere, and that all the routes were perfectly easy.

We completed a hard day's work ere evening fell, and arrived at our hotel tired and very hungry about 6 o'clock. We had some hot-water soup, a box of sardines amongst us, the skin of a chicken grilled, a roasted potato apiece, the bones of the aforesaid chicken cold with a lettuce leaf or two, and a dish of stewed prunes. We continued to be hungry and tired; devoted the next day to packing; and, on July 5 crossed the Colle d'Olen to Alagna with some difficulty, as the mules which bore our baggage got stuck in the snow on the western side of the col. However, to make a long story short, we got over, and were most excellently received and cared for by the Brothers Guglielmina at the Hôtel Monte Rosa. Here we made some inquiries as to the

Corno Bianco, and learned that, while the usual route was by Riva, and commonly occupied two days, there was a difficult and dangerous way which led through the Val d'Otro, and that the ascent had been done in something under 8 hrs. We learned further that, without good guides, it was absolutely impossible to find the way, which was most intricate; and when we declined to allow our kind host to engage guides for us, and yet ordered provisions and said we should start at 2, and at any rate *try* to get up, a look of compassionate despair overspread his benign countenance, such as might have been evoked had we ordered mules to cross the Lysjoch.

On Friday, July 6, Wicks, Rey, and I started by lantern-light at 2.15, and zigzagged up the steep path through the wood which leads to the upper stretches of the Otro Valley. We made several wrong shots as to paths, always going wrong when there was a chance, that is to say, whenever the path branched; and, as we did not know that the usual route led across the stream and past the Taylly Lake, it is hardly to be wondered at that we fulfilled the prophecy of our friend Guglielmina, and went hopelessly astray, so far as the regular route is concerned. The result was that, when we had been going about 2 hrs. we found ourselves at the lower chalets of the Alpe Granus, and sat down to a second breakfast with the feeling that a good deal of the grind must be done.

It is very unfortunate that no photograph of the Corno Bianco appears to have been taken from any point of vantage in the Val d'Otro; for certainly, after daylight broke, the appearance of this imposing peak, standing alone at the head of the valley, was strikingly picturesque, and such as is well calculated to appeal to the artistic faculties, as well as to arouse into violent activity all those feelings which are characteristic of the Philistine mountaineer—I should say climber. It is not, however, from this side alone that artists and photographers have neglected to record the features of this peak; for, after making many inquiries, the only procurable photograph appears to be one by Signor Sella from the Linty Hut below the Lysjoch, which, though interesting from a topographical point of view, is taken from too great a height to do full justice to the mountain. A very beautiful photograph of the summit appearing through a rift in the clouds was shown by Mr. Dent at the last winter exhibition. This picture is, from an artistic point of view, highly effective; but, as Mr. Dent remarked of another

view, showing a gentleman in the act of escaping from a steep chimney, it can hardly be considered satisfactory as a portrait. However, peaks, like persons, cannot *all* enjoy those photographic advantages which are granted only to a few of the elect, and the Corno Bianco must await the advent of fame before it can expect delicate attentions at the hand of the photographer.

Having by now finished our breakfast, and completed the above artistic and philosophic reflections, we had to turn our attention to more prosaic matters, and to settle, without delay, by which way we should proceed. We imagined ourselves to be on a route which had often been traversed before, but we did not know at all which way it went. It appeared to us, however, that, whatever should prove the final course, we ought, in the first instance, to get up on to the little glacier which the map showed to lie at no great distance from us. Consequently we were soon again *en route*, and, passing the upper chalets, set ourselves to climb the lateral moraine of the glacier—an enormous moraine, which conceals its proportions from those who view it only from below. Up and up the slopes of this interminable stony waste we toiled, and arrived in a somewhat exhausted condition, at 6 o'clock, upon the glacier, where we spent nearly $\frac{1}{2}$ hr. in making a general survey of our position. We still imagined that we were on the regular track; and now the real puzzle began, for it appeared that four different routes might be possible, though we had not rested many minutes before we discarded one as being highly dangerous, and doubtless responsible for the gigantic proportions of the moraine we had just ascended. The north arête of the mountain evidently offered a very fine climb, though whether some of the towers and clefts would prove negotiable or not seemed doubtful. Further, it was now evident that, had we wished to make the ascent by the N. arête in its entirety, we ought to have kept nearer to the stream in the valley, instead of climbing the moraine. Then there was the great rock face which descends from the N. arête to the glacier; and possibly the northern portion of this face may offer an interesting and feasible climb by which the crest of the ridge can be gained, but any attempt at a direct climb to the top must, even if possible, prove frightfully dangerous, for no part of this cliff appeared to be free from avalanches of stones, which kept falling at intervals of from five to fifteen minutes, and all of which eventually reached the glacier by way of a great collecting couloir,

which, judging from recollection, appeared to offer the only route towards the upper stretches of the precipice. Thirdly and fourthly, there were two routes, each of which involved gaining the crest of the eastern arête, which descends with great steepness from the summit to a col, whence it again rises slightly, and culminates in the rocky point which appears to have long been known locally as the 'Corno di Pujo.' From this point the arête again descends by more gradual gradients, and it would have been very easy for us to cross this ridge low down, and so gain the region, midway between the Taylly Lake and the Pujo Glacier, which I have already alluded to under the name of the Passo di Piova. The comparatively easy route which we should thus have traversed is that which is described by the Abbé Carestia as 'bordering upon a region too grim to be recommended to the devotees of Alpinismo.' Into the very heart of this weird region, however, we determined to make our way, and, if possible, to reach the col between the Corno di Pujo and the Corno Bianco by the fourth of the routes I have alluded to—that is to say, by a direct attack upon the rock wall of the E. arête at the point where it is lowest. With this object in view, our best plan was clearly to keep working gradually upwards towards the head of the glacier, maintaining at the same time a constant though slight inclination to the left, so as to avoid the fag end of the rock avalanches, which were continually falling from the cliffs below the N. arête. Such a line would lead us gradually to the base of a somewhat ill-defined couloir, which seemed to be the most suitable place for us to take to the rocks.

We had been going for 4 hrs., including halts, and presumably we had some 4 hrs. more of work still in front of us. Our mountain rose sharply—almost from where we were—and we must already have mounted at least 4,000 out of the 7,000 feet we had to climb. To imagine we had 4 hrs. more of work seemed impossible, and when Rey asked how long it would take us to reach the top, I said that I should judge 3 hrs. at the outside. As a matter of fact it took us $6\frac{1}{2}$ hrs. hard work, exclusive of halts. Another time, from knowing the way, and so avoiding wasted time in trying bits which proved mistakes, we could doubtless save at least 2 hrs.; and, as this was our first real climb of the season, no doubt we travelled slowly; but the expedition is a tolerably stiff one, and must, I fancy, always need a fair allowance of time.

We had done well to take our ease while we could, and

have a good look at the mountain; for, in the earlier part of the morning the mists had lain heavy in the valley, and so interfered considerably with the view; while an hour later we found ourselves in the midst of hummocky clouds, and got but few more glimpses worth naming.

We put on the rope and started, Wicks leading, and Rey in the middle. The *névé* began to get steeper, and Wicks had to kick, and later on to cut, steps. The want of training soon began to tell, as it was sure to do; and I, tramping leisurely in the rear, and feeling quite fresh, shouted, 'Let me come and cut the steps, Wicks, and then you'll be fresh for the rocks when we get there.' Wicks made no objection, and so I went in front, but was soon reminded that step-cutting, even in *névé*, at the beginning of the season, is not the easy matter which lingers in the memory; however, as I had boasted of my freshness, I must needs go on and pretend I liked the job. One thing I did though, which eventually cost us a good $\frac{1}{2}$ hr. of extra work. I perceived that, by cutting more directly upwards, I could cross the *bergschrand* and reach the rocks with very much fewer steps than would have been needed had we struck them at the base of the *couloir*. This I did, and as the rocks were more difficult than they looked, I was very glad to let Wicks go in front again, more particularly as he got quite stuck before he had climbed a rope's length away. I could not see him, but the ejaculations which from time to time fluttered down, coupled with the fact that there was no demand for more rope, led me to conclude that he was not making satisfactory progress. Some time was thus lost, but eventually we managed to work round a nasty little traverse to the right, and found ourselves in the *couloir* which we ought to have struck at its base. From here, up to a small snow plateau somewhat below the col, the rocks are by no means difficult if one only goes the right way, and the right way may be summarised by the following formula—'When in doubt keep to the left.' Above the snow-patch this rule no longer holds good; indeed, I know of no rule that does, for the final pitch of rock, though not high (perhaps 60 ft. or 100 ft.), is probably rather difficult however it is taken. We gained the ridge by a stiffish little climb, the stiffest 'bit' we came across on either of our expeditions, and I doubt if we should find an easier way another time.

To climb this wall of rock from the glacier to the col had taken us 3 hrs., exclusive of $\frac{1}{4}$ hr. spent in feeding

when rather more than half-way up. Another time 2 hrs. would doubtless prove ample. We were sorry that Carr was not with us to enjoy the climb, but, for one reason, were very glad to have Henri Rey. The work was pretty hard, and we were not particularly fit, and young Rey possessed one great advantage as a companion on the present occasion. 'He is a very decent chap, and he carried all the traps;' and for this service we were indeed very thankful.

Arrived at the col, between the Corno Bianco and the Corno di Pujo, we were surprised to find that, instead of being on a saddle of rock with a precipice on either side, we were landed on the margin of a high-lying glacier, which ran right up to our col, and completely filled in the hollow between the E. and the S.E. arêtes of the Corno Bianco. None of the maps gave any hint that there was a glacier in this position, but we have since discovered that it has long been known, to the few who really know the mountain at all, as the Glacier di Pujo. On to the snows of this small glacier we now strode, and surveyed, as well as the mists would allow us, that portion of the climb which still lay before us. Two routes commended themselves to our attention—a direct attack upon the E. arête, and an attempt upon the rocks quite at the head of the glacier. The former would evidently offer some splendid climbing, and Wicks was anxious to attack it. It was, however, nearly 11 o'clock—that is to say, we had already been 8½ hrs. at work—and there was still a considerable height to be scaled; and, though the arête looked very tempting, we could not conceal from ourselves the possibility that it might prove too much for us, for the rocks looked very difficult. Obviously, if we got stuck when about half-way up, we should not have time to try any other route that day, and should have to return to Alagna defeated, a notion which was not to be endured. Consequently, we let discretion get the better of our valour, and determined to try and find a way up the shorter wall of rock at the head of the glacier, and so gain the crest of the S.E. ridge at no great distance from the summit; thus making a route similar to, or identical with, that followed on one occasion by General Grober, but which he declines to recommend on account of falling stones or ice. It was obvious that stones fell from these rocks, most of which reached the glacier by one of two couloirs quite at the head of the cirque; and, as the rocks on the left looked very rotten, and those on the right very smooth and difficult, we were prepared to run a

certain amount of risk, and enter, if need be, for a short distance, one of the two couloirs. As luck would have it, though, we found it possible to climb the rib of rock which runs between them, a rib which did not look at all promising from below. Nasty climbing it was, for the rocks were steep, and quite devoid of hand-hold. We progressed slowly up them for nearly $1\frac{1}{2}$ hr., walking up a staircase of small flat steps, broad enough to hold half the foot or less, with here and there a more ample platform on which one or both feet could rest. If these rocks were glazed with ice they would certainly be dangerous, as there is no place from bottom to top where a rope can be hitched. As it was, we found them rather trying to ascend, and thought that to go down them would be worse. At last the crest of the S.E. arête was reached, and once there our task was easy, for we soon discovered the cairns which, marking the route from the Lago Nero, reach the ridge rather below the point at which we struck it. Following the line of cairns up through the mist, we arrived at the top at 1.30— $11\frac{1}{2}$ hrs. from the time we left Alagna.

The summit was adorned by two wooden poles, believed to have been originally intended to occupy an erect position, but one of which was lying prone upon the rocks, while the other, whose base was engaged in a small cairn, fluttered helplessly from side to side with every gust of wind. These relics of past achievements we saw, as also divers cards and the already-mentioned visitors' book; but the magnificent view which ought to have rewarded our toils was hidden from us by a curtain of mist so thick as to confine the prospect to ourselves and our immediate surroundings. We spent a short $\frac{1}{2}$ hr. on the top, and, as the time was advanced and the weather thick, determined to descend by the way of the Lago Nero, though, under more favourable conditions, I think we should have been tempted to try the jagged N. arête which had excited our admiration so much from below. In any case we did not want to descend the rocks by which we had climbed from the Pujò Glacier, and the fog was too thick to permit of our searching for an easier route into the Taylly Glen: consequently the cairns were followed, and the Lago Nero reached in $1\frac{1}{4}$ hr. Here we unroped, ungaitered, and finished off the remaining provisions; and, starting again at 4 o'clock, arrived at Riva at 6.30, and at Alagna at 7.

We were most kindly received on our return, and our success, which did not seem to be doubted, appeared to

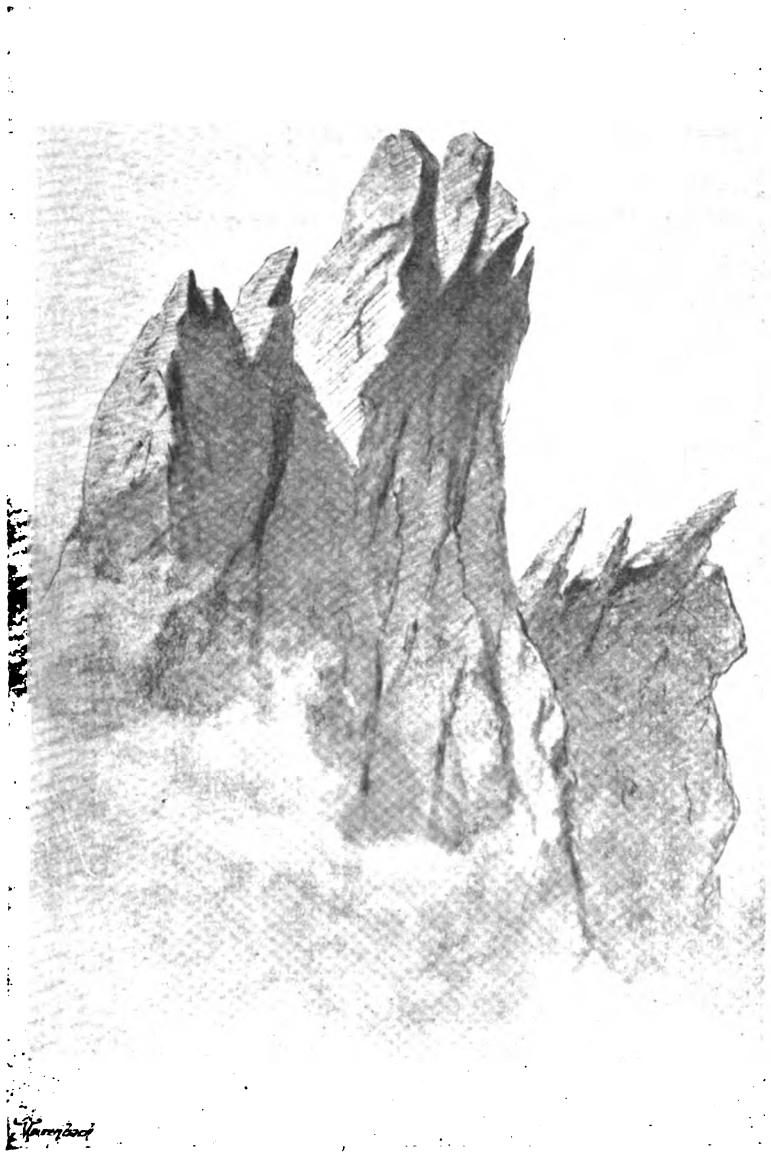
excite in our hosts a sympathetic enthusiasm which we considered most magnanimous, especially in those balked of the doubtless anticipated pleasure of being able to say, 'I told you so.' An excellent repast was followed by prolonged repose, and the next day was devoted exclusively to basking in the sunshine, varied only by the reception of Carr, who arrived in a cab shortly before dinner.

Sunday, July 8, a lovely though an intensely hot day, was spent in visiting the beautiful upper stretches of the Sesia Valley, and in making preparations for another attempt upon the Corno Bianco—this time by the N. arête. Towards evening the weather seemed quite perfect, and we turned in at an early hour in full confidence of fine weather at all events till sunrise; but, ere we were called at 1 o'clock, the district had been visited by a smart thunderstorm, and the sky still looked so threatening that some time elapsed before we decided to make a start. At 2.20, however, we filed out of the village, and made our way for rather more than an hour before again holding a council of war as to the desirability of advancing or returning. There was some discussion, but the ayes had it, and fortunate it was that they prevailed, for after sunrise the weather improved, and remained fair though foggy all the day; and, while we again got no views to speak of, there were some very effective peeps, and we certainly had a very enjoyable climb. Breakfasting at the Alpe Granus at a quarter to 5, and proceeding thence by a more prolonged grind than we anticipated, the Passo dell' Uomo Storto was reached shortly after 7. Here we relieved Rey of the burden he had been bearing, and, sending him back, put on the rope, and commenced our climb. A large stone man marked the Punta dell' Uomo Storto, where $\frac{1}{2}$ hr.—from 8 to 8.30—was spent in discussing a hearty meal, and inspecting the arête which rose sharply just in front. It appeared to us that there must be many towers or gendarmes on the ridge which would have to be turned on the Gressoney side; but, as a matter of fact, it turned out that the ridge was more easy than it looked, and that most of the bits which had appeared from below to be isolated towers were in reality only steep pitches in the arête. At one point we felt so sure that there must be a series of great teeth in front of us that we traversed a considerable distance horizontally on the Gressoney face, crossed a great couloir, climbed out of it on its opposite side, and so, keeping to the rib of rock which formed its further wall, again reached the crest of the arête. Another party may be recommended to keep to

the main ridge all the way, as they will thus get more interesting climbing, and will meet with no obstacle likely to cost much time or trouble until they reach the gap where the great couloir just alluded to strikes the ridge. Here they may perhaps be forced to make a slight détour, but a short descent will soon reveal a practicable route. We gained the point 3,279 at 10 o'clock, only $1\frac{1}{2}$ hr. after leaving the Punta dell' Uomo Storto. This part of the climb had proved tame in comparison with what had been anticipated, and when we looked across the foreshortened ridge towards the true summit, so short a distance from us and so very little higher, it certainly appeared that $\frac{1}{2}$ hr. ought to suffice to effect the transit between the two points. As a matter of fact the climb along this crest took $1\frac{3}{4}$ hr., and proved to be a very delightful, though by no means a very difficult, scramble. Only at one place did any obstacle appear which seemed seriously to threaten our ultimate chances of success, and the very formidable appearance of this passage must, I think, have deterred previous climbers from actually trying it. At this point the arête itself and the eastern side of it are equally hopeless, while the rocks on the right hand face certainly present an appearance suggestive of great difficulty. We paused for a moment, but quickly put our shoulders to the wheel, and found the climb to be decidedly easier than it looked. The remainder of the ridge was traversed either on the crest or on the Otro side, and the final peak again afforded a good bit of scrambling, the summit being reached in thick fog at noon.

The ascent had thus occupied 9 hrs. and 40 min., 1 hr. and 40 min. of which had been spent in halts. Of the 8 hrs. of actual going, half had been spent in gaining the Passo dell' Uomo Storto, and the remaining 4 in the actual climb of the arête. We went very leisurely before roping, but progressed at an average pace upon the rocks. Another party would be almost sure to make better time in the valley, and would probably save something by aiming straight for the gap between the point 3,279 and the Punta dell' Uomo Storto, instead of traversing this little peak.

An hour was spent upon the top, and then, at 1 P.M., in thick mist, we took careful compass bearings, and embarked upon an attempt to descend by the E. arête. Very soon the rocks got steep and smooth, and we were forced to bear a little to the right; but we were greatly surprised when, in about 20 min., we struck a line of cairns, and found that we had worked back on to the usual road down by the S.E.



CRAGS ON THE NORTH ARÊTE OF THE CORNO BIANCO.

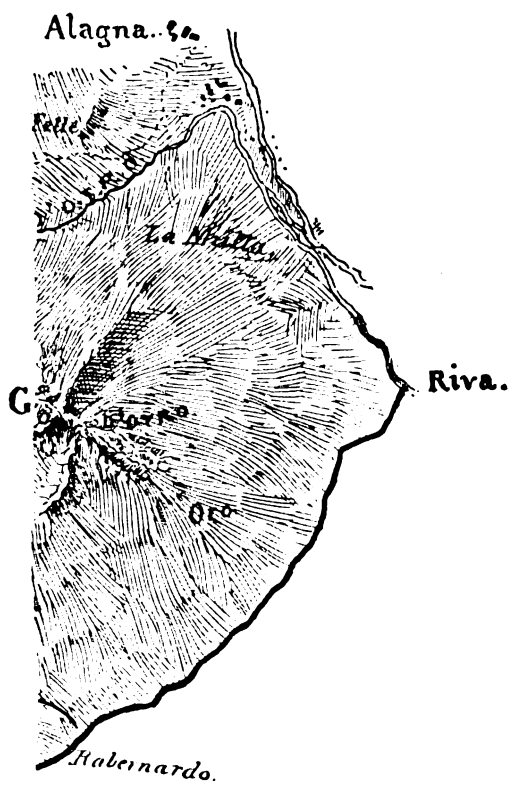
ridge. Not feeling much inclined to hark back, we next sought a direct line of descent to the Pujo Glacier—*i.e.* north of that by which we had ascended three days previously. Here we wasted the greater part of an hour, and explored some most uninviting rocks; but, though the question of continuing the descent by this route was stoutly argued for some time, the noes had it, and we climbed up on to the arête again.

The route by the Lago Nero had, however, proved very tedious, and so, being anxious to find a more direct way down, we adhered to the crest of the S.E. ridge, ever and anon peering down into the mists in hopes of discovering the easy route, which we knew must exist, on to the Glacier di Pujo. Eventually we arrived at a place where the easy arête ended in a little gap or col, beyond which it again rose in fantastic towers and pinnacles. Here we made an attempt to escape downwards upon our left, but were shortly balked by steep and apparently bottomless cliffs; and so, returning quickly to the ridge, were glad to find it possible to make our way down on the opposite side by way of the stony defile we now know under the name of Forno. Whilst descending this valley in thick and impenetrable fog we found much difficulty in grasping the precise geographical position which we then occupied, so much so that opinions, backed by bets, were freely exchanged as to our whereabouts. Consequently, when, emerging into the clear atmosphere below the mists, we found ourselves in the vicinity of a small group of chalets, we felt constrained to make inquiries and crave direction from the only inhabitant we could see. The ejaculations indulged in by this venerable crone did not convey much meaning to either Wicks or to myself, but Carr had the advantage of us; for, having to travel out from England alone, he had wisely provided himself with the necessary text-books, and, taking advantage of his enforced leisure, had learned the Italian language in the train. Consequently he lingered behind, and entered into a lengthy conversation with the ancient peasant. A little further on we sat down to wait for him, and were presently pleased to note his previously careworn countenance appearing over the hummocks wreathed in the most satisfied of smiles. 'Good,' we thought; 'he has found out all about the route, and has been given some tip for a short cut.' And so we called out, 'Which way, Carr, old man?' But the question seemed to puzzle him. 'Which way?' he said; 'I don't know.' 'Why, what on earth were you talking to that old

ass for if not to be told the way?' 'Who—that old chap?' said Carr. 'Oh, he's a sensible old fellow; he thought I was the King of Italy, and you chaps my two gillies or chasseurs, or something.' Wicks and I ran on in disgust, but whenever we looked round we saw Carr's face smiling with regal magnanimity and urbanity. Once well below the mists, it was not difficult to perceive that we were making our way into the Vogna Valley, whence we sped quickly homewards, reaching Alagna a few minutes before 7.

Such, then, is the account of our two climbs. We were very unfortunate in having such thick weather on both days, and some points, such as the ordinary route up from the Taylly Lake, yet remain, in our minds, uncertain as to details. Still we had two most enjoyable days, and did some work which appears to be new; and, further, the investigation which has thus been elicited has, I trust, cleared the air for future climbers, who, it is hoped, will get better views than we did.

In concluding, I may point out that there yet remain several conceivable routes to the summit of the Corno Bianco hitherto untrodden by the foot of man; and certainly the E. arête may be commended to those who look for a good climb, and who, more true to the gymnast's code than we were, are less careful about getting to the top. In any case, my hope is that this paper may help to stimulate those who visit these attractive valleys to climb the Corno Bianco before leaving the district, and doubtless some of these will find and record new routes; so that our illustrious and revered vice-president may, in the next edition of his 'Climber's Guide,' be able to speak in some such terms as these: 'The Corno Bianco has, within recent years, become a favourite resort of Philistine climbers, who have reached its summit by numerous routes of varying difficulty, only one of which is perfectly easy, and whose records of these routes are singularly lucid and easy to interpret.'



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MOUNTAINEERING AND MOUNTAIN SUPERSTITIONS IN THE JAPANESE ALPS.

By WALTER WESTON, late British Chaplain, Kobe, Japan.

(Read before the Alpine Club, June 11, 1895.)

IN the precincts of an ancient temple near my former Japanese home there stands, or rather sits, what is perhaps the most remarkable member of that numerous family of Daibutsu ('great image of Buddha') so familiar to the traveller in the 'Land of the Rising Sun.' In the features, it is true, we only find the conventional expression typical of that absolute calm and impassivity, that Nirvana to which the devout Buddhist aspires. But on the forehead, in place of the little boss of metal that stands for the 'sacred Jewel of the Law' the artist has fixed an electric light. It is a true parable, a speaking likeness, of the Japan of to-day, with the novelties of modern civilisation engrafted on the old-world ways and ideas that have for a thousand years and more moulded the life and character of this most interesting race.

One is nowhere so struck with this extraordinary contrast, or combination, if you will, of ancient and modern, as when one leaves behind the crowded capital and treaty ports, with their miniature reproductions of our own British navy, or of the military system of our Teutonic neighbours, and penetrates into the interior of Japan. For it is there, amongst the great mountains, in intercourse with the simple, kindly country-folk who dwell beneath their shadows, that we seem to feel ourselves transported into almost another world. Our intellectual surroundings, at any rate, are those of the ninth century rather than of the nineteenth.

I feel I ought, perhaps, to offer an apology to the members of the Alpine Club for venturing to read a paper which can present but little of interest from a purely athletic point of view. I have chosen two expeditions whose interest, whatever it may be, consists rather in the curious customs and superstitions of the mountain dwellers, than in the mountains themselves viewed from a climber's standpoint, although, after all, the aims of the club are catholic enough to embrace all this, and, indeed, whatever else of interest is

afforded by the mountains we all love so well. Whether it be to the geographer or the gymnast, to the artist or the antiquary, nothing will come amiss ; for I take it that because we are mountaineers whatsoever belongs to the mountains we count not alien to us.

Towards the close of a summer afternoon some years ago I was standing on the summit of a mountain pass looking westwards towards the Japanese Alps in full view of the finest peaks of that beautiful range. Amongst all the rest two summits stood up boldly against the opalescent sky of a dying day—Yarigatake, the ‘spear-peak,’ the Japanese Matterhorn, 10,500 ft. in height ; and Jōnendake, whose graceful triangular form recalled in miniature the peerless Weisshorn, Queen of the Pennine Alps. Yarigatake I climbed three years ago,* but not until last summer did I find myself on her slightly less lofty neighbour.

My starting-point on this occasion was Matsumoto, a town from the top storey of whose picturesque castle, rising from the chessboard-like expanse of paddy-fields, a fine near view of the mountains is gained. Passing along the busy main street of the town, we are greeted by the familiar figure of our old friend the pipe-mender as he squats at his work in the grateful shade of a wide-overhanging eave. Further on, as we emerge into the open fields, a solitary coolie at a wayside cottage is engaged in pounding rice at a sort of treadmill, lifting by the pressure of his foot a huge wooden hammer, which he then lets drop with a dull monotonous thud into a mortar hollowed out of the section of a tree-trunk.

A hot and dusty journey of seven or eight miles took my two companions and myself across the sun-scorched plain due west of Matsumoto to the hamlet of Iwahara, which nestles at the base of the foot-hills formed by the eastern spurs of Jōnendake. On our way thither we passed through the village of Toyoshina, once one of the most prosperous in this locality, but which we now found had been almost entirely destroyed by fire. At least 500 out of its 600 houses had gone like match-wood in an incredibly short space of time, and it was only now rising phoenix-like from its ashes. At one end of its desolated street stands a curious erection called *suzume-dai*, or ‘cooling-table,’ an elevated platform shaded by a roof of dried pine branches, and raised high enough both to catch the cooling breezes of eventide and to

* *Alpine Journal*, vol. xvii. No. 126.

afford at other times an uninterrupted view over the tops of the now resurrecting houses. At the other end an odd sign drew attention to the fact that a house was being rebuilt after the conflagration; for, at the spot where we should lay the corner-stone, there were fastened to a post, fixed firmly between a pair of pine-poles, a fan, a bow, a huge arrow with a trident head, a number of small arrows, and a *gohei*. The *gohei*, to which I shall again refer later on, is the sacred wand from which hang strips of curiously cut white paper, and with which we are so familiar, in the Shintō temple of Japan, as the seat of its presiding divinity. Originally it was merely the strips of cloth, hanging to a branch of the *sakaki* tree, offered at the temple, but has been gradually evolved into its present form and use.

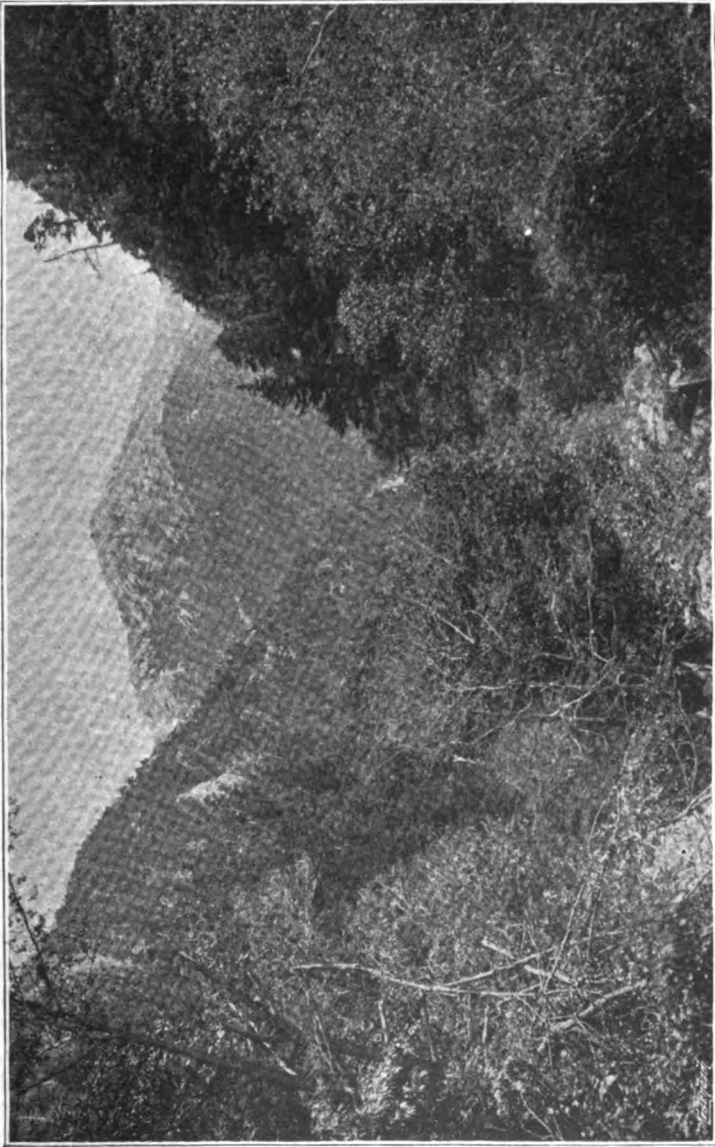
On our arrival at Iwahara our first business was to seek out the *sonchō*, or 'head-man' of the village, for, as there was no inn in the neighbourhood, I knew we must throw ourselves upon him for hospitality and for help on our expedition. However, previous experiences had made me bold, for it has been often in the most remote districts that I have found the perfection of politeness. Nor were we disappointed. Indeed, I must own I was scarcely prepared for the reception we got. The *sonchō*'s house stands hard by a fine grove of cryptomeria, and a large wooden *torii* (gateway) gives access to a courtyard in front of the porch. Passing through the door in a wall on the right we found ourselves in a lovely little garden—one of those liliputian landscapes in which the artistic soul of the Japanese so delights. As we stepped up on to the broad verandah we were received with the kindest of welcomes. First greeted us the eldest son, and after him the *sonchō* himself, a stately old gentleman of three score. Then came an attendant with tea and cakes, and over the tiny pipes next produced we told our business. Nothing could have been more delightful than the polite and attentive interest with which our plans were listened to and talked over. With many humbly worded apologies for the 'disgustingly filthy accommodation' (as the Japanese conventional phrase puts it), the *sonchō* placed a lovely pair of guest-rooms at our disposal; and as that night we lay on our *futons* (quilt beds), listening to the sighing of the breeze in the tall trees and to the weird call of the night-hawk echoing in the hills beyond, we felt we were in clover indeed.

As day dawned we were up and away. Not only, however, had the worthy headman provided us with a trio of

bear-hunters to act as guides and porters, but with them joined us Yamaguchi junior, arrayed, by way of lending 'tone' to the appearance of our party, in a curious black felt hat and dirty white cotton gloves far too large. The combination of these with his Japanese costume was undeniably odd, and reminded me of the days when, in a certain Japanese city I know of, those imperfectly instructed in the wearing of Western costume held it to be the height of fashion to encircle the neck with a bath-towel by way of a comforter, and one gentleman was seen to arrive, I was told, at a morning function in evening dress, without socks, his manly bosom uncovered by a shirt, and with a celluloid collar tied round his neck by a piece of string.

Leaving the *sonchō's* house behind, we passed quickly through the gloomy grove, and forded the swift torrent of the Karasugawa ('the Crow River'), whose chilly waters spoke eloquently of their birth-place in the snows far up the mountain. Then came a delightful tramp due west, of five or six miles over a wide *hara*, a sort of prairie which often covers the lower slopes of the loftier mountains. It is these prairie regions, and the mountain woodlands generally connected with them, that form the home of that wonderful variety of plants in which Japan is so rich; and no one who has viewed this variegated floor of living mosaic will wonder at the name by which it sometimes goes—*ō hana-batake*, 'the great flower-field.' Besides many familiar English wild-flowers, the beautiful *Lychnis grandiflora*, varieties of magnificent lilies, such as the *Auratum* and *Tigrinum*, the purple Iris, and the deep blue Kikyo (*Platycodon grandiflorum*), give a gorgeous colouring to the face of the field.

Above the *hara* our track began to wind round the slopes of intervening hills, but the densely wooded valley then narrowed, and we were at length compelled to take to the bed of the wild torrent below. For the next five hours our work was extremely rough, and the route lay up what one might compare to a sort of moraine of smooth boulders partly submerged in water and inclined at a gradually steepening angle. Over these water-rounded rocks we made our way as well as we could, leaping from boulder to boulder, wading through the icy cold rapids, or, by way of pleasant variation, scrambling round some intervening buttress of rock to rejoin the torrent higher up. By 8 P.M. we reached the first snow at a height of 7,200 ft., at a spot where, in the gloomy ravine, dark cliffs rose steep and forbidding on either hand. No



JONENDAKE FROM THE SOUTH-WEST.



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sooner was the word to halt given than at once our hunters threw down their packs and fell to prodding about with their sticks in the holes and crannies of the broken rocks near the snow in a state of wild excitement. They said they were searching for a particular sort of lizard which, when caught, skewered on long sticks, and dried, is highly esteemed as a remedy for the diseases of children. In China also this is much thought of in the native pharmacopœia, and goes by the name of the 'stony son of a dragon.' In an advertisement drawing attention to its virtues in a Shanghai newspaper some time ago it was stated that 'the medicine is not only unusually effective against the plague, but it is also infallible against different kinds of cholera, vomiting, diarrhœa, colic, apoplexy, sunstroke, asphyxia, typhus and typhoid fevers, ague, diphtheria, liver and stomach aches, tetanus in children, surfeiting, small-pox, poison, malaria, all sorts of tumours and inflammatory poisons, &c.' After leaving the home of this remarkable reptile we had a further two hours' scramble up the torrent bed, but were then able to take to the precipitous hill side on its right bank. Then came a stiff pull up some disintegrated granite rocks, which finally landed us on a sort of col on the north side of our peak, at a height of 9,000 ft., and here, on a level ridge partly covered by the *goyo no matsu*, or five-needle pine, we decided to bivouac.

It was now 7.15 p.m., and as the day dies young and suddenly in these low latitudes, even at high altitudes, we speedily set to work to clear a space in the forest of small pine-trees for our camp, and whilst some looked after making a fire the rest went off in search of water. This was to have been procured from a torrent not far distant; but, as we found that the thirsty summer heat had long since absorbed it, we were compelled to have recourse to a neighbouring slope of snow. My waterproof ground sheet was therefore requisitioned for a bag, and served the purpose well, though the water that resulted had too much flavour of india-rubber about it to be pleasant. What a delightful bivouac that was! The shadows of the dark pine forest lay all the deeper behind the blazing firelight, and the only sounds that broke on the still night air were the liquid notes of the nightingale, or the ceaseless murmur of the mountain torrent a thousand feet below. No wonder that when dinner was done one was loth to leave the warm blaze with the quaint stories and cheerful chatter of our hunters. Bret

Harte himself might have been there when he wrote those lines:—

Above the pines the moon was slowly drifting,
 The river sang below :
 The dim sierras, far beyond, uplifting
 Their minarets of snow.
 The roaring camp-fire, with rude humour,
 Painted the ruddy tints of health
 On . . . face and form.

The spirits of our companions expanded with the genial warmth, and old Fujiwara, the oldest of the trio, a tall lithe fellow with curiously curly hair for a Japanese, regaled us with the yarn that explains the strange title by which the mountain is known; for usually the Japanese name their peaks with reference to their personal appearance, but Jōnendake is quite an exception to this custom.

‘*Mukashi, mukashi,*’ ‘a long time ago,’ the hunter began, ‘a band of poachers who went after a certain sort of scarce and much-prized timber found only in a neighbouring valley, used to make this very spot their camping ground when crossing over this northern shoulder of the mountain. One night, however, they were startled to hear wafted down on the night breezes from the summit the mingled sounds of the voice and bell of a Buddhist priest at his evening prayers. Hour after hour it went on, until at last, conscience stricken, they fled from the spot never to return. When at last the story leaked out, the awe-struck peasants in the far-off Matsumoto plain gave the mountain the name it still possesses, “Jōnembō,” or “Jōnendake,” *i.e.* “the peak of the ever-praying priest.”’ An irreverent listener to the story of my hunter, however, was heard to remark that the explanation of the name, like the timber, was rather far-fetched.

A grand panorama was unveiled as the next morning broke and the grey mists slowly melted before the rising sun. Due west of our camp, seen over intervening valleys, rose the pointed monolith of Yarigatake, whose south arête joins the precipitous ridges and towers of Hodakayama, a mountain that gets its name of ‘The mountain of the standing ears of corn’ from its suggestive appearance. The southward prospect is shut out by the upper part of our peak, but to the east the eye sweeps over the Matsumoto plain to the hills beyond, conspicuous amongst which the volcano of Asamayama rolls up a silvery grey column of mingling smoke and steam. Towards the south-east the

graceful cloud-capped cone of Fuji San tells us where the long breakers of the Pacific are rolling in at her feet.

Whilst revelling in these delights, I was startled from my reverie by the crack of a rifle, and presently from the forest came Fujiwara into the camp, with the body of a curious black and white crow he had just brought down. This was quickly popped into the pot, and with the addition of *miso* (bean curds) and *warabi*, a sort of mountain fern, proved a welcome addition to the hunters' breakfast.

A rough clamber over the broken blocks of andesite of the north arête took us in an hour from our bivouac to the top of Jōnendake, on whose rugged head for the first time the heel of the foreigner now was planted. On the summit, just about 10,000 ft., we found a small cairn erected by Fujiwara and his friends on a previous occasion. This was originally adorned by a tiny shrine dedicated to the *tengū*, a mythical monster of the dragon tribe, but now only a few scattered chips remained. One of the hunters, however, remarked that he and his companions were quite as good looking as the *tengū*, and in the midst of the clouds now surging round the summit the trio sat for their likenesses. The dragon, as is well known, is, both in China and Japan, credited with special influence over rivers and rain, and Jōnendake has several times, on the occasion of excessive droughts, been the scene of the curious practice termed *amagoi*, or 'praying for rain.' This is an illustration of the class of customs known as 'sympathetic magic,' of which various instances may be found in most works on ethnology, though hitherto I have failed to find any reference in them to these superstitions as practised in Japan. On Jōnendake the ceremony is as follows:—A party of hunters are selected for their agility, strength of limb, and power of lung, and, as the representatives of the peasants of Iwahara, proceed to climb the peak that owns the *tengū* as its guardian god. With branches of the creeping pine they make a great bon-fire on the summit, and, as well as they can, proceed to give a mimic representation of the storm they have come to pray for. Primed with *saké* (rice beer), they fire off their guns, and with unearthly yells roll down from the topmost ridge great blocks of the phonolitic andesite, and as these go crashing down the steep cliffs on the eastern face the hunters invoke the attention of the dragon-deity to their prayers. 'And,' as one of my coolies added, 'after a very long drought, the rain nearly always comes within a few days.' Sometimes, however, no answer is vouchsafed, and the

tengu's shrine is then destroyed in disgust. This reminded me of a case that happened in the plains where the guardian divinity of the village shrine had so long been deaf to the farmers' prayers, that they at length threw down his image from its stand, and with imprecations loud and long pitched him head foremost into the evil-smelling paddy-field, telling him to stay there for a while to see how *he* would feel after a few days' scorching in the broiling sun that beat down so mercilessly on their parching fields.

In another district a party of villagers go in procession to the bed of a mountain stream, headed by a priest who leads a black dog destined for sacrifice. At the chosen spot they tether the animal to a stone and forthwith make it the target for their bullets, arrows, and other missiles. As soon as the poor beast's life-blood is seen to bespatter the rocks, the peasants throw down their arms, and lift up their voices in supplication to the *genius loci*, exhorting him to send down a cleansing shower to purify the spot from its defilement. Custom has prescribed in Japan, as well as elsewhere, that the animals sacrificed on these occasions shall be black, symbolical of the wished-for storm; whilst at the ceremonies when fine weather is sought the offering must be one of spotless white.

On our way down the mountain Fujiwara secured a fine ptarmigan, which he shot in the creeping pines near our camp. These creatures, which, like the hares that are found in the higher thickets, turn white in winter and are very tame. When, three weeks ago, I saw their European congeners running about on the heather of Ben Lomond, I could have almost imagined myself back in Japan. Just before reaching the *sonchō's* house on our return in the evening Yamaguchi junior very abruptly detached himself from the party, and without a word hurried into the family quarters. For a while I felt decidedly uncomfortable, thinking I had unwittingly given him offence. By-and-by, however, when a domestic approached and politely begged me to 'honourably condescend to enter into the honourable hot bath,' I realised that his haste had simply been owing to his desire to be hospitable in having my tub ready on my arrival—a little bit of spontaneous kindness which showed one that getting in hot water is not always a proof that one has 'put one's foot into it' with one's friend.

And when on the following morning we said our *sayōnara*, and regretfully turned away with the reiterated 'Please honourably deign to come back again' still ringing

in our ears, I could not but feel how well deserved the title is by which in bygone days this kindly people delighted to call their home '*Kunshi no koku*,' 'the land of gentlemen.'

In the neighbourhood of Matsumoto an off-day for rest can nowhere be more agreeably spent than at the delightful thermal springs of Asama no Yu. Indeed, I am free to own that such places, with their variety of situation and style, are amongst the pleasantest accessories to mountaineering in Central Japan. Whatever may be the character of the establishment that has grown up round these natural hot baths, whose waters are credited with such marvellous therapeutic powers by the simple country folk who flock to them, it is certainly very refreshing after some days' hard scrambling to spend a quiet week end and relax one's stiffened limbs in the grateful warmth of the *onsen*, the sulphur spring. Sometimes, as here, one finds accommodation at a comfortable inn on the outskirts of a busy plain. Sometimes it is a group of chalets in the heart of the Alps where a secluded valley is shut in by precipitous tree-clad mountain sides. Or, more quaint and curious still, you find yourself the first foreign traveller sharing a rude shanty with a party of rustics far up the side of some tall peak, where the customs of the bathers are primitive in the extreme, for in all these men and women bathe together *in puris naturalibus*, but the conduct of each and all is above reproach, and you will find more decorum in these out-of-the-world *yūba* (bath-houses) of Ō Renge San than at those of Leuk and elsewhere in 'civilised Europe.'

At one time, in the towns, a police regulation ordered that, out of deference to foreign feeling on the subject, the sexes should be separated. The order was obeyed in letter, if not in spirit, and many places saw reformation in a piece of string stretched across the large tank to denote 'this side for ladies, that for gentlemen.'

The Japanese appreciate the value of hot baths to a most extraordinary extent. In one out-of-the-way place I know of they will stay in for a month at a time, and sit with large stones on the knees to keep them from floating or 'turning turtle' in their sleep. The caretaker of this establishment, a cheery old boy of three score and thirteen summers, stops in the water practically the whole winter through. At another spot the villagers apologised to a friend of mine for being what they called 'so dirty;' 'for,' they said, 'you see, it is the summer time, and we are too busy to bathe more than twice a day.' 'How often, then, do you bathe in

winter?' inquired my friend. 'Oh, we have less to do then and can have four or five baths daily, and the children get into the water whenever they feel cold!'

This, however, is a digression. I want now to ask you to come with me further south, to the great sacred mountain, Ontake, 'the August Peak.' This remarkable summit is a volcano which would be fairly called extinct were it not that sulphurous fumes and other proofs of dormant activity still show it to be instinct with the breath of life, not dead but only sleeping, even though no eruption has been recorded in historic times. Geographically it is cut off by a wide and deep depression from the main range of the Japanese Alps, whilst, figuratively speaking, it is still more differentiated from those peaks by reason of the extraordinary hypnotic trances in vogue amongst the pilgrim bands whose special goal it is during the months of July and August. It was to the village of Fukushima, near its eastern foot, that our steps were now directed. Leaving the town of Matsumoto by its southern end we quickly skirt the narrowing plain called here Kikyō-gathara, 'the moor of the Kikyō,' and soon find ourselves once more in the hill country on the Nakasendō, the 'middle of the mountains road,' which we traverse for 40 miles of the most picturesque part of its entire length. A striking feature of the route is the romantic bridges spanning a river that dashes often far below whilst keeping us company mile after mile as we pass now through a narrow defile, or again along a gradually opening vale. A good night's resting place was found at Niyegawa, near which begins the district of Kiso, whose name is given to the most celebrated of all the swift mountain streams of Japan. It is this region that is so famous throughout the Empire for the quality of its timber. The principal varieties are beech, horse-chestnut, walnut, maple, and Spanish chestnut, often of enormous size. The most interesting spot on the way from Matsumoto to Fukushima is the Torii-tōge, a pass 4,200 ft. high, which gets its name from the *torii* or sacred gateway on its summit. As the *torii* is always connected with the idea of approach to a sacred spot, the one before us has its *raison d'être* in the fact that it is only a score of miles from the foot of the holy mountain Ontake, whose serrated snow-streaked ridge on a clear day is well seen from here standing out imposingly against the sky. A steep descent of 1,000 feet brings us down the serpentine windings of a well-made path to Yagohara. A little further on, at Miyanokoshi, a good view greets us of Komagatake, the Shinshū representative of the

many mountains of that name, as it stands up like a great wall to separate the Kiso valley on the west from that of the Tenryūgawa, 'the river of the heavenly dragon,' its eastern neighbour. The latter is noted above all others in Japan for the number and the grandeur of its rapids.

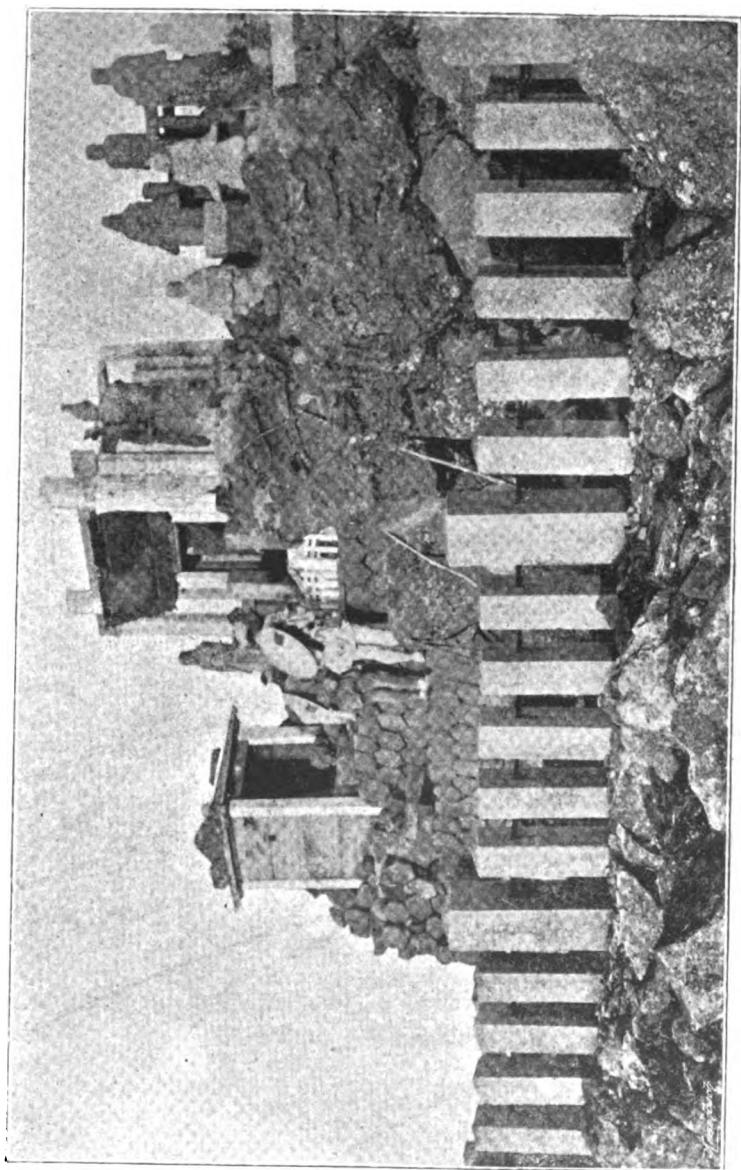
Fukushima, our starting point for the ascent of Ontake, is a picturesque village some 23 miles from the summit of the peak. Its brown cottages, with wide overhanging stone-weighted roofs, remind one of Alpine *châlets*. From here a walk of seven miles or so brought us through cool ravines and shady forest groves to the *fumoto* or true base of the mountain.

Here, at the shrine of Iwo-haiden, the pilgrims purchase their alpenstocks, which, as well as the white garments they are wearing for the ascent, they get stamped by the priests with the Sanskrit and Chinese characters that certificate their climb. The *Kannushi* or 'god-guardian,' who has charge of the shrine, proved most kind and hospitable, and even offered to stamp my garments and my Alpine stick, and to give me a certificate of the ascent without my troubling to make it!

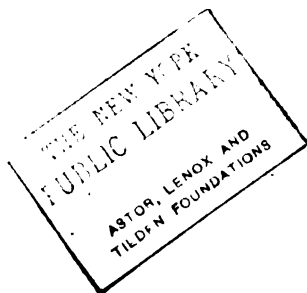
From Iwo-haiden our path continued to wind in and out of the eastern spurs of Ontake, the repeated transition from cool shade to dazzling sunlight under a cloudless sky sometimes nearly taking one's breath away. Mounting at last to a higher ridge we arrived at the Matsuwo rest-house, the first of the little huts which mark the successive stages of the mountain-path. These are the Japanese representatives of the Swiss Club huts, and are supposed to be ten in number—the first at the foot, and the tenth at the top. The whole mountain is compared to a quantity of rice, enough to fill a *shō* (three pints) measure, spilt on the ground in a conical heap. This *shō* is divided into ten parts, each called a *gō* or gill, so that the huts at the several stages are known as *ichigōme*, *nigōme*, &c., or, as we might put it, 'first lap,' 'second lap,' and so on. It has been remarked that the use of a measure so suggestive of liquids in connection with so dry a subject as a Japanese mountain-path may possibly strike us as somewhat inappropriate. But then Japan is, after all, in so many respects, the country of contradictions.

Whilst we were breakfasting in the Matsuwo hut a band of pilgrims, descending from the summit, clad in ceremonial white, and headed by a *sendachi*, or president, arrived upon the scene. Our curiosity was aroused, as one by one they

laid aside their dusty garments and passed out of the hut to where, behind a tall memorial stone, a little cascade fell with a musical splash into its rocky basin. And soon above the voice of the waterfall the sounds of prayer arose. Each of the travellers in turn took his stand under the icy fall, and, with chattering teeth and shivering limbs, repeated his Litany of penitence for past transgression, with prayers for future freedom from all sin. It is this sought-for purity of soul of which the white garments are the outward symbol, and to which the ascent of Ontake is believed to conduce. The *sendachi*, however, is marked by other insignia. A *kesa*, a sort of Buddhist stole, adorned with tufts of silk, encircles the shoulders, whilst up his sleeve, or sometimes stuck inside the back of the collar of his tunic, he carries the sacred *gohei*—the wand with notched white papers pendent from the top. In his hand he bears a *shakujō*, a staff whose top is adorned with loose metal rings, and which is intended to serve as alpenstock, siren-whistle, and field-marshal's baton all in one. The instrument owned by this particular *sendachi* was most remarkable. He informed me confidentially that it was called *kumo-kiri*, 'the cloud-cutter,' that he had obtained it through a direct revelation from the god of the mountain himself by the use of mystic incantations, and that even when the densest mists obscured the way it never failed to point out the proper path. A charming old gentleman, with snow-white hair, consented to join the group we photographed from the door of the hut. He had come, he said, from far off, in the hope that the supernatural influences of the sacred peak would drive away a disease from which he was suffering, for it is at Matsuwo that one of the mountain divinities is said to have his home. Bidding farewell to our friends, we mounted quickly to the top of a grassy ridge above, to be greeted, on overtopping it, by a distant view of the twin tops of Norikura, 'the saddle peak,' lying almost due north. Though the hut near here goes by the title of the 'Place of the 1,000 Pines,' it stands, on the *locus a non lucendo* principle, on a now treeless slope. But a little higher up, on entering the lower edge of the forest belt, at a height of 6,000 ft., we found a profusion of chestnut, birch, *Chamæcyparis obtusa*, and several sorts of fir. Leaving the gradually thinning forest at an altitude of some 8,000 ft., we emerged on to a steep spur covered with dwarf pine, alder, and mountain ash. The rest-house at this stage is known as Nio-nin-dō, or the furthest point to which women in former times were suffered to ascend.



PILGRIMS AT THE SHRINE ON THE SUMMIT OF ONTAKI.



A similar erection was once to be found on the Murayama route on Fuji San ; but when I was last on that peak I found it a mere heap of chips, and the wrecked shelter now bears eloquent witness to an exploded belief—viz., that woman was far too inferior a creature to set foot on so sacred a summit. The chief distinction now usually made between the sexes in the matter of mountaineering appears to be that, while men wear white stockings as part of their climbing costume, it seems to be more usual for the ladies to don leggings of lavender silk. From the hut at Nio-nin-dō the eastern wall of the crater lip now rose before us, and from hence our gradually steepening route lay over rough ridges of lava, streaks of snow, and broken rocks. And here we caught up the oddest specimen of a pilgrim I ever saw. A veritable 'Excelsior' was he: his garments once were white, but are now toned down to a grimy grey; for in this connection cleanliness is not regarded as next to godliness, and the greatest proof of sanctity is seen where the dirtiest clothes proclaim how often the wearer has mounted the sacred peak. Round his shaggy head of hair was tied a white towel, and on his back he bore a motley load of offerings for the Spirit of the summit. Amongst other things there were a wooden tablet decorated with spear-heads, a pine branch, and a large tress of hair, which he told us had been sent up as a votive offering by a woman, whose proxy he was; and, to complete it all, in his horny hand he bore a 'banner with a strange device'—*Ontake jinsha*—'for the Ontake shrine.' Later on, as we were examining the little shrine and its attendant array of images of guardian gods and deified heroes of bygone days, our friend came up to present his offerings, which he did with prayers of touching earnestness, and gestures of the strangest kinds.

The night was spent at the highest of the huts in the company of the *Kannushi*, who guards the top; and an interesting person he proved to be, reminding one in spirit of the warlike prelates of the Middle Ages. Talking about the war in Korea then progressing, he waxed eloquent as he told how fond he was of fencing and of shooting, at which accomplishments he was keeping his hand in, he said, in the hope that he might soon be called to join the armies then in the field. The same sentiments had been expressed, I remember, by old Fujiwara, our hunter-guide on Jōnen-dake, for the whole 40,000,000 of this patriotic people were truly as one man in heart and hope touching the campaign.

As we repaired on the morrow, in the small hours of the

morning, to the little rocky platform that supports the shrine, through the grey mists the distant peaks of the Japanese Alps to the northward were beginning to rise, as it were, like rocky islets from a sea of clouds.

Below us lay the highest of the six great craters that stretch in a long line on the highest ridge. The waters of this volcanic lake are held to possess miraculous powers both to heal and to harm. Some of the pilgrims I have seen bearing large bundles of paper, which they saturate in the water, to take it back to their far-off homes, where portions are bestowed on suffering friends, and when made up in the form of pills, are said to cure an astonishing catalogue of maladies. But care must be taken with the water, for we were told with awe how on one occasion an impious climber, having ventured, travel-stained as he was, to bathe in the lake, was smitten with a sudden and shocking death for his act of desecration.

As we stood on our vantage-point 10,000 ft. above the sea, the arrival of a number of pilgrims from below told us that the sun was about to rise. Reverently the white-robed party approached the shrine and made their offerings with earnest prayers. Then turning eastwards, as the shrine itself faces, they proceeded, as the first beams of light shot up into the sky, to pay their devotions. First of all, they clapped their hands to call the god's attention to their supplications, and then broke out in chorus into a *harai*, or chant of 'prayers of purification.' Then came the extraordinary pantomimic gestures, known as *in-musubi*, 'seal-bindings,' the weirdness of which it is almost impossible to describe. With intense energy the fingers of both hands are tied and twisted into the strangest combinations of knots, like the 'cats'-cradles' made by children at play. Each twist, each knot, has its own meaning, and resembles nothing more than a sort of 'deaf and dumb alphabet' spoken with all the expression that physical action can put into it. For language it really is meant to be, addressed to those invisible powers of evil against whose malevolence the pilgrim is praying for protection. As each sign is made, a violent grunt accompanies it by way of emphasis. These pantomimic prayers are concluded with a curious digital device called *kuji go shimpō*, 'the exorcism of the nine strokes.' The pilgrim holds the fingers of his right hand clasped in his left so as to represent a sheathed sword, and then suddenly drawing them forth proceeds to cut the air with nine swift strokes, five horizontal and four vertical,

made alternately, accompanying each with a Sanskrit syllable, the meaning of which, however, is quite unintelligible to himself. This device is apparently both offensive and defensive, typifying as it does both the exorcism of the powers of evil and at the same time setting up a barrier against their inroads on the soul.

During all this time the *Kannushi* sat stolid in his sentinel box by the shrine, looking on with a contempt born of excessive familiarity; but to me the whole scene was strange and weird to a degree. And yet a stranger sight was still in store. As I crossed the platform, I suddenly came in sight of another knot of pilgrims, who, to escape observation, had hidden themselves behind the shrine, and, when I came upon them, were engaged in the weirdest pursuit of all.

Holding before him, between the palms of his outstretched hands, a *gohei*, one member of the party was squatting on a rock while the rest sat facing him, as well as they could, in Indian file. The bearer of the sacred wand was acting as a sort of medium (the Japanese word *nakaza* = 'seat between') of communication betwixt his friends and the gods they desired to consult. Closing his eyes, the *nakaza* sat silent and still, whilst his companions broke out into a subdued chorus of prayer. After a while the face of the medium began to assume a livid hue, unearthly gaspings issued from his throat, and the *gohei* trembled violently in his hands. His eyes turned upwards in their sockets until only about half the iris was visible, and a series of convulsive jerks at length brought the *gohei* to a standstill above his forehead. This was the sign that the god had come. Thereupon the *maeza* (i.e., the pilgrim next in front of the *nakaza*) who had been all the while acting as a sort of precentor to the rest, bent reverently towards the medium, and, with his forehead on the rock between them, inquired what might be the honourable name of the august visitor, who had now replaced the personality of the medium by his own presence. In a hoarse whisper came the reply, 'I am Fukan Reijin'—the posthumous name of the canonised mountaineer who, a century ago, had made the first ascent of Ontake, and in whose honour at that moment a festival was being held at the mountain foot.

As the *maeza* heard the name, he went on to prefer the requests of the respective pilgrims. All these were simple enough, referring, as they did, to the weather they were

likely to have on their travels, the health of those at home, or their business prospects during the coming year. In a low voice the medium pronounced the god's replies, quite orthodox in their oracular vagueness, though I recollect that he predicted cloudy weather for that afternoon—an answer I afterwards had cause to remember, when, a few hours later, we plunged down the slippery slopes of the hillside in the forest through a thunderstorm of pitiless violence. When all the questions put had been dealt with, the medium lowered the *gohei* in token that the spirit had departed, and that he was now himself again. The *maesa* then arose, and, with well-meant but necessary violence, set to at rubbing the body and pounding the limbs of the medium, so stiff and rigid had they turned in the cataleptic trance. Soon, however, the man came to, and the party went away, having, in the meantime, taken no more notice of my presence than of the stocks and stones around us.

As I hope to deal more fully elsewhere with the question of the origin, &c., of these curious practices, I will only now remark that they are quite evidently nothing else than a survival of those forms of Hindu mysticism which, after first finding their way into China, were at a later date in some sort imported into Japan. The great teacher Kūkai, or, as he is better known in Japan by his posthumous name of Kōbō Daishi, visited China in 804, for the purpose of studying Buddhism more closely under the guidance of the celebrated abbot Hui-Kwo, and on his return he founded the sect of Shingon, 'the true teaching;' and it is especially in the mystic practices of this and similar sects, widely spread, though generally secretly indulged in, in Japan, that we see so striking a resemblance in all essential features to such as, for instance, the Yoga system, which were without doubt in some sort borrowed by Chinese Buddhism from the Hindus. Those who care to examine the question more closely will find most interesting notes on the Yoga practices in Sir Monier Williams' 'Buddhism,' Lecture X., and again in the remarkable book, more recently published, on 'Lamaism in Thibet,' by Surgeon-Major Waddell.

After seeing, as I have from time to time, the curious hypnotic trances of the Japanese pilgrims practised both on the sacred mountain, and also, by special invitation, at their private *séances*, it almost appears as if Major Waddell might have witnessed the thing himself, as on page 141 he writes: 'The Yoga doctrine of ecstatic union of the individual with the universal spirit had been introduced into Hinduism about

150 B.C. by Patanjali, and is not unknown to Western systems. It taught spiritual advancement by means of a self-hypnotising to be learned by rules. . . . Asanga, importing Patanjali's doctrine into Buddhism and abusing it, taught that by means of mystic formulas—as spells, the reciting of which should be accompanied by music and certain distortion of the fingers (*mudrá*), a state of mental fixity (*samādhi*) might be reached, characterised by neither thought nor annihilation of thoughts, and consisting of sixfold bodily and mental happiness (*yogi*) whence would result endowment with special miracle-working power. . . . These miraculous powers . . . may be used for exorcism and sorcery, and for purely secular and selfish objects. Those who mastered these practices were called Yogācārya.'

But I must not forget that I am dealing with a mountain as well as with the mystic rites of which it is regarded as pre-eminently the special home. As we were making a sort of *col* of Ontake we did not retrace our steps of the previous day, but descended by a steeper and in some respects a more interesting route. On the lower slopes we met a couple of Shinto priests, whose dingy garments and shaggy hair, as they stood for their photographs, contrasted curiously with the smooth-shaven crowns and brighter robes always worn by their Buddhist brethren whom we so often meet with in the plains.

At Ōdaki, a finely situated hamlet near the southern foot of the mountain, we found everything *en fête* in commemoration of the one-hundredth anniversary of the first ascent by Fukan Reijin, already referred to. The *matsuri*, or festival, lasted through the earlier half of August. A cluster of tall bamboos, with long streamers fluttering in the breeze, stood sentinel over a magnificent monolith which bore the great man's name and title. This was an oval slab of stone 14 ft. by 8 ft., erected on a mound at the entrance to the village, and its presence there reminded us of the Chamonix commemoration of Balmat's world-famed feat.

At Ōdaki we spent the night, and in the cool freshness of the early morning walked over the hills and crossed the Kisogawa at a lovely spot, so gaining the Nakasendō, near Agematsu, and returning to Fukushima later in the day. As my Japanese companion and I threw ourselves on the chairless floor of our inn that evening after dinner, we fell to studying the words of wisdom from a Chinese classic with which a thoughtful landlord had adorned the sliding screens of our apartment. Quite incidentally one of these threw a

little light upon the dilatory way in which that worthy used to call me in the morning. The quotation declared, 'There is no fixed time for retiring or rising, but each one does as he feels inclined.' And the other, in a metaphoric vein that displayed a remarkable knowledge of anatomy, warned us sententiously that 'Though life, like the entrails of a sheep, be many thousands of miles long, yet fame is ever as short as the horns of a snail.'

THE ORTLER GUIDES AND THE GERMAN AND AUSTRIAN ALPINE CLUB.

IN consequence of several complaints which reached us respecting certain second-class guides of the Ortler district, who stated to their employers that they were in the habit of breaking up parties of four or more into parties of two, and roping one guide and one traveller together when about to cross névé, because such was the rule made by the German and Austrian Alpine Club, we have made polite inquiries of the official representatives of that club, and we are assured that such statements, if made by Tirolese guides, are devoid of all foundation. Not only does no such rule exist, but the German and Austrian Club expressly recommends guides not to go alone with a single traveller on to névé, and a provision in this sense will be found, *e.g.*, in the Sulden Tarif. The danger of going two on a rope over névé was pointed out by Herr Purtscheller in the 'Zeitschrift' (1894, p. 140), and the officials of the D. u. Oe. A.-V. adhere to this view. It is suggested that the Cevedale accident in 1878 frightened the ruck of guides in that region, and induced them to adopt on their own account this unwise habit. Of course the best guides in the Ortler district are as able and competent as any in the Alps. It is only to the ruck that these remarks apply.

THE ASCENT OF MOUNT SEALY, NEW ZEALAND.

BY C. L. BARROW.

AT the Hermitage Mr. FitzGerald, with whom I am travelling, proposed to me, on January 23, to start for Mount Sealy the following day. I gladly agreed. We left the Hermitage at 4.45 A.M., the party consisting of Mr. FitzGerald, Zurbriggen, Clark, and myself. The morning promised everything in the shape of fine weather. I at

first led the party to the path up Mount Ollivier, FitzGerald not having been that way before; but, after following for about an hour, Zurbriggen remarked that he was not used to such zigzagging ways, and thought we should advance quicker if we went straight ahead. Accordingly he took the lead, and we reached the lagoon some third of the way up at 6.10 A.M. Here we halted for some 20 min., and were much struck by the perfect reflection of Mount Sefton in the water. Unfortunately FitzGerald had left his camera at the bivouac on Mount Sefton.

On leaving the lake we bore somewhat to our left, and after some steep climbing we reached the top of Mount Ollivier at 7.30. Here we made another halt for 20 min. or so, and then proceeded along the face of Mount Ollivier, looking down on the Mueller Glacier below. The moraine was somewhat trying, but the snow in fairly good condition, being in the shade. At 9 o'clock we came to water on the Barrow Glacier and stopped for a drink. Three-quarters of an hour further we came to a small patch of rocks in the middle of the plateau, where we rested for lunch, observing that Mount Sealy was much further off than we supposed. An uninteresting trudge through snow that was beginning to be soft as the day wore on led towards a ridge which we imagined would take us to the base of the two peaks constituting Sealy. We followed it for some distance, till Zurbriggen, who was ahead, stopped and informed us that we were not on the Sealy ridge at all, but that a glacier intervened between us and Sealy.

After prospecting with FitzGerald they returned and said they had discovered a way by which we might descend to the glacier below, known as the Metville Glacier. The rope came into requisition, Zurbriggen going first, then myself, then FitzGerald, and Clark coming last. The rocks were very sharp and the going was difficult. We got down by a steep face to the glacier below, and took a straight course for the col above us at the base of Mount Sealy, which we reached at 1 o'clock. We were surprised to find a nearly sheer fall of about 5,000 ft. to the valley below. Zurbriggen undid himself from the rope, and started off to find the most practicable way up the rocks; we meanwhile melted snow and filled an empty bottle with water. He soon returned, jodelling, by which we understood that he considered Mount Sealy 'in his pocket,' as he puts it. He again put on the rope, and we started up the rock, close by the col. It was very crumbly, and great care had to be exercised, only one moving at a time. We went round the face opposite the col overhanging the valley below, up a nearly sheer face of rock for a short distance.

Arrived at the crest of a ridge leading to the actual peak, we rested for a few moments before beginning the final ascent. The rock became worse, and the climbing more difficult. No stone seemed safe. Those ahead had to be most careful not to dislodge any large fragments. I sent one piece on to FitzGerald, which, however, he dodged in a scientific manner, and ultimately we reached the top, with merely a few scratches. We set to work to build two cairns, one on either peak. FitzGerald took charge of one and Zurbriggen of the other. They vied with each other who should make the highest. In each

cairn we left a note, giving the date of our ascent. The work accomplished, we again melted some snow, and had a drink out of the rims of our hats. We rested at the top for over an hour, as the sun was beautifully warm and the view magnificent. But the return journey had to be thought of, and we reluctantly tore ourselves away from a most comfortable siesta.

The descent to the glacier was made by a different route and in a much shorter space of time than the ascent. On reaching the glacier Zurbriggen went back for the ice axes, which had been left at the col, while we started down towards the plateau beneath. We again roped, Clark going in front, FitzGerald behind, and I in the middle; the snow being soft, we were enabled to start without the ice axes, and got half-way down to the snow plateau before Zurbriggen caught us up. The snow was now very heavy, and up to one's knees. We, however, plodded on, skirting the ridge we had come by, and passing below the point of it—a much easier and shorter way than the one by which we ascended. We did not stop till we reached the patch of rocks where we had left the remains of our lunch. Here we again fell to with good appetite, all in the very best spirits at having accomplished the first ascent of a New Zealand peak. We followed our former route to the lagoon below Mount Ollivier, which we reached as night was setting in. Thence a toilsome walk in the dark brought us to the Hermitage at 9.45 P.M.

THE METEOROLOGY OF CANTERBURY AND WESTLAND, NEW ZEALAND, AS BEARING UPON THE FEATURES OF THEIR GLACIERS.

By JOHN MEESON, N.Z.A.C.

THE prevalent winds in New Zealand are westerly, and, coming across the Tasman Sea, are for the most part warm and moist. Right athwart these winds, and near the West Coast, lie the Southern Alps, with an average height of close upon 9,000 ft., probably. Hence the rainfall on the West Coast is excessive. At Hokitika the average amount is 126 in., falling on 206 days. Further south it is probably much more, but reliable statistics of that district are wanting. Just over the divide at the Bealey, which is 2,096 ft. above sea-level, 104 in. fall on 214 days, and the wind is N.W. on 220 days in the year. On the eastern side of the mountains, on the other hand, the rainfall is light. Some of the N.W. rain crosses here and there, mostly by low passes, and falls on the foot-hills and in their vicinity; but at Christchurch, 20 miles away from the chain, the rainfall is only 25 in. on 107 days. At Oamaru, further south, 22 in. fall on 96 days. In both these cases the rain comes mainly from the S.W. The N.W. wind in the Canterbury plain is a true Föhn, very dry, and often 20° hotter than it is at the same time on the West Coast.

In temperature there is otherwise a similar contrast. Though the mean annual temperature of Christchurch and Hokitika is about the

same (53°), the range, both daily and annual, in Christchurch is much greater than in Hokitika. As regards insolation and radiation the mean absolute yearly extreme difference has been given by Dr. J. Hann, of Vienna, from a careful study of the statistics, as 143·46 at Christchurch and only 75·42 at Hokitika.

In regard to degree of moisture, the only statistics available bring out that of Christchurch as 75, and that of Hokitika as 89 (Sat. 100 in each case), figures which are not surprising in the light of those previously given.

The bearing of all these facts on the glaciation of the Southern Alps is apparent. The glaciers only exist at the present time on that part of the chain which lies between 43° and 45°—in other words, on that part around and about which the meteorological conditions above described are most accentuated, on account of the greater average height of the chain of mountains there—and it is submitted that the differences which exist between the E. and W. sides of the chain in the matter of glaciation—as to bulk, low descent, and rapidity of daily movement of glaciers—directly result from the above conditions, combined probably with the greater steepness of the W. slope as compared with the eastern. Similarly the advance or retreat and probable history of the glaciers could be surmised *à priori* if we knew what changes of climate had taken place here in recent cycles of years; but such knowledge of its meteorology in a young colony can scarcely be expected. But on the evidence of glaciation in Australasia generally, in tertiary and post-tertiary times, see the Report in vol. v. of the 'Transactions of the Australasian Association for the Advancement of Science,' by Captain Hutton and others.

NOTES ON OLD TRACKS.

BY DOUGLAS W. FRESHFIELD.

II. THE BERGAMASQUE ALPS.

SONDRIO is the link between the Bernina and the Bergamasque Alps, and a centre for the exploration of the latter. I have a, perhaps, undue affection for the place. Of course it is too hot for a prolonged stay at midsummer; but at any other season it offers, to my mind, great attractions for lovers of the Italian Alps. It has an excellent hotel. I believe not less than seven carriageable roads converge on the little town. You can drive up into the hills in many directions—to Chiesa in Val Malenco, up Val del Livrio to the foot of the Corno Stella, up Val Masino; perhaps best of all to the old villages high on the sunward slope of Val Tellina—Montagna, Tresivio, and Ponte. The road climbs among vineyards, winds in and out of chestnut-muffled combs, deep in whose shade bright cascades flash among the ferns or under the dark wood of an old water mill. Here a ruined castle, there a campanile with a cluster of rustic homesteads is planted in the happiest situation. In the distance the broad green levels of the valley stretch away

towards the sunset, framed by the blue crest of Monte Spluga and the vaporous line of the hills behind Gravedona. Above the falling curves of the Aprica the snows of the Baitone and the Adamello catch the afterglow, as the vapours that have been resting on them melt away into an untroubled sky. No one who takes this drive on a September evening but will long to repeat it. One of the best points of view is the terrace of the great pilgrimage church near Tresivio, a vast white structure, containing a model of the Santa Casa of Loreto, recognisable from afar, even from the distant Adamello.

Sondrio itself is but a small country town. It has not the attractions of Aosta, which in position it much resembles. It cannot vie in picturesqueness, in historical interest, or in ancient remains with that most interesting of sub-alpine towns. It has none of the mountain romance of Promontogno; even Chiavenna is in some respects more striking. Yet I remember Sondrio with an affection I should think the result of some personal accident, had I not lately found it to be shared by quite independent judges. The little town is Italian to the core. It forms a striking climax to a descent from the Monte della Disgrazia. After the blinding snows, the wearisome boulders, the scorching glare, the mountaineer is in a humour fully to enjoy the drive beside the torrent among the vines and chestnuts, the noble prospect over the great valley, and the final dash past the high-piled haycarts and through the fireflies and the narrow streets up to the door of Signor Vitali's hotel. And what transition can be more agreeable than that from the damp hay of a very poorly provided Clubhut to a spacious Italian palazzo, where you dine at a window which opens on a cool garden, while the grapes are hanging ready to be plucked on a *pergola* close at hand?

Another day *cretâ notanda*—no, rather by a bottle of the oldest Val Tellina—has been snatched from oblivion. But to-morrow soon comes, and with it the same blue unclouded weather. The alternation of rest and toil is the prime pleasure of travel.

The visitor to the Engadine who climbs Piz Julier enjoys, as I noted in my last paper, one of the most varied mountain views obtainable within a day's walk of Pontresina. If he is a curious mountaineer he will hardly fail to notice, as his eye runs along the white crest of the Fex Glacier, a single distant rockpeak that cuts the sky line. It is improbable that his guide will be able to tell him more than that it is a mountain of Val Tellina. If an Engadiner he will certainly not view with favour any suggestion of a visit to the range to which it belongs. For here, close to one of the centres of the 'visitors' industry,' is a district, unexplored by Englishmen, containing bold rockpeaks and not a little snow and ice, where the local industrials understand their business so badly that they are thankful for 8 to 10 francs a day for climbs which would be tarified at more than double in the Engadine.

South of Val Tellina, from Colico to Edolo, from the Lake of Como to the Aprica Pass, stretches a lofty ridge, the first summit of which is the beautiful Monte Legnone, one of the most familiar objects in the lake landscape. From the crest steep glens fall northwards. On the south labyrinthine valleys, upland basins, chestnut-muffled ravines, separated

by grassy ridges and steep limestone crests, stretch away towards Bergamo. These are the Prealpi, or Forealps, of the Italians, known also as the Orobian or Bergamasque Alps.

Only one frequented track crosses them—the Passo di San Marco. In the Middle Ages this, as its name suggests, was a favourite route for the merchandise of Venice, by which it evaded Milan and the Spaniards, who held a castle near Colico. Travellers occasionally used the Aprica Pass, the eastern limit of the group from Tirano to Edolo. Thus Lassels, a travelling tutor, who wrote a 'Voyage of Italy' in 1670, found it convenient, he tells us, to cross 'the Berlin and the Vrig'—the Bernina and Aprica—and so to 'pop up at Brescia.'

The central group lies just south of Sondrio, about the head of Val Seriana. The following are its chief peaks from E. to W.: Monte Gleno, Re di Castello, Pizzo di Cavrello, Pizzo del Druet, Pizzo di Coca, Pizzo di Rodes, Pizzo di Scotès, Pizzo di Parola, Punta di Scais, Monte della Redorta. They range from 9,500 up to 10,020 ft., according to Signor Galli-Valerio's figures, which differ slightly from those of the new Italian map. [See Appendix.] A few miles further W. is the peak seen from Piz Julier—the Pizzo del Diavolo—a rugged crag, called, not with much reason, the Matterhorn of the district; and beyond it, accessible from Val Brembana, is the Corno Stella, famous for its view and now provided with a path, a hut, and an engraved panorama. The main glaciers of the group lie about the Monte della Redorta and the northern slopes of the Pizzo di Cavrello and the Monte Gleno. The stiffest climbs are reported to be the Pizzo di Coca, from the N., and the Punta di Scais.

From Val Tellina the chief peaks are masked by the great bastion crowned by the Pizzo di Rodes. It is only opposite the opening of Val Malgina that any insight into the glacier scenery of the Prealpi is obtained.

My purpose last summer was to walk up Val di Ambria, and thence climb on the following day the Pizzo della Redorta, long reckoned the loftiest of the Bergamasque Alps. I was fortunate in finding a companion in Dr. Galli Valerio, the secretary of the Sondrio section of the Italian Alpine Club, who kindly offered to join François and myself with a local guide for a walk over the chain and back. It was the hottest hour of the afternoon when we left the town in a car, which took us to the foot of the hill. The valley opens as a deep cleft on the Val Tellina; the path winds steeply among the chestnut slopes. It was hot—so hot that our local man, whose family were in summer quarters at Agneda, the upland hamlet where we proposed to sleep, was glad to load the provisions and sacks on a donkey, which, pleased at the prospect of exchanging a stable for mountain freedom and pasture, stepped out gaily before us.

We stepped less gaily so long as we were exposed to the full rays of the afternoon sun. But our reward was not long in coming. The slope of meadow and chestnut wood climbed, the path turned into the welcome shade and comparative coolness of the long gorge through which the torrent of Val di Ambria descends to the Adda. The landscape was striking—bold mountain forms, slopes clad in

verdure, hollows green with ferns, here and there aged beeches, relics of an ancient forest. Slowly the track and the torrent came together. The scenery grew sterner before, at the first group of huts and water-mills, the glen split. The right-hand track leads to its only permanently inhabited village, Ambria, and steep Gemmi-like passes to Val Brembana. We turned to the left, and by a zigzag gained a brow on which stands the hamlet of Agneda,

A poor little place, where its one priest comes
Once a year, if he comes at all.

At any rate, he has a house and a chapel to serve there, and his house being locked up we were glad to sleep in his barn. The chapel was locked up also, and so we missed seeing a picture said to be of some merit. Our local guide undertook to provide accommodation for meals in the rude cottage where his family passed the summer. Once upon a time the plain of Agneda was occupied, doubtless, by a charming lake. For many years its basin has been choked by fluvial deposits, and a stony foreground spoils the landscape.

In the dim dawn we crossed the stones and climbed the next step in the valley, a rocky barrier with pines and waterfalls, to the secluded meadows of Scais (4,800 ft.), where the glen again divides. Here is the proper head-quarters for mountaineers. A few beds might well be provided in one of the substantial stone huts which are clustered together in a miniature village.

Another steep ascent, which commands glorious views of the Disgrazia, leads to the last alp. Above this the glen is mostly stones, and the scenery is extremely savage. We ought to have gone up to the glaciers at its head, but our local guide led us to a broken-down path which climbed very steeply amongst avalanche débris to our right.

This was the track to the Passo delle Scale, so called from a rock-built staircase up to the lowest gap in the chain, constructed for the use of the charcoal-carriers, who transported fuel to the iron foundries of Val Seriana. The traffic has ceased, and the stairs having fallen to ruin chance wayfarers find a slightly higher passage to the E., where the crest can be gained by climbing a long, dull, snowy trough. On the broken crags near its head *Viola Comollia*, a rare species, with a very pretty bright mauve blossom, was growing profusely. It is only found on the Prealpi.

From the Passo di Brunone we had to traverse under the southern side of the crest without gaining much height for at least a mile. Thus we reached the névé of a considerable glacier—considerable for these parts—and, climbing the last slopes, found ourselves in the gap we ought to have reached by the chief glacier of Val di Agneda. The few crevasses at its head may possibly be at times formidable; in 1894 they were certainly passable without difficulty. The nature of the ground hereabouts is misrepresented in the new Italian map; the saddle is a snow col unbroken by rocks. To the E., at the N. foot of the ridge of the Redorta, lay a higher snowy gap, approached by steep frozen banks. This does not lie in the main chain, but on the spur connecting the Monte della Redorta with it. On the E. it is

defended by precipices, and overlooks the pastures on the Bergamasque side of the Passo di Coca. The final ridge of the Redorta can be run up by mountaineers of any experience, though a novice, by choosing badly, might effect a slip on the snow banks. As I sighted the stone-man I came in view also of a herd of chamois, enjoying themselves on the summit. They had doubtless been driven by the exceptional heat of the last few days to the breeziest station.

We were again lucky in our day. To the W. the distant panorama was obscured by heat haze, but in other directions the atmosphere was pure and the view varied and delightful. At our feet we could see the windings of the Serio through its green spacious valley. Beyond the dolomite cliffs of the Presolana we looked across to the waters of Lago d'Isèo, flowing round the base of its bold island hill, and under the gentle ridges of Monte Guglielmo, a charming Italian down, the Montarone of Brescia. The Adda was visible not only in Val Tellina; a sinuous streak of light across the plain marked its lower course below Lecco.

Our neighbour heights held their own well. Opposite was the bold pyramid of the Pizzo di Coca, close at hand rose the precipitous crags of the Punta di Scais and the Pizzo di Forola. To the W., at the other end of the long basin into which we were to descend, stood the Pizzo del Diavolo. A card in the stone-man told us that Herr Merzbacher and a companion had combined it in a day's walk with the Redorta. They must have used their boots hardly!

We descended with many glissades the S.W. glacier of the Redorta, and then turned and traversed to the right to a grassy brow where a party of labourers employed in erecting a Clubhut were taking their siesta. Below this we came on the zigzags of the disused Passo della Scala. A fine crop of stones covered them. The ruin of a path is, perhaps, the worst possible walking. We descended past a pretty waterfall to the junction of the streams in the long basin lying parallel to the chain which forms the head of Val Fiumenero.

The descent to the village of that name in Val Seriana lies through an extremely picturesque glen. Steep crags, wood, meadow, and water unite to form ever varied and always romantic landscapes. The cool vaulted rooms of the village inn of Fiumenero gave welcome refreshment, and a country car helped us up the few miles to Bondione, a grubby mining hamlet. A quarter of a mile above the village a homely but clean inn has been opened, in a pleasant situation. Here I touch on the old ground of my 'Italian Alps.' I would only repeat my conviction that in June the falls of the Serio must be well worth the drive from Bergamo. In August they want water, but their total height is stupendous—no less than 3,000 ft. It takes nearly 2 hrs. from Bondione to reach the level of the top of the cascade, where, in a gap in the ridge which protects the large pasture basin—once a lake—of the Barbellino Alp, a Clubhut has been erected. We met a large Italian party descending, who had apparently been enjoying a few days' fresh air without hotel bills. This is a development of the use of huts which in more frequented regions may easily become an abuse!

After crossing the stream and passing the huts of the higher Barbellino Alp we climbed the steep hill above it, and after a long, trackless ascent found ourselves on a level with the little Lago della Malgina. Turning more sharply to the left, over a wilderness of loose stones and broken crags we climbed to an upper basin filled by a glacier. Here we were joined by a solitary figure we had for some time had in view. It proved to be a lad of sixteen out for a holiday from Bergamo, who had bicycled up the valley, and was lodging with the shepherds of the Barbellino Alp and enjoying mountain exercise. Snowy banks and shale slopes, gemmed with the most brilliant gentians and violas, led up to the crest. We gained it 200 or 300 yards to the W. of the true pass, which is marked by a natural stone-man. The Pizzo di Cavrello (Pizzo del Diavolo of the map) might be climbed hence by a rough but easy ridge. The day was hazy, but the view of the Bernina opposite was remarkable.

The descent is by a long snowy trough, excellent for glissades. When the snow ends the huts of the Baita Muracci are found on a brow to the right. They command a singular and very romantic prospect. The mountain opposite consists of rock ridges and terraces, separating a series of small ice-filled bays, from which streams fall in glittering cascades over the lower cliffs. A zigzag path leads down among flowers, woods, and copses to the bottom of the valley. The torrent crossed, a good path is found on the left or shady bank. The descent is constant, but neither steep nor stony. The stream is robbed of most of its water for irrigation channels before it reaches its last plunge into the Val Tellina. The path winds under the shade of a noble chestnut forest, among the greenest lawns, plashing rivulets, and scattered broad-roofed farms, until the last bank sinks into the vines and Indian corn of the greater valley. Half a mile of country lane led us across this to the bridge over the Adda, opposite the inn of S. Giacomo, the half-way post station between Sondrio and Tirano.

Here ended my last excursion in the Bergamasque Alps. Their scenery is surprisingly bold and varied, the views from their peaks are extensive, and the group has quite sufficient attractions from a climber's point of view to merit a visit from those of our members who like to enlarge their experiences and their interests. It has, of course, the advantage of being open till late in the season, and of offering in its lower regions charming walks for broken weather. The hardest rock-climbing is doubtless to be found on the peaks between the Redorta and the Coca. A fine expedition would be to climb the Pizzo di Cavrello from Val Malgina, traverse the Vedretta dei Cagamei, and return by the Val d'Arigna to Sondrio.

I must add a brief note of a walk I took with Mr. Clinton Dent in the previous summer. A few miles below Edolo, Val di Paisco, a steep narrow glen, leads up into the eastern corner of the Bergamasque Alps, and affords a way into the upland basin of Val di Scalve. Ancient chestnut woods, picturesque villages perched high on the sunward slope among meadows and millet fields, higher up comparatively tame crags and pastures, such are the common features of a side valley in the Southern Alps. Val di Paisco differs from the

type in this one respect: that as the grass pass at its head is approached the slopes are stained with grubby huts and rubbish heaps, the marks of iron mines. We did not see Val di Scalve in sunshine—on that forenoon alone during my trip in 1893 did the sun take holiday—but the descent into it has some charms of foreground. The upper alps are fringed with thick woods of laburnum; lower down a pine forest covers the whole floor of the valley. It is an hour's walk through the wood from the first ironworks to the chief village, Schilpario. Though 3,700 ft. above the sea, it has almost the air of a town. The Albergo Alpino is no village inn, but a *pension*, much frequented in summer by fugitives from southern heat. When, after drying myself at the log fire that had been hospitably lighted for us, I descended to the Sala di Pranzo, I found Dent surrounded by Brescian ladies, and unconsciously contributing to a 'Living Picture,' a 'Santa Conversazione' after Moretto or Romanino. The subject of the 'conversation,' I may mention, was profane dancing. The night before the company had paced an English measure. Should they call it Sir Royger, or Sir Rowger, or Sirrogé? While Dent decided this knotty point I enjoyed an excellent meal. But we fled before night-fall. It was ungalant, doubtless, but we felt that if called upon to lead the national dance we might betray our incapacity. Let some younger member of the Club, who wishes to learn Italian and to have a cheap holiday, who can be content for ten days with romantic uplands and moderate climbs, try Schilpario. The Re di Castello and Monte Gleno, the dolomitic Presolana will furnish some stiff scrambles. There is a fine path by upland villages to Brenoin Val Camonica. The walk down the Via Mala Bergamasca and by the hill path from Dezzo to Lovere is one of the most enchanting in the Lombard Alps. Lago d'Isèo I have written of before. It is to me the most lovable of the Italian lakes, and there is not a cockney castle among its olive gardens.

THE PRINCIPAL PEAKS AND PASSES OF THE CENTRAL GROUP OF THE
BERGAMASQUE ALPS.

The following list is taken from the new Italian Survey (1-50000). Some alterations suggested by Dr. Galli Valerio are indicated:—

	Mètres.
Pizzo Re Castello	2,881
P. dei Tre Confini	2,824
Monte Gleno	2,883
Passo del Trobio	?

[See 'Alpine Journal,' vol. vii. p. 107, and Freshfield's 'Italian Alps' for an account of the two last expeditions.]

Monte Costone	2,836
Passo Grasso di Pila	2,510
Monte Torena	2,917
Passo Caronella	2,617
Passo di Bondone	2,783
Passo di Val Malgina	2,763
Pizzo di Cavrello	2,927

[Pizzo del Diavolo of the Italian Survey, not to be confused with the western peak dedicated to the same potentate.]

Pizzo del Drouet	Mètres. 2,908
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[Dr. Galli Valerio gives the heights of three points, the E. Central, and W. Drouet, as 2,799, 2,901, and 2,863 m. Between the central and W. peak lies the]

Passo del Camoscio	?
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[first crossed by Dr. G. V. August 13, 1894.]

Passo del Diavolo	2,601
Pizzo di Coca, N. peak	3,052

[Dr. G. V. points out the existence of a S. peak off the watershed 1 m. higher.]

Passo di Coca	2,675
Pizzo Porola	2,981
Punta di Scais	2,930

[This point is nameless in the Italian map. Dr. G. V., who has climbed it, makes its height 3,040 (?) m.]

Pizzo della Redorta	3,037
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[This peak is several hundred yards S. of the watershed. Just W. of it lies a snow saddle connecting the Western Porola Glacier with those of the Redorta, which may well be called the]

Passo della Redorta	?
Passo di Brunone	2,537
Pizzo del Diavolo	2,915

Rodes Spur.

Passo di Porola	
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[between Val di Arigna and Val di Agneda, crossed by Dr. Galli Valerio September 8, 1891, and, according to his measurement, 2,800 m.]

Pizzo di Scotès	2,976
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[Next to this Dr. G. V. adds the]

P. degli Uomini	2,897
Pizzo di Biolco	2,798
Pizzo di Rodes	2,831

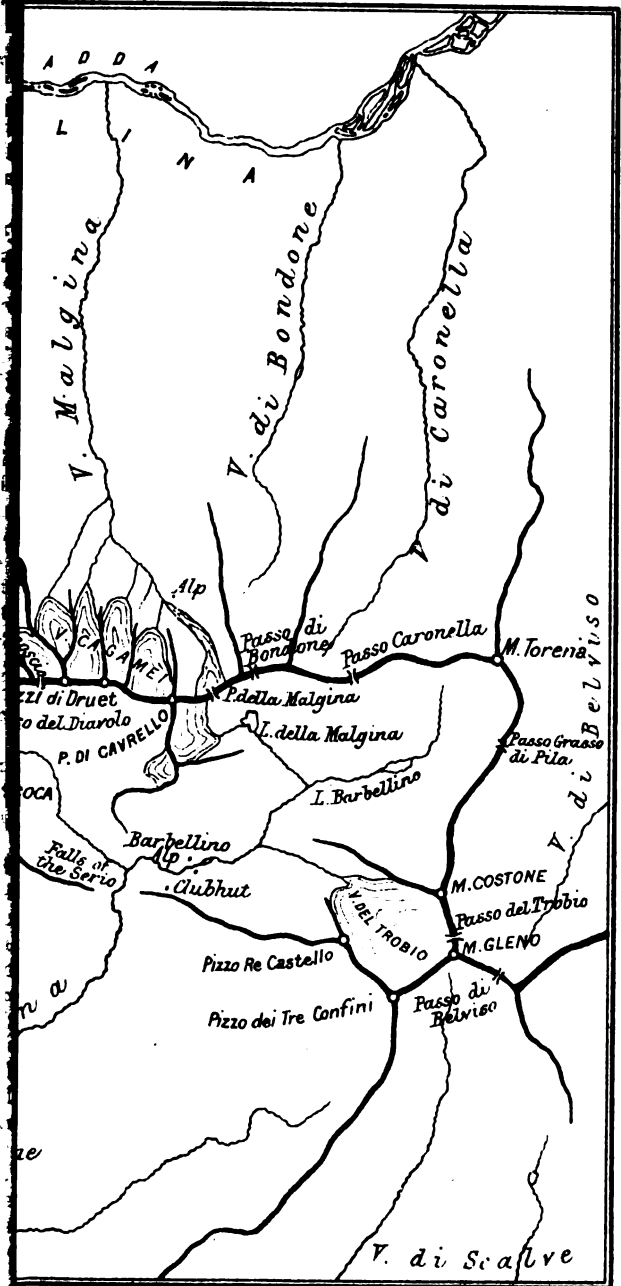
ALPINE NOTES.

BEN NEVIS.—On September 3, 1892, Messrs. J., E., and B. Hopkinson climbed the middle ridge of the north side of Ben Nevis as far as the point where the ridge is broken by a well-defined perpendicular face, which they endeavoured to turn by traversing slightly on to the western face, and ascending a narrow chimney, but were stopped by a high pitch.

On the following day the same party, with Mr. C. Hopkinson, descended the same ridge from the summit past the cairn, well seen from near the observatory, marking the furthest point previously reached in the descent, as far as the chimney on the west face of the ridge. Descending this to the pitch before mentioned, and then by a short but difficult

ERGAMASQUE ALPS.

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traverse, they reached a small rock platform, from which they regained the ridge below the rock face, and completed the descent.

On September 6 the same party ascended the eastern of the three ridges, which runs out close to the summit. The climbing on this is interesting, but much easier than the centre ridge.

On September 8 the same party climbed the outlying pinnacle at the base of the central ridge, and descended it on the north face.

THE USE OF CLIMBING IRONS.—If this question be considered still an open one I should like to comment briefly on two points in the controversy. On p. 530, vol. xvi., Mr. Dent expresses a doubt whether a party provided with irons will often 'do much better *or be more safe* than a party without them.' I cannot help feeling that the words which I have italicised contain the pith of the objection usually made to the use of these aids, and that they imply a misconception of the matter. As an experimenter with *Steigeisen* during a month's climbing without professional assistance last summer, and now a complete convert to their use, I would submit that *speed* is what is primarily gained, and safety only indirectly, when safety, as even in the best-planned expeditions, will sometimes happen, depends on speed. It cannot for a moment be maintained that a climber who 'understands what balance means, and is provided with properly nailed boots,' is one whit less safe in a *properly cut ice-step* than he would be if provided also with climbing irons. On the contrary, I would frankly admit that *Steigeisen* may, like most other things, be made a source of danger if trusted beyond their natural capacity. On solid ice, if the gradient exceeds a certain low limit, steps *must* be cut, and directly this is done the irons lose their peculiar value. Their proper use is on crusted ice, on steep and thinly-glazed snow, on steep frozen grass, on thin scree where the rock peeps through, and last, but not least, on compacted banks of moraine. Wherever, in fact, merely booted travellers must *kick* steps, and in a few places where they would have to *scratch* them with the axe, their ironed friends will walk straight up (or down), and the saving in time, labour, and temper is enormous. Wherever steps *must* be cut, wherever steps of any kind are superfluous, and on really difficult rock, irons are useless, though, except in the last case, their actual inconvenience becomes, after a very little practice, so slight that it is not worth while to take them off if there is more of the intermediate sort of ground ahead. Their universal employment by the Tirolese and neglect by the Swiss I attribute not so much to paternal legislation as to a natural difference in the country. The smallness of the eastern glaciers has much to do with it. In Switzerland the ice above and below a fall is usually all but level. In the Tirol the fall is often imperfectly developed, and the gradient for a considerable distance is just, and only just, too steep for walking. Here the irons—or, what are practically an equivalent, Mr. Mummery's screws—are invaluable, not because they save life, but because they save time. In the Karakoram it would seem that 'intermediate' ground is equally common, though the cause is not the smallness, but the vastness, of the mountains, the ice, and the débris.

My other point is of less importance. Without questioning the

superiority of Mr. Conway's English-made *Steigeisen*, the like of which I was only deterred from ordering by their English-made price, I must maintain the practical efficiency of the Tirolese article, purchasable in Innsbruck at about one-eighth the cost. A pair can readily be found that are nearly a fit, and the blacksmith will make them quite so in half an hour's time. By use the fit improves, if anything. Hemp straps, not leather, should be employed, because wet slightly tightens instead of greatly loosening them.

R. C. GILSON.

MONT CERVIN.—The following appeared in the 'Figaro' of July 19. It will be news to most climbers!

'Hors Paris.—L'ascension du terrible mont Cervin, que pendant longtemps on jugea impossible, a été faite mardi par un Américain, M. Packett. C'est la seconde fois que cette aiguille, la plus aiguë des sommets alpestres, qui domine Zermatt, est atteinte. Il ne faut pas oublier, en effet, que l'ascension du Cervin fut accomplie avec un plein succès, il y a une dizaine d'années, par notre compatriote M. Edouard Bonnet, de la section lyonnaise du Club alpin français.'

THE ROTHSTOCK.—Many travellers must from the Little Scheidegg Inn have noticed a bold detached rocky peak at the extreme W. end of the W. arête of the Eiger—the Rothstock—but, as far as I can ascertain, either at Grindelwald or at the Little Scheidegg Inn, no one seems to have thought of visiting it till young Christian Almer and I climbed it on May 29 last. We followed the usual route up the Eiger as far as the gap between the Eiger and the Rothstock, then turned W., and by easy broken rocks in a few minutes reached the highest summit (2,668 m.) of the latter peak (2 hrs. 5 min. from the Little Scheidegg Inn, but there was much snow on the way, so that $1\frac{1}{2}$ – $1\frac{1}{2}$ hr. would probably suffice under ordinary circumstances). To the W. there is a slightly lower point, whence the inns on the Wengern Alp and Little Scheidegg are visible. On the N. the peak forms a sheer and imposing rock wall, but the conspicuous red tower on the W., from which no doubt it takes its name, is but a buttress, probably that marked 2,530 m. on the S. map. The view from the Rothstock is interesting and striking, and the excursion is recommended as a morning walk on a rest day to climbers sojourning at the Little Scheidegg.

W. A. B. COOLIDGE.

HÖHBERGHORN (4,226 m.=13,863 ft.) FROM THE N.W. *September 20, 1894.*—Mr. F. W. Oliver, with the guides Alexander Burgener and Albert Supersaxo, left the Hohberg hole (which forms an admirable bivouac place) at 5 A.M., and reached the summit of the Dürrenhorn, by the W. ridge and S. face, at 11 A.M. Leaving the summit at 11.30 A.M. (by the S. face), they reached a point on the snow field below and to the W. of the Hohberg Pass. The route then lay S., always parallel to and close below the bergschrund, which was crossed at a convenient point below the N.W. ridge of the Hohberghorn. A little step-cutting brought the party on to the N.W. arête (12.45 P.M.), which was followed to the summit (2.30 P.M.). The ridge being on the shaded side of the mountain, its rocks were found in a very bad state, owing to the heavy snowfall of the previous week.

Under favourable conditions no difficulty would be met with. Randa was regained by the Festigletscher and ordinary Dom route at 7 P.M.

NEW CHÂLET-HOTEL AT BONNEVAL-SUR-ARC.—Mr. E. T. Compton writes in praise of this inn, recently opened under the patronage of the Lyons Section of the C. A. F. It is well kept in a simple style by one of the Balmats of Chamonix. The landlord and his son are capable of acting as guides.

ROUND TOSA FALLS.—Some notes by Mr. A. Cust have been placed at my disposition which throw light on the little-known ranges near Tosa Falls, particularly the neighbourhood of the Banhorn and the Grieshorn. They usefully supplement my notes on those peaks published in the 'Alpine Journal,' vol. xvii. pp. 47-9.

Mr. Cust has twice visited the *Ban Glacier*, apart from his traverse, October 3, 1880, of the North Banjoch.* His first visit was on September 20, 1878, when, 'after reaching the Neufelgiu Pass from Tosa Falls, I made my way to the top of the main rock wall of the Hohsand Glacier. I found myself on the edge of the Ban Glacier, rendered more inhospitable by a cold wind from the other side, and mist. Turning to the left along the ridge, and the mist lifting as I went on, I sat down to a meal on the lee side of the cliff, satisfied that a small lake from which I had turned in the hollow below was really the Obersee (Lago Sruer of the Italian map).' After describing the glimpses he had through the mist, Mr. Cust adds that he went down to the Hohsand Glacier and crossed the Hohsand Pass to Binn. The weather was more favourable when, on September 6, 1880, Mr. Cust reached the Ban Glacier 'by an easy gully near the head of the Neufelgiu ravine, which brought me out near the E. terminal summit on the rock-wall of my first mistaken excursion.'† 'There was here an engineer's pole prostrate on the ground, and signs of a cairn, now demolished. The only agency I could think of to make such a ruin was that of the chamois, who abounded in the locality, making tracks so big that they looked like paths worn by the human foot, and, from the broad track along this ridge, evidently a favourite haunt. This summit had a little hollow at the top, which was a garden green with grass. I went on to the culminating point of the ridge (2,973 m. of the Italian map), at the junction of another ridge from the Banhorn. The name *Gemsgrat* is suggested for it. I descended by a gap between the two above-named summits over a declivity on the Lebendun side. On other occasions I also reached points 2,926 m. and 2,931 m.'

Mr. Cust also made the ascent (the first by travellers) of the *Grieshorn* (2,966 m.) on October 11, 1881, and was struck by the discrepancies between the Swiss and Italian maps, as I also was twelve years later. He states: 'I was told—by the local guide at Tosa Falls, I believe—that the summit ascended by me was known as Punta del Val Corno (Valcornerhorn, as he seemed to pronounce it), or Tubthalthorn,

* *Lepontine Alps*, p. 45.

† This gully is clearly that referred to near the top of p. 45 of my *Lepontine Guide Book*.

Tubthal being the local name for Val Corno. It is broad-topped and irregular rather than conical.' Mr. Cust also makes the following interesting remarks as to the Val Corno Glacier, describing its state in 1880, as I did its state in 1893 :—' In 1880 I found that the glacier at the head of Val Corno was solely derived from the hollow between the Grieshorn (2,966 m.) and the Rothenthalhorn. From the summit plateau of the valley streams flowed both down the latter and to the Gries Glacier, which, lying at a lower level than the Val Corno Glacier, is separated from the watershed by some distance and a considerable depression. What little moraine there was the semi-circular frontal moraine of the Val Corno Glacier, nor were there traces of an old moraine, such as might have been left by the Gries Glacier. No doubt when the latter was higher there was a continuous ice field here, and the combined ice stream would push into the Val Corno. There can never, however, have been much pressure, as the ice then (1880) rose to the level of the large openings to the Egineu and Gries valleys.'

Mr. Cust speaks very highly of the view from the *Rothenthalhorn* (2,969 m.), the highest summit in the range between the Gries and San Giacomo Passes. I am happy to find that his opinion supports mine, expressed in the 'S.A.C. Jahrbuch,' xxviii. p. 113. From Tosa Falls Inn the ascent can easily be made in 4 hrs. by way of the Im Moos huts, the Roththal glen to the tarn at its head, and then the *shaly* S.E. arête. In some respects the view from the Grieshorn is finer, but the ascent is longer and more laborious; from either, Monte Rosa, the Bernese Oberland, the Tödi, and the Bernina groups are well seen. From the top, no doubt, a direct descent to the Val Corno might be forced, but it is pleasanter to traverse grassy slopes from the lake to the San Giacomo Pass (under 1 hr.), and so gain Airolo. In my opinion the Basodino, though perhaps the best known of the peaks round Tosa Falls, is in all respects the least interesting. The finest view is that to be obtained from the Blindenhorn (which may be taken on the way to Binn), while the highest of the Neufelgiuhörner offers an amusing scramble, which is much easier than it looks.*

W. A. B. COOLIDGE.

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REVIEWS AND NOTICES.

My Climbs in the Alps and Caucasus. By A. F. Mummery.
 (London: T. Fisher Unwin. 1895.)

THE historian of fifty years hence, engaged in tracing the development of mountaineering that has formed so conspicuous a feature in the intellectual growth of the latter half of the nineteenth century, will probably recognise certain periods indicated by literary landmarks. Mr. Mummery's handsome volume will mark the stage when mountaineering *technique*, if it had not reached its absolute high-water mark, had, at any rate, attained a very high level of perfection. The book, too, will be cited as a proof of the universal tendency to specialism. Opinion, as now, will be divided on the question whether this tendency indicates advance or degeneration.

There was ample room in Alpine literature for a work dealing with the development of mountaineering which concerns itself not so much with the conquest of new peaks, or the opening up of new fields, as with the setting forth of what can be accomplished by the assiduous cultivation of climbing—and especially rock-climbing—as a craft. No one is better fitted for the task than Mr. Mummery, who by common consent is one of the very foremost amateur mountaineers of the present day. As a climber he is known to many; as a writer he has hitherto been known only to the few. Our readers will not be surprised with the sustained excellence of the book now under review, though to a wider public its literary merits may come as something of a revelation. The author himself hints, in his preface, that the inception of the work was due to the decrees of the Fates and the will of the gods—a poetical way of describing the shrewdness of a London publisher. The book does not merely contain a record of well-planned and well-executed mountain expeditions of extreme difficulty. The author feels constrained to justify the limited scope of the work. He wisely defends, rather than apologises for, the existence of the 'mere gymnast' and the 'pure climber'—abstract personages, who have been far less the subject of any real attack than the author seems disposed to admit.

Mr. Mummery defines his position at once, and offers his pages to those who are content to regard mountaineering, as he does,

as unmixed play. A volume, however, so readable will inevitably claim a wider circle of acquaintance, for no one who has climbed for climbing's sake—as we all have, though we may at times in the mountains have had other ideas in our heads as well—can fail to be attracted by the book. Mr. Mummery makes the reader feel that he writes of his sport as he loves it. The style is graphic; the record of adventures vigorous, without being sensational; the discursions on the scenery so excellent that one could wish they had been less subdued. Novelty in treatment was, perhaps, hardly to be expected; and the author, judiciously enough, has not departed from the methods which have characterised so many Alpine books. The falling stones buzz and whirr through the pages; the climbers ascend and traverse places where the foot-holds are non-existent and the hand-holds impalpable. The cliffs, which in the early stages of mountain-writing were steep, and subsequently became perpendicular, now, not infrequently, overhang! Mention is made of the provision bill, allusions to Bouvier are not unfrequent, and even pipes and tobacco are heard of. Such topics have found their way into Alpine books before, and in all probability will continue to figure in mountaineering literature. But we are the last to complain. For all such details we confess to have a sneaking fondness, and are grateful that the author has not ruthlessly banished them from his pages, or endeavoured to introduce a new Alpine style. The typical climber of to-day is, after all, but a true development of the mountaineer of old. He is more independent, more skilled, possessed of greater power and more confidence, but not a whit more adventurous or reckless than his forefathers. There is plenty of humour to enliven the pages, tinged with the grimness which is not wholly unknown to students of mountain literature. The language is commendably free, too, from Alpine slang, though here and there expressions such as 'to gîte' have found their way in—a transplantation as undesirable as 'five-o-cloquer.'

All books descriptive of mountaineering experiences labour under a certain disadvantage of monotony. The writer starts for his mountain in a sleepy condition at the commencement of the chapter, and returns hungry at the end of it, and the story of successive climbs has to be well told if this inherent defect of repetition is to be at all successfully concealed. This Mr. Mummery in great measure achieves, and the grateful reader will not care to gainsay the argument that runs through the whole work in praise of the pure climber. The author boldly defends those who regard the mountains as greased poles, but at the same time is unable to conceal that he himself does not belong to the class to whom the taunt was addressed—those who are incapable of æsthetic pleasure or unable to appreciate the beauties of scenery. Mr. Mummery furnishes proof on every page that he is a true mountaineer in the best sense of the expression and the one in which it is generally accepted. He may laboriously argue that the delights of pure climbing are all-sufficient, he may address himself to those who regard mountaineering simply as sport, he may ostracise all science from his writings, and he may seek to encircle the ideal head of the pure gymnast with a halo as well as with a laurel wreath; but his true love of the mountains

will come out, and, we need hardly say, enhances immensely the attractions of his book. The fascination under which so many have fallen holds him too; and the same spirit breathes through his pages that is to be recognised in the Alpine writings of many climbers and explorers, and even men of science. As a climber he excels, and as a climber he writes, and succeeds perfectly in conveying to the reader what pleasures the Alps can afford to one who regards them primarily—perhaps wholly—as a field for the pursuit of a difficult and intricate sport.

The influence of the guide with whom the amateur has chiefly climbed in his student days is felt long after the traveller has graduated and emancipated himself from professional assistance. Mr. Mummery will probably not object to be cited as an instance in support of this assertion. Early association with so determined a climber as Alexander Burgener, a man to whom the old-world expression 'inaccessible' had so little meaning, told its tale, and led the author to develop along the same lines and to excel by the same methods. Only to one schooled in the ways of guides of the stamp of Burgener would ascents such as those of the Grépon 'Crack' and the Dent du Requin have been possible. The most remarkable expedition narrated in the work is not, however, one in the old playground. Mountaineers who know both the Alps and the Caucasus will probably agree that the ascent of Dych-tau is really Mr. Mummery's greatest feat—hitherto. Less difficult in any given passage, it was on account of the persistent courage and determination required a far bolder undertaking than any of the difficult scrambles among the Chamonix Aiguilles. Moreover, the Caucasian chapters are the best written in the book. The author contrives to catch the spirit of the country and make the reader feel that he is in another and less familiar region of the world, under altered and far more exasperating conditions of travel. One other characteristic development is to be noted in the book, in that a chapter is contributed by a lady. Mrs. Mummery, in her lively account of the 'Teufelsgrat,' has skilfully caught the familiar tone of many Alpine writings.

Readers proverbially disregard prefaces, unless they are also reviewers, in which case they often read nothing else. Neither do they always peruse concluding chapters when these take the form of summing up. But it is to be hoped that the young generation of climbers will not neglect Mr. Mummery's last chapter, on the 'Penalties and Pleasures of Mountaineering.' The early portion of the work might lead the aspiring mountaineer to imagine that an altogether new departure had been made, that the recognised rules were obsolete and effete, that the dangers had been much overrated, and that to the new mountaineers all things were possible. A study of the last chapter will undeceive and possibly disappoint him. It is true that Mr. Mummery does not always express approval of the maxims enforced in books dealing with mountaineering as a craft. And he certainly does not always practise the principles these books lay down. But Mr. Mummery is an exceptional man, and they who are qualified by experience to make rules are privileged to break them. Climbers who

have not such experience had better go with guides who have. Yet the writers of mountaineering text-books may take heart. Two points may be noticed—first, that these didactic works were not written for the expert, or even solely for the Alpine Club, but for the beginner and the average mountaineer; and, secondly, that the contributors were bound to recognise that some find their pleasure in the mountains in other pursuits than pure climbing. It is far from our intention to make the profound mistake of answering criticism. Indeed, there is no necessity. Mr. Mummery is an ally, not an opponent. His teaching is the same. He too preaches incessant caution, the importance of learning under good guides, the danger of carelessness when the chief difficulties of a climb are apparently overcome. The hints contained in pp. 331–343 are as orthodox as the most exacting mountaineering pedagogue could wish. If the advice seems a little at variance with other passages in the book, the inconsistency is to be ascribed to the fact that the author has set himself the task of defending general propositions, true only in the case of exceptional men—the ‘elect.’ When not carried away by the enthusiasm of the moment, when seated at his writing table and not grappling with the cracks and gullies of difficult rocks, his sober judgment and experience lead him to the same conclusions that others have drawn. The result is at once significant and welcome.

Even on the vexed question of roping and the proper number on the rope the author's views are not so divergent or advanced as they appear at first sight. For instance, after citing (pp. 342, 343) various expeditions and conditions in which the practice of roping at least three together is, in his judgment, unwise, he grants all that the text-books ask for by writing, ‘Of course if an incompetent man is included the rope must be worn constantly, and at least two sound and reliable mountaineers must be watching over his idiosyncrasies; but parties so hampered should avoid such gullies as that ascended in the way up the Schreckhorn, or the pitiless slopes of the Italian side of the Col des Hironnelles’ (p. 344).

The author mentions the Col du Lion as an instance of an expedition where it is undesirable that the party should consist of more than two. The dangers of this climb are at least as great as the difficulties, and, if one to be repeated at all, could only properly be undertaken by men who knew their own capabilities too well to require instructions from others. Where no skill or experience can obviate very evident risk the question resolves itself into one of mountaineering morality which the expert, and the expert only, may answer for himself.

On the question of roping two on snow-fields Mr. Mummery apparently makes a more daring departure from tradition. He argues, not very convincingly, that there is no very particular reason for a man to fall into a crevasse, and that he himself has never had the experience; further, that falls into crevasses at all are not common. They are more common than he knows, but, largely, we believe, owing to the still prevailing custom of roping three competent men together, they have comparatively seldom led to fatal results.

Mr. Mummery of course deals with guideless climbing, and, again,

arrives at the conclusions that, after no little discussion at one time, are now generally held. He sets forth anew the charm of freedom from professional assistance on the mountains, which all who have tried it will recognise. In a side burst of contempt for 'doers of the Alps,' record-cutters, and time-servers, he points out how 'the guideless climber is rarely seen returning till the last lingering glow has died out of the western horizon.' True, most true. We too have noticed the same point. Often, indeed, the party returns when the glow is just beginning in the opposite horizon!

Artists and photographers rarely in reviews get their fair share of notice, and the length of this article compels the writer once again to do the illustrators scant justice. The reproductions of some of Signor Sella's and Mr. Holmes's views are admirable—so good, indeed, that it is with surprise and pleasure that we learn they were 'made in England.' Mr. Holmes's strong photographs are brought out particularly well. Signor Sella's beautiful work suffers a little by comparison, chiefly owing to the fact that the reproducers (the Swan Electric Engraving Company) did not have the advantage of working directly from the negatives. But however the details of 'Process' may be perfected, the results can only make us mourn for the decline of the wood-engraver's art. Are we never again to have work like that of Mr. Whympers's 'Scrambles?' Mr. Pennell's small drawings are good and life-like, but the coloured frontispiece is a failure. The clouds suggest Mr. Galton's finger-prints.

Nothing that has been written above will, we hope, convey any impression other than that the book, as a whole, is excellent. May Mr. Mummery meet with the same success in the Himalayas that he has attained in the Alps and the Caucasus, and may he write another and as good a book on his return!

C. T. DENT.

The Alps from End to End. By Sir W. Martin Conway. (Westminster: Archibald Constable & Co. 1895. With 100 full-page illustrations by A. D. McCormick. Pp. 403. Price 1*l.* 1*s.*)

This sumptuous volume contains the detailed history of Sir W. M. Conway's remarkable journey in 1894 from the Col de Tenda, not very far from the Mediterranean, to the Ankogl, not so very distant from Vienna—in short, from one end to the other of the Snowy Alps. Accompanied for the most part by an English friend, and by one or more Italian guides, and throughout by his two faithful Gurkhas (who had been with him in the Karakoram Himalaya), the author spent 86 days in the Alps: 65 of these were march days, during which 21 peaks (of various sizes) and 39 passes were climbed or crossed, the extent of ground covered being roughly estimated at 1,000 miles. These dry details may serve to give some idea of the nature of Sir William's rapid flight through the Alps.

In these pages it is scarcely necessary to write at length of a book which has for author a V.P. of the Alpine Club and the reigning Editor of the 'Alpine Journal,' and so is sure, even had its merits been far less than they actually are, of a warm reception from all interested in Alpine literature. But there are at least three points

which, in my judgment, make the work one to which the epithet 'remarkable' may with singular fitness be applied.

The first is Sir William's object in undertaking such a long journey. It was, apparently, mainly devised as a protest against 'Centrism,' and as a manifesto (reactionary in the best and most literal sense) in favour of the 'Wandering' (though it is to be hoped not too erratic) policy or system all but universally followed by early Alpine travellers. This is only what one might naturally expect from the inventor of 'Climbers' Guides,' but here one finds a practical exposition, enlivened by many personal touches, of the principles on which that somewhat Dry-as-dust series is based; and, after all, the practical application of principles is more important, as well as more generally interesting, than a bare list of the principles themselves. As the author points out in his introductory chapter, the Alps are not a single line of peaks, but a series of locally parallel ridges covering a region. Many routes, therefore, may be planned across them, and such a course has a double advantage. On the one hand, the 'wanderer' gains a clearer idea of the relative characters of the chief mountain groups, which appear in their true light as huge masses of the folded earth-crust, in which peaks, even the highest, are but details of small moment. On the other, the climber who takes a line across these parallel ridges realises that the whole mountain mass is an elevated region, of which some parts, like valleys, are below, and others, like peaks, are above the normal level—in this way grasping the real nature of the physical history of the Alps, as well as their ethnological and political importance. Few indeed can run through the whole chain of the Alps in a single summer, like Sir William, but any one can try to take a section each summer, and such a man will certainly derive great enjoyment, as well as instruction, from even a partial following of the ideal held up to his readers by the author.

Another point in this book cannot fail to strike even the most casual reader—the vast extent of the writer's interests. There are, indeed, but few 'gymnastic' ascents recorded in these pages; but to make up for this we have local legends, remarks on matters relating to the arts, an analysis of what constitutes 'wildness' in a landscape and of the essential features of a panoramic view properly so called, notices of the various methods of cheese-making, as well as of historical water-courses (such as that at Savièse, in the Vallais) and of historical land-slips (such as that at Elm)—observations on a host of matters which would pass unnoticed or despised by the average scrambler, desirous only of 'doing' as many 'classical' peaks as possible in 'times' as nearly approaching 'records' as possible. And be it remembered that all these topics are in addition to many an amusing description of incidents of travel and mountain adventures, as well as thumb-nail sketches of Sir William's comrades or the persons who were fortunate enough to meet him in the course of his long journey.

The third point in this book to which I wish to call attention cannot be better expressed than in the words of Aymonod (who in a sense acts as 'chorus' throughout these pages). 'You keep on surprising us. We have never travelled with any one who used maps and instru-

ments to find the way. It is really wonderful to us what can be done by such means' (p. 271). Possibly one might see in these expressions a touch of satire as regards those who are content to be simply led by their guides. But it seems to me that they contain the key to the writer's striking success in the exploration of mountain ranges, wholly or in great part unknown to any member of his party. As Sir William's Alpine experience helped him in the Karakorams, so his Himalayan experience was of great service to him in his great journey through the Alps. If, as Aymonod rightly went on to say, no young guides should be licensed unless they know how to use the map and compass, how much truer is this of their employers, who are presumably more educated! In case of bad weather, or thick mists, the utility of such observations was again and again proved by Sir William's experience in 1894, for the weather was far below the average and often an ill-led party would have gone wildly astray. Yet Sir William's dogged perseverance, under unpropitious conditions of weather and snow, his cheeriness in circumstances which would have driven many men to despair, his readiness in devising and executing an alternative route when that originally projected had to be given up, for whatever reason, the trust placed in his comrades, which was deservedly met by their unwavering confidence in their leader—all have helped to make his journey of 1894 a success in itself, a source of instruction to many readers and of intense pleasure to all. Personally I cannot thank the author too heartily for his fresh, vivid, and pleasant narrative of his journey, and I earnestly hope that he may find many followers, with axe and with pen, though these will have their work cut out in order to come near the standard set before them.

Sir William has found an admirable helper in Mr. M'Cormick. I confess that, as a rule, I prefer a photograph, albeit poor, to a drawing, however fine, of scenes among the Alps. But to all rules there are exceptions, and I must say that several of Mr. M'Cormick's delicate sketches have almost reconciled me to their topographical vagueness. Better qualified persons than myself will render to his drawings the honour that is really due to them, but it is something in his favour that the artist has succeeded in shaking the prejudices of so inartistic and prosaic a person as myself.

W. A. B. COOLIDGE.

Zeitschrift des Deutschen und Oesterreichischen Alpenvereins.

The volume for 1894 (the twenty-fifth) is devoted to the celebration of the twenty-fifth anniversary of the foundation of the club. In 1862 the Austrian Alpine Club was founded, and in 1869 it was re-formed and enlarged as the German and Austrian Alpine Club. The special objects of the club were the scientific exploration of the German Alps, and the facilitating of the approaches to them. Professor Éd. Richter describes the scientific results obtained during the last twenty-five years. Herr Ludwig Purtscheller gives an account of the development of Alpinism during the same period, illustrated by portraits of many of the early pioneers, and others of a more recent period, and also by many drawings of difficult Alpine situations. We miss the presentment of Herr Purtscheller himself, but perhaps that is to be

found in more than one of the situations. The editor (Johannes Emmer) contributes a long article on the history of the club. Here we find the portraits of many of its chief promoters. There are now more than 200 sections, of which Munich is by far the largest, having 2,637 members, whilst Vienna (section Austria) has 1,613, and Berlin 1,250. There is one section in England which has its seat at Manchester, and comprises sixty members. Many of the principal sections have selected special mountain districts, to the development of which they devote their energies. Nearly 70,000*l.* has been expended by the club, chiefly upon huts and upon new or improved paths. There are now no less than 141 huts, of which eighty-nine are illustrated in this volume. Many of these are open as inns during the summer, and some of them have developed into veritable Alpine hotels. Each mountain group will soon be surrounded by a network of huts, so that a mountaineer may ascend all the summits of the group without ever descending below 7,000 feet.

Sulden-Trafoi: Schilderungen aus dem Ortlergebiete. Von Th. Christomannos. (Innsbruck, 1895.)

This handsomely illustrated and very readable volume is neither a guide-book nor a scientific monograph. It is rather intended to attract the general traveller to Sulden and Trafoi, and to contribute to the development of those places as centres, alike for tourists and climbers. A chapter is devoted to the mountaineering opportunities of the neighbourhood, and, though this makes no claim to being a complete account of the climbs afforded by the neighbouring mountains, it describes many of them in an attractive fashion. Of late years Sulden and Trafoi have drawn a larger number of English visitors than formerly, and the tendency will, no doubt, become more pronounced as means of communication are improved and Switzerland becomes more and more packed with blatant crowds. Chapters are devoted to walks about Sulden and to the main routes by which that place is reached. Lovers of the Tirol will find this book worth adding to their Alpine libraries.

CORRESPONDENCE.

SPITZBERGEN.

To the Editor of the ALPINE JOURNAL.

SIR,—My attention having been drawn to a notice on 'Ice Fiord, Spitzbergen,' by Mr. V. H. Gatty, in the 'Alpine Journal,' February 1895, I take the liberty to make some remarks regarding the map which accompanies Mr. Gatty's paper (p. 310). To any one who has visited the place himself it is evident that Mr. Gatty has drawn his map from some distance, in consequence of which it is not correct. What Mr. Gatty names 'Sassen Bay' belongs partly to another fiord named 'Tempel Bay.' This latter was discovered by myself and Baron G. de Geer during our geological expedition to Spitzbergen in 1882, and I myself made a most minute map of it by means of a theodolite, triangulating the whole fiord. I published an exact map of it in the journal 'Ymer,' issued by the Swedish Society for Anthro-

pology and Geography in 1883 (p. 130), of which map and the accompanying paper I send you a copy herewith. As you will see, the differences between my map and Mr. Gatty's are considerable. He seems not to have been aware of the excellent anchorage named Harbour of Bjona, which is described in my paper, and which seems little known even to the Norwegian seal-hunters, who often have to suffer from stormy weather in Sassen Bay.

Believe me, dear Sir, most sincerely yours,

ALFRED NATHORST, F.M. Geol. Soc. of London.

PROCEEDINGS OF THE ALPINE CLUB.

A GENERAL MEETING of the Club was held at 23 Savile Row, on Tuesday, May 7, at 8.30 P.M., Mr. Douglas W. Freshfield, *President*, in the chair.

The *PRESIDENT* suggested that members might convey to the Committee any suggestions for the decoration and arrangement of the new rooms, in which they met for the first time, as might seem good to them.

He announced that the Committee had, in tendering their condolences to the present Tsar on the death of his father, recorded their sense of the many kindnesses shown by the Russian Government to members of this Club, and the sympathy displayed by the late Tsar himself during his visit to the Caucasus in the search for Messrs. Donkin and Fox. A very cordial letter in reply had been received from the Russian Embassy. The *President* also announced that the Marquis de Nicolay, a very old foreign member of the Club, had recently died. Many would remember the shooting chalet near the Miage Glacier, where Englishmen were always welcome and treated with the greatest hospitality. He was sure that all members would feel sympathy with his brother, who was also a member of the Club.

Mr. CONWAY informed members that he had heard from Mr. E. A. FitzGerald from New Zealand. Before Mr. FitzGerald had reached New Zealand with Zurbriggen, some members of the New Zealand Alpine Club had already ascended Mount Cook without guides, which was very creditable to them. FitzGerald turned his attention to other peaks, and was the first to climb Mounts Tasman, Sefton, Sealy, Silberhorn, and Haidinger. Zurbriggen said the ascent of Mount Sefton was the most dangerous he had ever made. From Mount Sefton a pass was seen across the main range, offering but little snow. It was afterwards found to be the most easily practicable pass discovered in that district to the westward. Zurbriggen climbed Mount Cook alone. He reported the ascent an easy one by the route he followed.

Dr. CLAUDE WILSON read a paper entitled the "Corno Bianco."

Mr. CONWAY said that the literature relating to this mountain showed more misleading description and less detail than in the case of almost any other peak, and he therefore concluded that the mountain had been visited only by the æsthetic, and not by hard-headed and practical Philistines. He was glad his account in the 'Climber's Guide' was so inaccurate, or the mountain would not have been so thoroughly investigated as it had been by Dr. Wilson.

Messrs. DENT, CARR, and WILLINK and the *PRESIDENT* made a few

remarks, and the proceedings terminated with a vote of thanks to Dr. Wilson for his paper.

A GENERAL MEETING of the Club was held at the new Club Rooms, 23 Savile Row, on Tuesday, June 11, at 8.30 p.m., Mr. Douglas W. Freshfield, *President*, in the chair.

The PRESIDENT intimated, at the request of the Committee of the German-Austrian Club, that a Photographic Exhibition would be held at Salzburg this year from August 1 to September 15, to which members of the Club were invited to contribute. He also announced that a letter had been received from the Comte de Nicolay, thanking the Club for their vote of sympathy, passed at the last meeting, on the death of his brother.

In introducing the Rev. Walter Weston the PRESIDENT remarked that Japan had never before been brought before the Club.

Mr. WESTON read a paper on 'Japanese Mountaineering and Mountain Superstitions,' which was largely illustrated by lantern slides. His Excellency the Japanese Minister was present, and at the conclusion of the paper made some remarks, in the course of which he said that he had listened with much interest to Mr. Weston's account of his travels, but that he had little to add, as he was not himself a climber; nor were his people climbers on the whole, and, though many went to the mountains in the summer months, they did not understand going up mountains for no useful purpose. Recently, however, students of science and others had travelled more frequently among the mountains, and he hoped the day would come when some of his countrymen would be members of the Alpine Club, and that members would find their way to Japan, where they could be certain of a hearty welcome.

Mr. W. GOWLAND, F.C.S., said that he had travelled in the Japanese 'Alps' for geological purposes. He used the word 'Alps' advisedly, as the mountains were alpine in character and from 8,000 to 10,000 ft. high. There were no glaciers, and he had sought in vain for traces of glaciation.

Mr. NOEL E. BUXTON, who had travelled with Mr. Weston, said he rose to state what might not be apparent from Mr. Weston's paper—that the author was a climber of peculiar energy and merit. He considered Japan a delightful country for mountain travel, for there were mountains of difficulty, interest, and beauty, and the population reached far up the valleys, so that combined with mountaineering of a high order interesting matter connected with the people and their beliefs might be collected.

A hearty vote of thanks to Mr. Weston was unanimously passed.

MATHIAS ZURBRIGGEN, who was present, at the request of the President gave a short account, in French, of his New Zealand experiences with Mr. FitzGerald, and his solitary ascent of Aorangi (Mount Cook).

The SUMMER DINNER was held on Wednesday, June 12, at the Ship Hotel, Greenwich, Mr. D. W. Freshfield, *President*, in the chair. Forty-one members and guests were present. The weather was fine, and the special steamer was made use of by the whole party, and much appreciated.

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OVER MONT BLANC, BY THE BRENVA ROUTE, WITHOUT
GUIDES.

BY G. HASTINGS.

(Read before the Alpine Club on February 5, 1895.)

ON August 2 of last year, Mummery, Collie, and I made a way over the Mont Blanc range by a somewhat long, but new, route, which led up from the Argentière Glacier over to the Triolet Glacier. We then tramped down the long Val Ferret in a thunderstorm to Courmayeur.

The following day we felt well content to wait for the weather to mend. A calm and clear evening gave promise of better things, and as the amount of new snow that had fallen was small, we decided to start for the gite on the Brenva rocks the following morning. We got away from Courmayeur at 7.30, taking the day to reach the island of rocks rising out of the Brenva Glacier.

Shortly after leaving the last of the forest growth, from which we took the wherewithal to make our bivouac fire, we came to a small ravine, which necessitated a descent of, perhaps, 200 ft. The porters assured us an immediate descent was the only way to cross it.

One of the many merits of guideless climbing is that you are always free to discard old routes and attempt new ways; freer in the morning than in the evening, for the man who attempts a new route late in the day is surely a fanatic for sleeping out. Most climbers also, I have noticed, object to waste an elevation already gained; so we decided to let the porters 'gang their ain gait,' while we followed a route which promised well, and took us on to a buttress of the

cliff of the Mont de la Brenva. Along this we hoped to be able to traverse till we came to the usual route higher up the ravine. Our traverse carried us very satisfactorily up, in truth; but the only way of joining the porters with their precious burdens was by going down slippery grass ledges, making a longer descent than the porters had taken. We were then content to follow the usual track, taking our leisure as we slowly toiled up the rotten stone slopes which rise out of the Brenva Glacier. We reached the gîte at 3.10.

Collie and I looked after the details of the bivouac, while Mummery cut his way across some snow-slopes, which proved to be ice, to a point from which he could view the icefall, so as to pick out a way across for the morning. We hoped, by knowing this, to be able to get well on to the glacier before the day broke. From the rocks near our gîte we had the first front view of the Brenva face of Mont Blanc, and we picked out a route which we thought answered to the route described to us by Emile Rey. His route led up from the narrow ridge which buttresses the eastern face of Mont Blanc, and turning off to the left (here we must have misunderstood him), passes by what he called a 'petit vallon,' through the ice-cliffs which cap all this side of the mountain.

It is always a great satisfaction to have the time to discuss and settle the route for the morrow, which a lofty bivouac affords—to look out and plan new climbs, if not for the present season, for the seasons to come.

To me one of the great charms of mountaineering is the bivouac before a climb, high up among the glaciers, away from the valleys and their hôtels, hearing now and again the boom of an avalanche, and the crash of falling séracs, while the departing day lingers in the west, and the varying hues of the lowland valleys merge gradually into a deep purple. As we watched, the sun set, bringing out the unequalled beauty and strength of the Peuteret ridge, which rose at one end in jagged pinnacles, then soared with sweeping slopes to the summit peak.

As the streams and pools became frost-bound, we turned to the bivouac fire, which, if small in size, is not the less comforting, for its bright and flickering rays give a warmth which is as grateful now as the soup it has cooked. A small silk tent, weighing a pound and a half, was set up on a platform of unregenerate rock, which I offered to soften to the human form by covering with small gravel—an offer

which I afterwards regretted was dismissed as an unnecessary luxury.

Our three blankets were sewn up into a bag, and laid inside the tent, and the two bulkier of the party got into it first, leaving the third to wedge in between. The bag was a tight fit for three; turning over had to be done to word of command. By covering the more prominent of the rocks with my mits, a certain absence of acute discomfort was obtained. By this means I had some unconscious intervals. Several times I was disturbed by the restlessness of my more boulder-stricken friends, who were wanting a roll over, so as to put another portion of their frames to ache on the rocks.

Shortly after 2 o'clock the porters lighted the fire, and after we had breakfasted we gave the porters the tent and blankets to take back to Courmayeur.

The rope was put on at 3.30, and we started, reaching the glacier in a few minutes. Mummery led the way down towards the lower part of the séracs, and while we were threading our way in and out the tangled maze of crevasses the day dawned, and we were able to see more distinctly the nature of our surroundings.

The ice at first lay in frozen billows, with their troughs crevassed, like waves disturbed by the turbulence of the icefall, a formation which I would compare to the troubled waters seen in the side and lower pools of a mountain stream.

We had long and wide crevasses to cross by snow bridges, formed in a similar manner, as the connecting splinters of partially wedge-split timber, bridges which, firm and solid now, would, even if they lasted through the heat of the day, be closed to a retreat till long after sundown. We wandered farther into this tumult of frozen ice, now deep in a hollow, now viewing from a frozen crest, not a way that was straight, but one that wandered here and there, blocked at times by an ice wall where the leader had to have a shoulder to stand on while he was cutting the upper steps, and where the last man walked up leaning outwards, so as not to break the steps, and pulling on a fixed spare rope, helped at the same time by the men above pulling his body-rope.

We were making for the lower Brenva snowfield, so as to reach the ridge which rises against and buttresses this face of Mont Blanc, and dams back the upper snowfield of the Brenva Glacier.

On reaching the lower snowfield, here torn open by its meeting the more rapid flow of the icefall, we were forced by the run of the crevasses away to the left. After going for some distance over steep snow, up which it was barely possible to walk without cutting steps, we reached the foot of the buttress, close to where it 'abuts' on the mountain, and at the foot of the gully or angle so formed.

As we had risen from the icefall we had met the sunshine creeping down the mountain, and here the thin frozen crust of new snow began to get loose, and slid in small showers down the gully. While climbing up the rocks of the buttress we were for a short distance under fire from straggling pieces of snow crust, which, breaking away out of the gully, whizzed past us. As soon as we got out of range we halted for breakfast. It was then 8 o'clock. We were greatly pleased with the progress made, for Mummery's crossing of the icefall in 2 hrs. 20 min. had brought us well within the time we had allowed.

The buttress here runs out squarely, or at right angles to the wall of the mountain, then turns, and sloping gradually downwards, acts as a weir, over which the Upper Brenva Glacier falls.

We climbed up the rocks which, round and avalanche-rubbed, lay in broken terraces, pierced here and there by ice-filled gullies. By bearing a little to our right we arrived at the top of the rocks at a point where the buttress wall swung back to the right, and from the corner or promontory so formed the snow, sloping up towards what is known as the ice ridge, extended on the left to the mountain wall, and on the right lay back in line with the rocks. Along the line where these two slopes met a flat ridge of snow was formed, most of the way up which steps could be kicked. This ridge pointed due north, and we toiled up the slope till we reached the ice ridge or top of the buttress. We had now reached about 13,000 ft., and went gaily along the ridge for some distance until about 100 or 150 yards from the mountain wall, where the character of the ridge altered. The western or left-hand side was an unusually steep slope of ice, hardened by the wind, sun, and frost, while the leeward side was of soft, unstable snow, from which the cornices had broken off as soon as formed by the wind.

A vertical face of crumbly snow was left, into which the axe could be driven, but which gave no certain support to the foot. To walk on the top of this edge was a feat I had no intention of trying, while to have cut steps in the ice on

the frozen side of the ridge when we saw the steep slopes immediately in our front, up which steps would have to be cut, was an undertaking suited only to the endurance of Thor himself, or to the hardihood shown by the proud owner of a new ice-axe when let loose on the Mer de Glace on an off day.

Over and up that ridge we went astride, following at this point the method of progression adopted by some of the early discoverers—a race of men who made expeditions opening out new ground in the Alps and Caucasus with a boldness and skill which stand to the modern race of climbers like the feats of the old Greek heroes did to the ancient world.

At 9.50 we reached the end of the ridge, and found a level snow drift, where we rested and refreshed for some 25 min. Here all the food that was thought to be superfluous was left out of the rucksack. The mountain wall now in front of us was a direct challenge to combat; not a sham combat, but one where every step had to be won by hard blows, and where irresolution or an error in judgment would be repaid by a pitiless repulse.

Nature here spread before us a scene of grandeur more stupendous than any in the Alps. Below on our right lay the steep rolling folds of the upper Brenva snowfield, on to which avalanches of new snow, made incoherent by the sun, crackled and rumbled down the slopes between the Col de la Brenva and Mont Maudit. On our left the mountain wall stretched away to the Mont Blanc de Courmayeur and the Aiguille Blanche de Peuteret, a slope of dazzling whiteness, seamed here and there by avalanche courses. High up above where we stood, and extending for over half the distance round, threatening cliffs of ice and névé stood ready, when unchained by the ordering of Nature, to crash down the 3,000 ft. of ice slope on to the Brenva Glacier. For the present the recent fall of snow covered those cliffs of ice as a blanket, protecting them from the sun's rays, and allowed us to traverse the slopes below without the slightest risk.

I have heard many a climber hold forth upon the merits and virtues of his particular ice-axe—about its perfect balance, the ease and cleanness with which it cuts a step in ice, and so on. Our axes varied in weight, length, and balance, and we all three were extremely proud of them. But all youthful emulation seemed to have evaporated with seven hours' steady going. Mummery had done his tale of

work in leading through the ice-fall; Collie had found the way up the rocks; so far I had only kicked up the snow-slope, and had 500 ft. more to go. But as the other two had new ice-axes, I was quite willing to let them show what perfect ice-cutting tools they were. This, with much self-denial, however, they declined, and on I had to go again.

For a short distance the snow was in good enough condition to kick steps in; then it became thinner, with ice below, and steps had to be cut. For several hundred feet we went straight up from the ridge, along a somewhat indistinct projection or edge, having on our right the rock walls which fall away steeply to the upper snowfield which lies in the deep recess below the Col de la Brenva. When about two-thirds of the way up to the ice-cliffs, we bore off to the left, making for a depression or breach in the cliffs, up which we thought a feasible way to the Calotte lay, and which once surmounted, all our difficulties would be over.

With the exception of two short halts, we were cutting steps in hard ice from 10.30 to 2.15. The new snow that lay on it added to the labour, as it had to be scraped away to allow free play for the axe to cut into the ice below. The steps were cut deep and as far apart as we could stride; for getting up our peak was our aim, so the fewer steps we cut the more time we should have to surmount the difficulties ahead. It became after a time weary work cutting into the hard ice; and though there be great joy in swinging an axe, no man indulged in it more than his share.

We made one short halt on some rocks rising like an oasis out of the ice slope, and another in a small crevasse, where the man carrying the sack—warned by the fate of *Æsop's camel*—found a small piece of Yorkshire bacon to be a great incubus, and likely to break his back, so he took it out and left it in a crevasse.

As we obliquely approached the line of ice-cliffs we came to a promontory of ice overhanging on our left, and made for the corner or angle where it projected from the line of cliff. For 300 or 400 ft. these overhanging cliffs frowned upon and threatened us. Here the steps were strides indeed, and the axe was plied double speed, while a constant stream of ice chips rolled rustling down the slope below.

It had now got to be past two. We had arrived at the foot of the ice cap. We were in shadow, protected from the sun's rays by a great overhanging promontory, which higher up was continued as a ridge on the ice-cap. Alongside this ridge there was a corresponding depression, or 'val-

lon,' at the bottom of which we stood. Here the ice-cliffs were not so high, and it was up them we hoped to find a practicable breach.

The ice slope we had crossed was child's play compared to the cliff in front of us, which lay back, or rather stood up, at an angle of from 60° to 75° . The ice as it had broken off from the cliffs had not left, fortunately, a straight cleaved but an irregular and lumpy surface—of blue ice, certainly, but firm and solid.

Collie and I believe this is the kind of place that Mummery loves to find, and that hereafter his wraith will be found constantly going up and down nearly perpendicular ice-cliffs and gullies, like unto Woden's huntsmen, who are known to sweep over the frozen plains of the north hunting the were-wolves. In such places Collie and I are content with giving Mummery all the moral support that the rope affords the leading man.

The unevenness in the ice-cliffs was of some assistance; but cutting steps was most laborious work, as handholds were required to preserve the balance when rising from step to step, and cutting with one hand while holding on with the other is a very slow method of progression. I found it very numbing work standing still, paying out the rope round my ice-axe, which I had jammed in a small ice-crack.

The leader may be cutting the ice what he is pleased to call small, but small is merely a comparative term on such occasions; and to the man standing in an ice step 50 or 60 ft. below, what is small in terms of lumps of ice is phenomenal as a hailstorm.

We had agreed that if the ice-cliff was not surmounted by 4 o'clock, retreat would be necessary, as sufficient daylight would not be left to allow of our crossing the top of the mountain. The shadows from the ice-cliffs on our left were lengthening, and at 4 o'clock Mummery was far from having reached the top of the cliff, the steepness of the slope continuing the same. Retreat was therefore decided on, and while swallowing the bitterness of apparent failure of the expedition we had placed above all others, we now recognised that we had chosen an extremely difficult line by which to storm these giant cliffs. In wrestling parlance, we had gripped intent on a throw with the giant; the throw we had attempted had been countered; and if we now loosened our hold, it was with the determination to grip him again on the morrow.

Back we had to go across the ice slopes we had come up;

and while for a short way the distance apart of some of the steps required the cutting of an intermediate one, cutting down hill was a relief. Fortunately the staircase up had been cut deep, so an occasional small step between was all that was required, and that was soon cut. From the ice-ridge it had taken us $3\frac{3}{4}$ hrs. to reach the ice-cliffs; we returned in 1 hr. 25 mins.

As we went down the slopes and on to the ice-ridge we retrieved from the crevasse the now valuable piece of Yorkshire bacon and sundry crusts of bread left on the level snow-drift. To the student of political economy, I would submit, this is a remarkable instance of a sudden and unexpected rise in the value of a commodity apparently worthless. Most students would expect a commodity to rise in value the farther it was from the source of supply; but on this occasion the value fell, and it was only when returning towards the source of supply that it recovered and exceeded its former value. Whence we may infer neither the interpretation of economics nor of snow-slopes is to be acquired from the perusal of handbooks.

Back over the ice-ridge we straddled, and then down the now softened snow-slope, reaching the rocks we had climbed up early in the day. Here we stopped. Mummery suggested it was an eminently desirable place to spend the night, high enough up to give us a good start in the morning. Down below, at Courmayeur, there were the attractions of the table d'hôte and comfortable beds of Bertolini's hôtel.

One philosopher has said: 'Most of the luxuries and many of the so-called comforts of life are not only not indispensable, but positive hindrances to the elevation of mankind.' Now, as we were anxious to go for our peak again in the morning, we on this occasion determined to do without some of the so-called comforts of life, hoping by such self-denial that we should prove ourselves worthy of the elevation we were striving to attain.

If it was our intention to again try the ascent in the morning, there was very little choice as to where we should pass the night. To have reached our previous night's gîte on the island of rocks, now without the comfort of tent, blankets, and fire, we should have either to retrace our steps and cross the icefall, which could not have been done till the frost had hardened the snow bridges and stopped the ice avalanches, or we should have to descend the other side of the ice-ridge on to the upper snowfield, and cross above the

icefall the Brenva Glacier from where the rocks could be reached; but though this route looked quite feasible and easy for the most part, the glacier near the rocks was badly crevassed, and we might have been much delayed before we got down to the gîte.

If we stopped where we were, on the other hand, our position in the morning would be distinctly better. We should start with the advantage of being 2,000 ft. higher up; we should have two or three hours more of the night to rest in, if you can be said to rest when you are anxiously waiting for the night to pass.

The sky had every appearance of settled weather; and though we had seen that a strong wind was drifting the snow along the slopes of the mountain top, there was, fortunately for us, little or no wind during the night.

We had sufficient food in the sack with what we had gathered up to make an evening and morning meal, and we found plenty of water dripping off the rocks, melted from the snow-slope above.

The place we had chosen for the night was sheltered on one side by an overhanging crag; and when we had scraped off the snow from a big stone on the terrace below, we found there was sufficient room for the three of us to sit, and we proceeded to make ourselves as comfortable as our circumstances would allow. We took off our boots and stowed them away carefully under the overhanging rock, and wrung the water out of our stockings, and then put them on again. Our legs were soaked above the knees by the ice chips and snow, so the empty provision bags and paper were tied round them as additional coverings, and we found them a great protection against the cold. The rock we were sitting on did not afford comfortable seats. We could not even sit in a row; we formed three faces of a square, the centre man with his back to the rock. We thought there would be less chance of our feet being frostbitten if we put them into the rucksack, which was a large size and windproof. Now, this gave a very comfortable position to the middle man, but was an extremely irksome one for each of the outside men. Mummery's feet would only just reach into the rucksack, and required a great deal of attention to keep them there; on the other side, when I swung round and put my feet into the sack, I had, to prevent myself sliding off the rock, to embrace Collie by the waist, or prop myself by an outstretched arm against the wall behind. We then put on the rope, and hitched the end round a splinter of rock

standing close by. This we did to prevent any of us becoming permanently separated from our boots, a contingency which would probably happen if sleep-walking or slumber was indulged in.

We were comfortably—or, rather, resignedly—settled for the night before the sun had set. As it slowly moved down to and behind the Peuteret ridge, we realised, as one does on losing an old friend, that his absence would bring home to us, as nothing else could, the warmth of his presence.

As the light waned, the valleys and their intervening ridges grew more and more indistinct; the distant peaks and snowfields of the Grivola and Grand Paradis range became gradually fainter, and then faded away. Closer to, the snows of the Ruitor glimmered all the night through, and acted as a beacon for us to take our bearings from when we roused up and peered abroad from our lofty perch.

Immediately below, the lights in some chalets on Mont Chétif shone for a time; but folk living in chalets go to bed betimes, and we then had the night to ourselves. From time to time we noted how the stars marched slow across the western sky until blotted out by the Peuteret ridge, but it was like watching the hands of a clock: you cannot see them move; you are only supported by faith in saying you do so. During the evening one of the party fancied he saw an increase of light in the east, and caused a joy, in which even the most phlegmatic, because the most comfortable, member of our party joined. Naked truth, in the shape of a match, revealed that it still wanted twenty minutes to eleven. Nodding and dozing for a while, then waking up and beating one's limbs to increase the circulation, helped to slowly pass the midnight hours.

Though we all came from a land where the verdict of the majority is to be disputed not, but taken as law, it so happened that the details of provisioning the expedition had been carried out in defiance of the majority, and with some regard to contingencies. We had with us several candles, and also a small canister of tea. The latter we emptied, and then filled it with ice. This, by much patient holding over a two-candle-power flame, was slowly converted into water and boiled; then we made tea. We took it in turns to hold this kettle. My turn, however, only came once, as, after I had converted the ice into warm water, drowsiness overcame me, and the precious fluid was wasted on Collie's back.

I was not considered worthy of so honourable a post

again, and was only allowed to drink the tea after the others had brewed it.

Fortified by the tea, we were able to wait for the dawn with more patience and considerably increased bodily comfort. The day broke at quarter to four, and we were then in a mood to fully sympathise with the reasonableness of the morning attitude of the Parsee.

The sun that morning was a laggard; over the east a low curtain of cloud blotted out his kindly rays. Anxiously we awaited his rising, not so much for our own bodily comfort as for the sake of our boots, which were frozen solid, and neither breathing into them nor burning paper or candles in them would soften them sufficiently to enable us to get them on. Collie satisfied himself of the combustibility of his laces and the seeming incombustibility of Alpine rope, of which he started to make what he called a bonfire, but only succeeded in charring the rope, an act of sacrilege for which later in the day the gods mercifully did not exact the full penalty, satisfied, I suppose, by the penance of our lonely and frigid vigil.

We had eaten the remaining crusts of bread and drunk more tea, calling it breakfast, before it was daylight, and had got ready to start; but start we could not without our boots. About 5 o'clock the sun at last gleamed on the slopes above, and in a short time we felt his rays, and basked in them while our boots were thawing. It was not till 6 o'clock that we roped up and got off.

Though my recollections of the night we had passed on those rocks have been toned down by the passing of time, I know I left the scene of our vigil without regret. There are some situations where man does not rise superior to his environment. One wise man has stated with modest pride, 'that life is a permanent possibility of sensation.' If I thought it was to be my lot to have the permanent possibility of similar sensations, I should consider prolonged immersion in the frozen lake of Dante's 'Inferno' as preferable to life itself.

The rope, I have noticed, after a night out is in sympathy with one's bodily feelings: it is stiff, full of kinks, and swollen by the encrusted ice to twice its size, giving it an appearance that is most depressing.

While we slowly plodded up the snow, so as to get on to the ice-ridge once more, the sun gradually thawed out our kinks and the kinks in the rope, and we were put into good heart; for we found the snow in better condition, and the

day too was younger by three hours than it was when we had reached the same point the day before. The ice ridge, although improved compared to what it was the previous day, over part of it I again preferred to go astride. We then stopped for a few minutes to pick out a more promising way through the ice-cliff on to the upper snows. Straight above where we had turned off to cross obliquely the ice-slopes the day before, and 500 ft. higher up, a low ridge of rocks led straight up, until it was covered by the ice-cliffs; this ridge was the water-parting, or rather the ice-parting, of the gathering grounds of the upper and lower Brenva snowfields. To the right of the line of rocks the ice-cliffs towered over the rock wall, which falls away down to the upper snowfield. The cliffs here were crevassed at the edge. A crevasse is a breach to be made use of in default of a better line of assault. Besides, there was another advantage in this route: it involved much less step-cutting than one we saw much further to our left beyond where we had tried the day before.

Leaving the ice-ridge at 6.50, we had our old line of steps for several hundred feet; then we had to hew our way for over an hour up very steep slopes until we reached the rib of rocks. These afforded a pleasant change and some interesting scrambling.

On reaching the foot of the ice-cliffs, we bore away to the right, cutting steps along the base of them, here resting on the edge of the rock wall, until we reached a crevasse, which had been opened by one-half the lower side tumbling over the rocks, and by this opening we hoped to get out on to the top of the line of ice-cliff. Into this gap blocks of blue ice had fallen, making a very steep pitch or wall of about 25 ft. We tried it, did not like it, and thought we should do better elsewhere; so we traversed back to our left.

Two chinks in the ice-cliff we tried, but they gave no better line, the steepness of the slopes being most forbidding. Back we were then driven to the crevasse opening. There seemed to be no more feasible way. The thought of retreat was dismissed—'Our doubts are traitors, and make us lose the good we oft might win by fearing to attempt.'

The pile of loosely tumbled ice blocks was frozen together, and covered in places by fresh snow. Though it was noon, we were in shadow, and our wet fingers froze to the ice when we touched it. A short distance off a cave ran far back into the ice-cliff, and while two of us stationed ourselves in it, the other man tried to get up the pile of frozen

blocks. At the second attempt Collie, our featherweight, boldly overcame the difficulty by fixing the three ice-axes into the interstices of this curiously formed wall, and using them as handholds and footholds. Mummery and I, who had stood inside the cave paying out rope, now followed, climbing delicately.

After having girded ourselves up to climb this unstable-looking wall, it was with no small feeling of annoyance that we now saw there was an easy and perfectly safe way through a tunnel in the ice from the cave below—a practical joke on the part of Dame Nature which we thought to be at the time very unbecoming. We had passed the cliff or outer wall of circumvallation, and skirted over deep snow towards the right in the direction of the Col de la Brenva. In 20 min. we came to the inner wall, or last difficulty, formed by a fault in the slope of *névé*.

The wall of *névé* was for 20 ft. absolutely vertical, so Mummery began by cutting steps for about 14 ft. up, steadied by a shoulder from below; then he thrust first one axe, then another, into the *névé* as handhold and foothold, and slowly made a way up. Higher up, the slope still continued very steep, and Mummery groaned at the work in prospect. Collie and I, however, heartened him on, being, as spectators, more inclined to take a cheerful view of our prospects than he was, panting from his exertions. The snow chips began again to fall, and a short time afterwards, all the rope being paid out, Collie followed. Finally the rope was dangled down to me. I tied on and joined them. After cutting two or three score more steps, the angle became less steep, and we could walk up. It was then 1.30, and we had the final slope of the mountain in view; so we of one accord sat down and looked at it, and very far up it looked. Then we examined the map, and found 400 mètres had to be ascended, and we all groaned. Slowly we plodded on, halting frequently; but on reaching the *Petits Mulets*, we were exposed to a furious wind, driving the snow crust into our faces, numbing our hands and feet. Along the ridge our halts were indeed shortened, but we took them oftener. At 3.18 we stood on the top. In what condition we reached it 'twere best not told; reach it we did. That final slope had been a weary task.

On pulling up the rope behind him, Mummery was momentarily much horrified, though surprised at the ease with which it had come up, to find that Collie was no longer attached.

So absorbed was Collie in mentally recording the effect of low pressure on the human body, that he preferred to come up without the encumbrance entailed by the physical support of the rope.

The violent wind by which we were assailed on the summit made it a most undesirable place to linger on. During the few minutes we were there it was not so much the distant range of the horizon that impressed us as the feeling of elevation over all the surrounding peaks. When looking at Mont Blanc from any of the neighbouring aiguilles, one does not realise the same idea of its commanding height.

Leaving the top at 3.32, we struggled against the storm of wind and driven snow which was surging up from the Allée Blanche. We turned off to the Vallot hut, where we sheltered for a few minutes. Plunging down the caravan track with our backs to the wind, our joy was unconfined, and life soon assumed a rosier aspect. At 5.45 we reached the Grands Mulets, that haven of aspiring souls, then filled to overflowing by some dozen, and their guides. Here we partook of omelettes, which the geographer of our party assured us were the best omelettes in 'Switzerland!' and nothing would induce him to move and go down with us to Chamonix. Reluctantly we left him ordering more omelettes. Mummery and I now felt that as we had attained the greatest elevation possible to man in the Alps, most of the luxuries and the comforts of life were, not only indispensable, but the natural reward for efforts so prolonged. We crossed the lower glacier, hurrying before the advancing night; followed the path with wondrous skill to beyond the Pierre Pointue; and then became entangled in the forest growth. Here we ran into manifold dangers, to avoid which the modern handbooks to mountaineering are no sure help. Following a stream as a guide, we had to descend declivities where the branches of bushes were our only holds, and the first man had not that enjoyment of pride of place that the old saw of 'first through a wood and last through a river' had led him to expect. We reached Chamonix at 9.45, and, though we grieved for our absent friend, his fate was not an unhappy one, consoled as he was by the communion with aspiring souls, and compensated by that self-sufficing joy afforded by the assimilation of omelettes.

I think no apology is due to readers of the Journal for writing an account of an ascent which was described in the Journal twenty-nine years ago; it is a route which is very seldom done, and one that is wholly exceptional for the

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ASTOR, LENOX AND
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Becca de Guin

Les Jumeaux {
 P. Sella
 P. Giordano
 Punta Lloy
 Col des Cors
 Punta des Cors

Grandes Murailles {
 Punta Margherita

Col des Grandes Murailles, or
 du M. Tabel

Dent d'Hérens

Matterhorn



From Photographs by Mr. Alfred G. Topham

THE VALPELLINE-VALTOURNANCHE RANGE FROM THE DENT DES BOUQUETINS.
 (1.)

grandeur and beauty of the ice scenery, and the sustained interest which the climbing affords.

' Is it so small a thing
To have enjoyed the sun ;
To have lived light in the spring ;
To have " climbed," to have thought, to have done ;
To have advanced true friends, and beaten down baffling foes ? '

THE VALPELLINE-VALTOURNANCHE RANGE.

By ALFRED G. TOPHAM.

THIS range has received a great deal of attention during the last few years, which is not surprising, as a glance at the map will show that it is perhaps the most important and extensive of the lateral ridges of the main Pennine chain descending towards the S. East of this range, and even under the mass of Monte Rosa, the offshoots are quite insignificant in height; and there is no buttress like this to the W. Although the two valleys are so easily gained from Zermatt few have left the beaten track to explore even the peaks above Breuil. Some members of the Italian Alpine Club have been doing excellent work in this district, and many new ascents have been made, both of peaks marked on the Italian Government map and also of unmarked ones. It is in the interest of the latter that I have been requested to write this monograph.

The range starts from the Dent d'Hérens, at first in a southerly direction, dividing the Valpelline from the Valtournanche, and afterwards making the southern boundary of the Valpelline. Seen from Breuil, the peaks from the Murailles to the Château des Dames appear in almost indistinguishable proximity to one another; but on the Valpelline side they are easily distinguished, and snow-fields lie high up on their sides. In dealing with this range I have in most cases only briefly mentioned the unimportant spurs which are thrown off by the main chain.

For assistance in the district S.W. of Mont Redessau I have to thank Signor Felice Mondini (C. A. I., Sezione Ligure), who kindly sent me the advance proofs of his excellent monograph entitled 'Un Angolo Dimenticato delle Pennine. La Valle di St. Barthélemy,' which has just appeared in the 'Bollettino del Club Alpino Italiano' for 1894. Directions will be found in it for all the ascents and passages round the Val St. Barthélemy, and a map of that valley, which corrects the many inaccuracies of the Government map.

The panorama which accompanies this paper was taken by me, in 1889, from the Dent des Bouquetina. Other photographs of this district are Sella's 101 from Matterhorn, 119 from Tiefenmattenjoch, 265 from Ruinette, 417 from Château des Dames, and 194 of Donkin's series. The references are to the Italian Government map (I.), Adams-Reilly's map (A.-R.), and the Sardinian map (S.). Heights are given according to the I. map. Sometimes the altitudes are given

in it, but no names; in these cases I have supplied the names without comment.

1. *Col des Grandes Murailles* or *du Mont Tabel* (3,869 m.).—First passage by J. A. Carrel and J. B. Bich, July 8, 1868 ('A. J.' vi. 294 and xiv. 500; 'Scrambles Amongst the Alps,' p. 160).

2. *Grandes Murailles*.—The northern point (3,877 m.) is called the Punta Margherita, and was first ascended by Evan Mackenzie, August 22, 1892, from Prarayé by the Za-de-Zan Glacier ('Rivista,' xi. 361). Of the S. point (3,771 m.) I have no information.

3. *Punta des Cors*, or *Punta Gastaldi* (3,853 m.).—By A.-R. wrongly called Les Jumeaux. First ascent by Sig. Corona, July 27, 1877, from Breuil by the foot of the Mont Tabel Glacier. Thence the route bears to the N., and traverses under the Punta Giordano to the S.E. arête, which is followed to the top; 8 hrs. from Breuil (Corona's 'Manuel,' p. 107; 'Rivista,' iii. 3 and x. 299; 'Echo des Alpes,' 1876, p. 200).

4. *Col des Cors* (3,800 m. *circa*).—First passage by Evan Mackenzie from Breuil to Prarayé ('Rivista,' xi. 363).

5. *Punta Liroy*.—The height is also given as c. 3,800 m. It must be several hundred feet higher. First ascent by Camillo Broglio and Innocente Clivio, July 19, 1890; 11 hrs. from Breuil ('Rivista,' x. 292).

6. *Le Gemelli*, or *Les Jumeaux de Valtournanche*.—The most northern point is called P. Giordano (3,873 m.), and was first ascended by Lord Wentworth, September 6, 1877, from the gap between the Twins in $\frac{1}{2}$ hr. ('A. J.' ix. 3; 'Bolletino,' 1878, pp. 6, 590; 'Rivista,' xiii. 114; Corona's 'Aria di Monti,' p. 203).

The Gap between the Twins was first reached by Sig. Corona, August 12, 1877; $5\frac{1}{2}$ hrs. from Breuil ('Riv.' iii. 3; 'Manuel,' p. 105).

P. Sella, the southern point of Les Jumeaux, about 3,860 m. (A.-R. Bec de Giulia), was first ascended by Sig. Corona, June 10, 1875, by following the ridge from the Becca de Guin (Corona's 'Picchi e Burroni,' p. 305; 'Echo des Alpes,' 1876, p. 90; 'Boll.' 1875, pp. 281-3; 'Riv.' xiii. 114; 'A. J.' vii. 268). The peak has also been ascended from the gap on the north in $\frac{1}{2}$ hr. (Corona's 'Manuel,' pp. 104-5), and by the east face and south arête ('A. J.' ix. 4).

7. *Becca de Guin* (3,805 m.).—The name is wrongly placed on the I. map. First ascent by Signori Baretta, Martelli, and Vaccarone (September 16, 1874) by the Cors Chalets and then by traverses to the ridge; 7 hrs. from Breuil ('Boll.' 1875, p. 282; Corona's 'Picchi e Burroni,' p. 298; Baretta's 'Per Rupi e Ghiacci,' p. 72; 'Riv.' x. 299, 348, xiii. 115).

8. *Col Budden*.—First crossed by Sig. Corona, June 11, 1875 ('Boll.' 1875, p. 283; Corona's 'Manuel,' pp. 86-7; 'Echo des Alpes,' 1876, p. 95; 'Alpinista,' 1875, p. 134).

9. *Becca de Créton*. (3,637 m.).—I. map Becca de Guin; A.-R. Bec de Créton. First ascended by Sig. Corona, June 10, 1875 ('Echo des Alpes,' 1876, p. 90; 'Boll.' 1875, p. 282). Sig. Corona ascended the peak by the N. arête (7 hrs. from Breuil) and from the west.

10. *Tour de Créton* (3,583 m.).—I. map Becca Créton. First ascent by Sig. Corona from near the Col de Créton, July 27, 1875 ('A. J.' vii. 319; 'Alpinista,' 1875, p. 133; Corona's 'Manuel,' pp. 92-3; 'Riv.' xi. 362).

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Becca di Lusney
 Colle di Lusney
 Cima di Livournea

 Colle di Livournea

 M. Arpette

 M. Redessau
 Colle di Chavancour
 Punta di Chavancour

 Dôme di Cian

 Col di Val Cournera
 Punta di Fontanella

 Punta del Dragone

 Col du Petit Gl. Bellazà

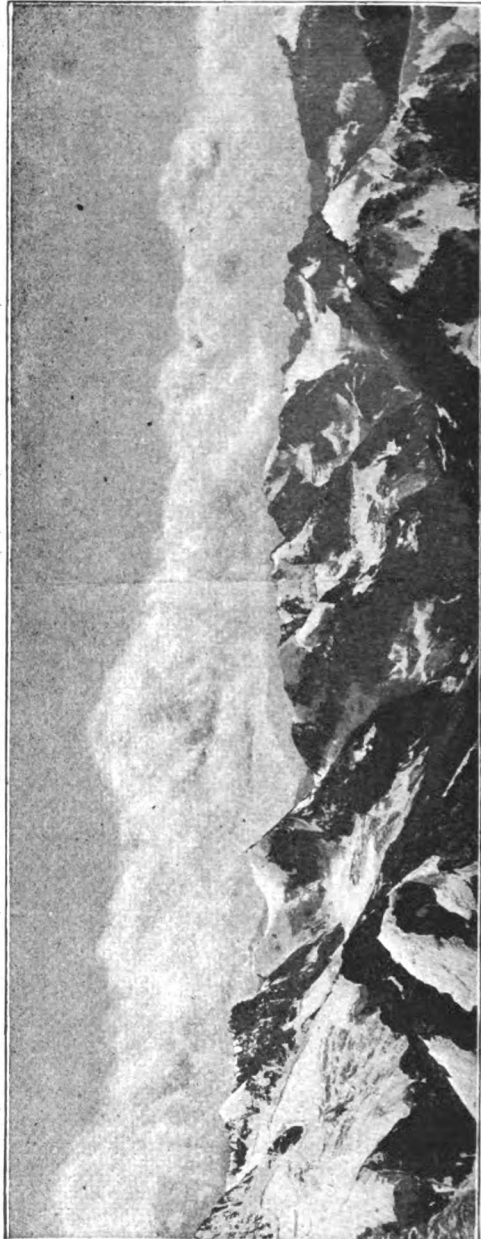
 Château des Dames

 Col du Château des Dames

 Mont Blanc de Crétin
 Col de Crétin
 Tour de Crétin

 Becca de Crétin

 Col Budden



From Photographs by Mr. Alfred G. Topham

Mont Bruié
 THE VALPELINE-VALTOURNANCHE RANGE FROM THE DENT DES BOUQUETINE,
 (11.)

11. *Col de Créton* (about 3,324 m.).—First crossed by Conway, Carr, and Davies. In the descent on the Breuil side numerous grass-covered ledges must be crossed in a N. direction ('A. J.' xv. 306; 'Riv.' x. 64).

12. *Mont Blanc de Créton* (3,420 m. *circa*).—Called Becco di Créton by Adams-Reilly.

13. *Col du Château des Dames* (3,350 m. *circa*).

14. *Château des Dames* (3,489 m.).—First ascent by F. W. Jacomb, August 11, 1860. The peak is easily reached from the Col Volfrède in 3 hrs., and by the S.W. arête ($1\frac{1}{2}$ hr.), and has been descended by the S.W. face ('Peaks, Passes, and Glaciers,' second series, i. 311; 'Riv.' iv. 342 and viii. 410; 'Boll.' 1875, p. 108).

South-east of the Château des Dames is the Col Volfrède. This is a convenient way of reaching the mountain, or the Col di Val Cournera, from Breuil ('A. J.' xvi. 262). Next to the Col is M. Rouss (3,241 m.) which is easily ascended, and the Col de Dza or de Fenêtre.

15. *Col du Petit Glacier Bellaza* (3,063 m.).—An old pass.

16. *Punta del Dragone* (3,394 m.).—A.-R. Bec de Fontanella. First ascent by A. G. Topham, July 24, 1894, by the W. arête, in 7 hrs. from Prarayé, and descent in $1\frac{1}{2}$ hr. by the N.E. arête to the Col du Petit Gl. Bellaza ('A. J.' xvii. 256).

17. *Punta di Fontanella* (3,386 m.).—The first ascent of this peak was made by Dr. A. Baltzer (S.A.C., sect. Uto) in July 1864, with the guide Berrard, but no record was made. The next ascent was made by H. W. Topham. He ascended a couloir conspicuous from the route to the Col di Val Cournera, and so reached the arête, gaining the summit by the face in $1\frac{3}{4}$ hr., and descended the Fontanella face. The summit was reached by the S.E. arête from the col in $1\frac{1}{2}$ hr. by C. G. and W. D. Monro and O. G. Jones, August 22, 1892 ('A. J.' xvi. 262).

18. *Col di Val Cournera* (3,145 m.).—'P., P., and G.,' second series, i. 316. A very old pass.

19. A very long and jagged ridge follows to the S., the heights of the points varying between 3,185 m. and 3,352 m. It is precipitous on the W., but scree slopes lead to the top on the E. It is not seen on the panorama.

20. *Dôme di Cian* (3,355 m.).—A.-R. M. Redessau. First ascent by SS. Origoni, August 16, 1889 ('Riv.' viii. 381) in 1 hr. from the Colle di Cian.

21. *Colle di Cian* (about 3,170 m.).—First crossed by G. Luzzati, B. Graziadei, and E. Borzini, June 9, 1889 ('Riv.' ix. 198).

22. *Punta di Cian*, or *Tsam*, or *Champ*, or *Guggia dei Cians* (3,321 m.).—First ascent by A. Lucat, September 26, 1874 ('Boll.' 1875, p. 111; 'Riv.' iii. 89, and viii. 381, and ix. 198); $\frac{3}{4}$ hr. from the Colle di Cian. The Punta di Cian is not seen on the panorama.

East of the Punta di Cian is the Col de Fort and the Becca de Salé ('Boll.' 1875, p. 113).

23. *Punta di Chavancour* (3,195 m.).—First ascent by C. H. R. Wollaston by the N. face, and then by the W. face, June 27, 1893 ('A. J.' xvi. 516).

24. *Colle di Chavancour* (*circa* 2,970 m.).—From Torgnon to Prarayé ('A. J.' xvi. 367); $3\frac{1}{4}$ hrs. from Prarayé to the Col.

25. *M. Redessau*.—A good deal of discussion has been raised as to the position of this peak. It is now fixed that it is the point 3,217 m., first ascended by C. G. and W. D. Monro and O. G. Jones from the Colle di Chavancour in $\frac{3}{4}$ hr., August 23, 1892 ('A. J.' xvi. 263-4). Correctly placed on the I. map.

The long range of hills which lies E. of the St. Barthélemy valley starts from M. Redessau. Nearest the main chain is the Cima Bianca (3,010 m.). North of M. Redessau is M. Arpette (3,170 m.).

26. *Colle di Livournea or de la Nouva* (2,851 m.).—From the Val St. Barthélemy to the Combe di Livournea ('Ball's Guide to the W. Alps,' p. 279; Gorret et Bich, p. 358; 'Riv.' xiv. 352).

27. *Cima di Livournea* (3,207 m.).—First ascent F. Antoniotti, E. Canzio, C. Grosso, and F. Mondini in 3 hrs. from the Colle di Livournea; descent in less than 2 hrs. by S. face to Crotes, September 8, 1894 ('Riv.' xiii. 322). The Cima is $\frac{3}{4}$ hr. from the Colle di Livournea.

28. *Colle di Luseny* (3,100 m. *circa*).—First reached by Adams-Reilly on his descent from the Becca di Luseny, August 2, 1866 ('A. J.' iii. 51), and crossed by A. Giles Puller, July 11, 1873 ('A. J.' vi. 293).

29. *Becca di Luseny* (3,506 m.).—First ascent by Adams-Reilly, August 2, 1866. His route followed the N.W. arête, N. arête, N.N.E. face, and N.E. arête ('A. J.' iii. 50; 'Riv.' i. 141). Other routes are (2) N.E. arête from Colle di Luseny, by A. E. Martelli, August 1, 1874 (Gorret et Bich, 'Guide de la Vallée d'Aoste,' p. 358); (3) E. face from Colle di Luseny, by the Misses Pigeon, August 14, 1876; (4) E. face from valley of Luseny, by Baretto and Oberti, August 2, 1882; (5) N.N.E. face, by F. Mondini, August 16, 1892 ('Riv.' xii. 32).

30. *Becca d'Arbiera or dei Terrà*.—This mountain has two summits. The S. point (3,420 m.) was first ascended by F. Mondini, August 28, 1892, by the S. arête. The N. point (3,442 m.) was first ascended by E. Canzio and F. Mondini, June 30, 1894, from the S. point. They descended towards the Becca di Luseny ('Riv.' xiii. 222).

31. *Colle Montagnaia* (2,860 m.).—From Acquilon, in the Montagnaia valley, to La Serva, in the St. Barthélemy valley, $3\frac{3}{4}$ hrs.

32. *Monte Montagnaia, or Punta di Pierre Plate* (3,060 m.).—A.-R. Becca d'Arbiera. The first recorded ascent was made by E. Canzio, A. and C. Fiorio, F. Mondini, and N. Vigna by the S.W. arête, July 16, 1893, in $1\frac{1}{4}$ hr. from Cunei ('Riv.' xii. 202).

33. *Colle di Cunei* (2,952 m.).—A.-R. and the I. map call this the Colle Montagnaia. From Bionaz by the Montagnaia valley to Cunei in $5\frac{1}{4}$ hrs.

34. *Becca del Merlo* (3,245 m.).—First ascended by E. Canzio and F. Mondini, July 1, 1894 ('Boll.' 1894, p. 34).

35. *Colle del Merlo* (3,020 m. *circa*).—From Cunei to the Montagnaia valley, first crossed by E. Canzio, F. Mondini, and N. Vigna, June 30, 1895 ('Boll.' 1894, p. 33).

Immediately south of the Col del Merlo and nearer the col than to M. Pisonet is the starting-point of the ridge which divides the Vessona and Montagnaia valleys. The Italian map gives the Becca del Merlo as the starting-point.

36. *Monte Pisonet* (3,215 m.).—First ascended by E. Canzio, C. Fiorio, F. Mondini, G. Rey, and N. Vigna, June 25, 1893, from the N.E. in 1½ hr. from the foot of the wall.

37. *Denti di Vessona* (3,060 m.).—These three points are called by various names on the maps. A.-R. gives Pointes de Pisonet; S. map has M. Pisonet or Vessona; the I. map gives only the height. The most northern point is the highest, and none of them have been ascended.

38. *Colle di Vessona* (2,794 m.).—From the Comba Brevia to the Vessona valley. First crossed by the Rev. S. W. King, August 27, 1855 (S. W. King, 'The Italian Valleys of the Alps,' p. 184).

39. *Monte Faroma* (3,072 m.).—First ascended by the Capitani Casalegno and Albert in 1832 from the Colle di Vessona (L. Vaccarone, 'Statistica delle prime Ascensioni nelle Alpi occidentali'). A. Darbelley descended by the E. face, September 15, 1895 ('Riv.' xiv. 384).

South-west of this point, and at a little distance from it, a spur starts, with highest points Gran Pays and Becca d'Avuille (A.-R. Aveiele).

40. *Colle Faroma* (2,774 m.).—From the Comba Dèche to the Vessona valley.

41. *Cima Verdone* (2,877 m.).

From this point a spur runs N., with summits Gran Cutà (2,864 m.) and Becca di Nona (2,887 m.).

42. *Col di St. Barthélemy* or *di Verdone* (2,650 m. circa).—From the Comba Dèche to the Verdone valley.

43. *Becca Conge* (2,828 m.).

44. *Monte Kantalaizena* (2,967 m.).—S. map and A.-R. M. Chala-taizena, but wrongly placed in A.-R. off the main chain to the S. It can be ascended in about 8 hrs. from Valpelline (Ratti e Casanova, 'Guida della Valle d'Aosta,' p. 257).

DAUPHINÉ IN 1895.

BY THE REV. W. A. B. COOLIDGE.

It so happened that I had not been to Dauphiné for four years until I spent a few days there at the commencement of last September. The mountains were the same, but otherwise much was changed in the matter of means of communication, inns, telegraphs, &c., so that I felt at times quite bewildered, recollecting how very different things were even a short time ago. It may, therefore, be of some use to intending visitors to the district if I briefly record the advance made in providing for the comfort of travellers.

I started from Grenoble (with my friend M. Félix Perrin) by the railway at 6.20 P.M., and in 28 min. reached the Vizille station on the Gap line. Here was the first surprise—the new steam tramway (carriages better than in the Bernese Oberland), which carried us up swiftly and pleasantly to Bourg d'Oisans in 2¼ hrs. more, thus affording a far speedier and more agreeable means of transit than the cumbrous old diligences. At the Bourg d'Oisans station I was amazed to find no fewer than four hôtel omnibuses, with *portiers* crying the names of their inns. In old days one was content with one

inn, and that not a very good one. Now we went to the new Grand Hôtel de l'Oisans (sixty rooms), just opposite the station. Here we found a really first-class hotel (managed by the hosts of the *Beaurivage* at St. Raphaël): everything very good and clean; electric light and bells, waiters in uniform, salons, a terrace, &c. I felt at first as if I had been suddenly carried back to Switzerland, and could scarcely realise I was in the Oisans, save for hearing French spoken all round. Next day we went up the Vénéon valley to La Bérarde. The new *char* road from the Plan du Lac to St. Christophe was on the point of completion, but I learnt with regret that it had practically destroyed the delicious Fontaine Bénite, known to so many travellers of old. At St. Christophe we found that a telegraph bureau had been opened a few days before, and it was impossible to resist the temptation of sending the first message despatched thence to England. Higher up the valley things were unchanged. At La Bérarde the Chalet Hôtel was as pleasant a refuge as of old. The fine new chapel (built by the Carthusians) had been finished since my last visit, and towers over the village. As in duty bound I paid a visit to Rodier's inn. M. Rodier himself had much aged, but his wife was just the same, and I once more saw with joy that empty 'Albert biscuit' tin, which is now the sole relic there of the visit of the 'dix' in the prehistoric days of 1873. Next day (with Joseph Turc as guide) we crossed the Col du Clot des Cavales to Alpe. There is now a well-traced path from La Bérarde up to the base of the last couloir, while that aerial bridge on the Alpe side has been rendered far more solid. At Alpe we fared very well in the new 'Refuge Paquebot' (so called because the beds are arranged berthwise, as in a ship). It has a good number of comfortable beds, and the commissariat department is well looked after by the obliging hosts, M. and Madame Castillan. In fact, we were so well off at Alpe that we stopped there for lunch next day, going on in the afternoon in under 2 hrs. to the Lautaret by the 'Sentier des Crevasses,' a narrow path winding round the ravine-torn N.W. flank of the Combeynot group. New surprises awaited me at the Lautaret. M. Bonnabel, the 'gardien,' is most active and enterprising, and has succeeded in attracting many to his house; we found a French artist (one of the staff of the 'Charivari') who had been there two months, and heard of an English family which had only just left after a month's sojourn. The Hospice has been entirely refitted, and has now twenty-one rooms (with electric bells), as well as a *salon*, and a fair-sized *salle à manger*, to which an *annexe* is now being added. We were never more than twenty at the *table d'hôte*, but in the season they had had eighty! Opposite the Hospice M. Bonnabel has just built a wooden *dépendance* (twenty rooms; electric bells, &c.) in the Swiss chalet style, a very agreeable and delightful place. In another point also, as to which English travellers attach great importance, all the new inns are quite irreproachable, modern sanitary arrangements having been adopted. It was with amusement that I looked at the breaks which now run in 6 hrs. from the Lautaret over the Col du Galibier to St. Michel de Maurienne in correspondence with the P.L.M. trains. How I wished they had

existed earlier, as they would have saved me many a weary tramp over that pass! I was told (but can scarcely credit it) that the carriage coming from St. Michel halts for dinner at Giraud's inn at Valloire—a fact of which I hope to satisfy myself in 1896, for to any one who knew Giraud's formerly this transformation into a 'Postmittag' place is amazing.

We spent a pleasant day in lounging up the *Roche du Grand Galibier*, whence we enjoyed an absolutely cloudless panorama, extending from the Maritimes and Viso to the Matterhorn, Mont Blanc, and the Tarentaise, with the great Dauphiné peaks straight in front. Next day we drove down early, to be present at a very striking review of 10,000 to 12,000 men, who had just finished the mountain manoeuvres. It took place in the plain between Monestier and Le Casset, and was one of the most striking sights I have ever witnessed, there being infantry, hussars, 'compagnies Alpines,' mountain batteries, telegraph corps, &c., all executing evolutions under the bluest of skies, while the splendid Pic Gardiner rose majestically above the human beings crawling about at its foot. Back to the Lautaret for lunch, and then in one of the new breaks running between Briançon and Bourg d'Oisans to the latter place. It is worth while noting that the Ecrins is seen for a few seconds from one of the zigzags between the Hospice and Villard d'Arène, as well as from near Monestier. At La Grave we made a short halt to greet our old friends the Juges. There was not time to examine the improvements in the hôtel, but I was told that there is now a dining-room capable of accommodating two hundred persons, while the electric light is to be introduced in time for the season of 1896. We heard, too, of a French gentleman who in 1894 had made the ascent of the *S. Aiguille d'Arves* ALONE. But it is the Meije which has most changed in the eyes of tourists. Last summer it was *traversed* almost daily, there having been one day no fewer than thirteen persons on the ridge between the Grand Pic and the Pic Central. When the Zsigmondys first forced that ridge in 1885 it was thought to be one of the most wonderful Alpine feats ever performed. Now (so I was assured) several of the crack Dauphiné guides *prefer* the descent by this ridge to that by the Etançons wall, especially when they have a tired or inexperienced traveller with them! How are the mighty fallen! I learnt with pleasure that the proposed railway up the Meije has been given up in favour of one up the Râteau. I did not visit the new mountain inn near the site of the old Lauze Club hut, but I was told it was like Alpe, and in that case it ought to be very comfortable. That night we lay again at Bourg d'Oisans: we had quitted it only five days before, but they had passed as if in a dream. The landlady made courteous enquiries after the success of our journey, and on my expressing the great pleasure it had afforded me she replied that she hoped I would be encouraged to come again to the district. I explained that I had known it for twenty-five years, on which she exclaimed, 'Alors, vous êtes un des anciens!' and, indeed, Rip Van Winkle himself could scarcely have *felt* older than I did on seeing all these wonderful changes—till I tried to reassure myself by reflecting that they had all

taken place within the last three or four years, and that my seniority was thus happily relative rather than absolute.

A very pleasant trip was rounded off by a traverse of the *Croix de Belledonne* (marvellous view) from Allemont to the new inn at La Pra, which is said to have cost as much as that at La Bérarde, but is far less comfortable. We descended to Uriage, and regained Grenoble by another new steam tramway. I did not make use of yet a third new steam tramway (that to St. Laurent du Pont, on the way to the Grande Chartreuse), but I found myself more comfortable than ever at the H. Monnet at Grenoble, which has been much improved, and has now the electric light throughout.

NEW ZEALAND LETTER.

IN response to a request from the Editor of the 'Alpine Journal,' I have been desired by the Committee of the New Zealand Alpine Club to forward annually a *résumé* of the new work done in the Southern Alps, and I now contribute the same for the past season, 1894-95.

In the chief mountaineering centre—the Mount Cook District—much new work has been accomplished, mostly by Mr. E. A. FitzGerald, with Mattias Zurbriggen as guide. As Mr. FitzGerald has, I understand, already communicated the result of his doings, I will not dwell upon his achievements beyond recording the fact that he has climbed Mounts Sealy, Tasman, Haidinger, the Silberhorn of Tasman, and Sefton, and made a pass over from the Hermitage to the west coast *viâ* a col between the Footstool and Mount Stokes, on the main range, passing down the valley of the Copland River. He returned from the west by way of the Fox, Fritz, and Franz Josef Glaciers, over Graham's Saddle (situate between Glacier Peak and Mount de la Bêche), down the Kronprinz Rudolf Glacier, and so on to the Tasman.

In addition to these excursions Zurbriggen made the ascent of Mount Cook, or Aorangi, from the Tasman side, by a new route from the Great Plateau up the north-eastern arête.

The new work done by members of the New Zealand Alpine Club consists of five attempts on Aorangi by the now well known Linda Glacier route, in which Messrs. M. J. Dixon, Malcolm and Kenneth Ross, Fyfe, Graham, and Dr. Cox participated. Their story is a record of struggles with bad weather and soft snow; but on one occasion they reached a point above the highest rocks on the eastern side, which is estimated to be about 200 feet from the summit. The honour of the first complete ascent of the mountain was, however, destined for Messrs. T. C. Fyfe, G. Graham, and J. Clark, who (after a previous attempt on the part of the former two, in which they crossed the lowest or southernmost peak (11,844 ft.), and the middle peak (12,178 ft.), but were stopped by bad cornices) on Christmas Day succeeded in scaling the mountain from the Hooker Glacier. This

expedition entailed a great deal of first-class work, both in making their way up the Hooker Glacier, which is very much crevassed, and quite impassable later in the season, and in the rock work met with on the higher parts of the mountain. Full accounts of these expeditions will be found in the 'New Zealand Alpine Journal' for May, 1895.*

Mr. A. P. Harper has this season continued his survey and exploration work on the western side of the main Range. In September, 1894, he succeeded in forcing the great ice-fall, and in reaching the head of the Franz Josef Glacier, and fixing several measurement cairns for future use. He reports a marked retreat. From October 1894 to February 1895 he was on the Karangaroa River, following it to the head, and crossing into the Landsborough Valley, went down the river some 35 miles. On his return up this valley he explored and mapped the Twain River (a branch of the Karangaroa), discovering a fine glacier, hitherto unsuspected, to which he has given the name of the 'Horace Walker' Glacier. In March he crossed the Divide to the Hermitage with Mr. FitzGerald by a pass seen during his former visit to the Fox Glacier, and, returning to the west coast again by a col to the north of that crossed by Mr. FitzGerald, mapped the Douglas River. In April he ascended Ryan's Peak, obtaining a good panoramic photograph of the Main Range and the head of Cook River. Nearly the whole of his work was on new ground, and completes the mapping of the central portion of the Southern Alps.

In the southern part of the island Messrs. Malcolm and Kenneth Ross, Fyfe and Hodgkins, did some climbing in the vicinity of Milford Sound, attempting Mount Balloon—a fine rock peak on the route from Lake Te Anau to Milford—but being beaten by bad weather. In the ascent of Mount Tutoko (9,000 ft.), however, they were successful, and Mr. Ross speaks of the locality in glowing terms, both as regards scenery and climbing. Indeed, he asserts that the climbing on Tutoko is equal, if not superior, to that on the Linda Glacier route up Aorangi. It is a matter of much regret that, with the exception of Mr. Ollivier, no members of the New Zealand Alpine Club were enabled to join Mr. FitzGerald and Zurbriggen on some of their expeditions, as the opportunity of seeing a first class guide at work does not often occur in this country. We can but hope for another visit from the same travellers, and wish for better luck next time.

G. E. MANNERING.

Christ Church, New Zealand,
June 15, 1895.

ALPINE ACCIDENTS IN 1895.

THE mountaineering season of 1895 will long be remembered for its glorious stretch of perfect climbing weather, and for the great number and peculiarly distressing character of the calamities which have occurred above the snow-line. We give records below of fourteen

* Whitcombe and Tombs (Limited), Christchurch, New Zealand.

accidents, involving a loss of nineteen lives. In eleven instances there was only one victim, in one instance two, and in two instances three. In examining the causes we find that in ten out of the fourteen the cause was a slip. Five of the ten men were climbing alone, and three were unroped; two were roped to only one guide, in each case the guide being pulled down, though not killed. One accident resulted from a fall of rocks from above, and in three instances the cause of the mishap remains unknown. Besides the fourteen cases we describe, several lives have been lost on the borderland between mountain and valley—three, at least, in seeking edelweiss; while the annual festival of the Swiss Alpine Club was marred by the death on the Mythen of a member—Herr O. Gelpke—who stumbled on a pathway whilst reading a letter, and was killed.

Over and above fatalities there have been this summer many fortunate escapes which might easily have ended otherwise. Accounts of some of these have found their way into periodicals, English or foreign, but, if rumour speaks truly, a still larger number have occurred of which no printed record exists. From what we know of these, as well as from what we learn from many of the records herewith subjoined, the old lesson is once more very forcibly impressed upon us, viz. that the neglect of well-established precautions adds enormously to the risk of mountaineering.

TABLE OF ACCIDENTS, 1895.

Date	Name	Place	Lives Lost	Cause
June 13	Stocker ...	Admont-Riffel	1	Slip, alone.
„ 21	Simon ...	Zugspitze ...	1	Two on rope, one slipped and pulled other down.
July 16	{ Benecke } { Cohen }	Lötschthal ...	2	Cause unknown.
„ 25	Bergmann ...	Hoher Zahn	1	Slip, alone.
„ 30	Schmidt ...	Terglou ...	1	Slip, alone.
August 6	Calcino ...	Monte Viso...	1	Slip, unroped.
„ 13	Ritzau ...	Jungfrau ...	1	Slip, unroped. Unsuitable party.
„ 16	Eyre ...	Sparrenhorn	1	Slip, alone.
„ 18	Schnürdreher	Mont Blanc	3	Cause unknown. (Found in crevasse.)
„ 19	Eberz ...	Parseyerspitze	1	Slip, alone.
„ 24	Rey ...	Aig. du Géant	1	Slip, unroped.
„ ? 24	Mummery ...	Himalayas ...	3	Cause unknown.
„ 26	Modl ...	Eisjöchl ...	1	Two on rope, one slipped and pulled other down.
„ 30	Sampson ...	Trift Pass ...	1	Struck by falling rocks.

MR. A. F. MUMMERY.

MR. A. F. MUMMERY has lost his life whilst climbing with two Gurkhas in the Himalayas. He left England in June, accompanied by Mr. Geoffrey Hastings and Dr. J. Norman Collie, for the purpose of mountaineering in the Nanga Parbat group of the Kashmir Himalayas. The whole story of the expedition will doubtless be told when these gentlemen return to England. In the meantime, the facts, so far as they are at present known, are as follows. The party broke up their camp in the Diarmirai Valley on August 23, intending to establish another in an adjacent valley called Buldarrakkiote. Messrs. Hastings and Collie were to go round with the luggage and coolies, while Mr. Mummery, with two Gurkhas, both of whom are described as good climbers, was to cross by a snow-pass, or, failing in this, to follow round by the low route. The Buldarrakkiote camp was established, but the party of climbers did not arrive. After waiting for a reasonable time a search was commenced, and a camp, with untouched provisions, was found. No efforts were spared, but nothing more was discovered to throw light upon the nature or exact site of the catastrophe. Recent heavy snows have rendered further search impossible, and it is only too likely that we shall never know the precise nature of the mishap which has deprived the Alpine Club of an exceptionally brilliant mountaineer.

EMILE REY.

EMILE REY, of Courmayeur, one of the finest mountaineers the world has ever seen, lost his life while descending from the Aiguille to the Col du Géant on the afternoon of Saturday, August 24.* The circumstances were as follows. Mr. A. C. Roberts, an English climber, engaged Rey for a few days, and on August 23 the two climbed together the lower peak of the Aig. du Dru, sleeping that evening at the Couvercle. They started next morning at 4.40, and reached the summit of the Aig. du Géant at 2 P.M. Commencing the descent at 3.20 the base of the final peak was reached at 4.5. Shortly after this, the weather looking bad, Rey said that they would move more quickly if unroped. They accordingly coiled up the rope and proceeded on the descent, Rey leading, and carrying a light sack and the rope. About 4.30 they reached the top of the rocks which descend to the lower snow-fields. The climbing here is easy, but involves the descent of one or two chimneys, at the top of one of which Mr. Roberts waited whilst Rey went down, face outwards. Close to the foot of this chimney Rey jumped, or dropped, on to a small shelf of wet rock, sloping slightly outwards, and covered with small loose pebbles. He slipped, and for a short distance slid over snow-covered ice. He tried to dig his axe in, but it slipped from his grasp, and he was precipitated in three

* The following account is based chiefly upon a description furnished to the Syndic of Courmayeur by Mr. Roberts, the only witness of the catastrophe.

bounds on to the snow some 600 feet below and to the N. of the route to the hut. Mr. Roberts could see the body lying motionless on the snow. He attempted to reach it both by the rocks and by the snow which skirts them, but succeeded only in getting within about 200 feet. He shouted repeatedly, but got no answer. Snow fell heavily, and a thick fog made it impossible to persevere in the attempt, so, at 6 P.M., he turned away, and, by the aid of map and compass, reached the Col du Géant hut at 7 o'clock. Here he found two Swiss climbers without guides, and shortly afterwards a large party of Dutch gentlemen and ladies arrived from the French side with six guides and porters. Snow fell throughout the night, and all in the hut agreed that nothing could be done before the morning. News of the disaster was carried by the Dutch party to Courmayeur, whence a caravan of guides and porters started at once to recover the body, which they carried to Courmayeur on the following day, August 26. It is a satisfaction to know that death must have been instantaneous, as fatal injuries to both skull and spine were found. The funeral took place on the 27th, when a great procession, consisting of the Syndic and other local authorities, mourners, guides, villagers, and tourists, followed the flower-covered coffin from the hamlet of La Saxe to the parish church, and thence to its resting-place in the cemetery at Courmayeur.

THE LÖTSCHTHAL ACCIDENT.

ON July 16 Messrs. E. F. M. Benecke and H. A. Cohen lost their lives whilst mountaineering in the neighbourhood of the Lötschthal. The place and cause of their death remain unknown, but it has been conjectured that they may have fallen into a crevasse, or been overwhelmed by an avalanche. With reference to this accident Mr. Coolidge sends the following letter :

‘Just before 3 A.M. on July 16 last Messrs. E. F. M. Benecke and H. A. Cohen started from the inn at Ried, in the Lötschthal, to make some mountaineering excursion. They were seen by a peasant at Blatten (a little higher up the valley), who reports that they were walking briskly on, but in what direction could not be ascertained. Since that moment they have not been heard of, and though the valley has been most carefully searched, no traces whatever of them have been found. It is therefore impossible to say where or how they perished. It is certain, however, that they did not intend to make any high or difficult ascent that day, as they expected to be back by 4 P.M., and had left their “Steigeisen” in their rooms. Both gentlemen had climbed for several years in the Lötsch Valley. Mr. Benecke in particular was engaged in putting the finishing touches to the Lötschthal section of the Bernese Oberland Climbers’ Guide, for which he had worked most zealously. It is a small consolation that his notes have been found, and also his diary, from which the notices (to be found on another page) of several new expeditions made by him in 1895 are extracted by the courtesy of his relatives. Neither gentleman was a member of the Alpine Club, but Mr. Benecke belonged to the Swiss

Plateau, where they all fell into a large crevasse, two of them being killed on the spot, whilst one, the younger guide, probably survived his companions for some time. The crevasse into which they fell is some hundred yards below the ordinary track, and how they came to fall into it is not easy to understand. An ice-axe, belonging to one of the party, was found lying on the snow close to the ordinary route by Mr. Eccles and his guides, who were ascending the mountain that morning. This fact would seem to indicate that the party must have lost control of themselves at this point, and it has been suggested that they were glissading, and failed to stop themselves. The slope is, however, so extremely gentle that it would be hardly possible to glissade, even on snow which was so hard as to leave no traces at all. Mr. Eccles paid but little attention to the axe, thinking it must have been dropped by one of the many persons then on the mountain, and it was not till some days later that a telegram from Courmayeur, enquiring as to the whereabouts of the guides, gave rise to apprehension. The bodies were recovered on August 26. The accident is perhaps the most incomprehensible that has ever been recorded in these pages.

ACCIDENT ON MONTE VISO.

ON August 6 Signor Calcino, an Italian engineer, lost his life on Monte Viso. He was one of a large party including two guides and a porter. The party left Crissolo at 1 A.M., reached the Quintino Sella hut at 7, and, resuming the march again at 7.45, arrived about 10 A.M. at a place where it was necessary to traverse a snow couloir, about 500 ft. below the summit. Here they divided into two ropes. The guide Claudio Perotti led the first contingent across and cut steps. Signor Calcino remained with the second division, but refused to be roped, and expressed a desire to turn back alone. Perotti unroped and, coming back, offered to lead him across by the hand. In the passage Signor Calcino slipped, and pulled Perotti out of his steps. Striking his axe into the snow, the guide arrested his descent, and remained clinging to his axe with one hand and to Signor Calcino's wrist with the other. The remainder of the party watched Perotti making the most strenuous efforts to uphold Signor Calcino, who hung like a dead weight. At last the guide's strength failed, and he had to let go. The party descended, and found the shapeless corpse of their companion on the snow, some 1,500 ft. below. It is probable that Signor Calcino was not a proper person to undertake the ascent of even so easy a peak as Monte Viso; but, granting that he was, there would have been no real danger had he been roped.

ACCIDENT ON THE JUNGFRAU.

ON Sunday, August 11, three young German workmen made their way from Berne to Lauterbrunnen, and thence to the hut in the Roththal, intending to ascend the Jungfrau thence next day. The

Herr Gustav Herrman Bergmann, of Schönberg, near Berlin, was killed on July 25 on the Gschnitzthal mountains (Stubai Group, Tyrol). He arrived at Pfersch on the 24th, and engaged two guides to take provisions to the Tribulaun hut. It is probable that he intended to ascend the Hoher Zahn or the Weisswandspitze, or both, and to descend subsequently to Gschnitz, for a party who were passing this way on the 26th noticed quite fresh tracks on the snow between these peaks. It was not, however, till August 7 that suspicion was aroused, and search made. The body was found on the scree at the foot of the Hoher Zahn, having evidently fallen from some height.

On July 30 Professor Alois Schmidt, of Komotau, in Bohemia, made alone the ascent of the Triglav, or Terglou, in the Julic Alps. He descended safely to the Maria-Theresa-Schutzhaus, but descending thence he evidently missed the way and slipped, as his body was found the same evening on a snow-drift, with a fatal wound in the head.

On August 16 Mr. Benjamin Eyre, barrister, of London, whilst scrambling alone on the Sparrenhorn, above the Bel Alp, slipped, and was instantly killed.

On August 17 Baron Paul von Eberz climbed from Landeck to the Augsburg hut, where he arrived tired and unwell at 9 P.M. From illness he was unable to proceed next day, but started alone on the 19th to ascend the Parseyerspitze. Whether he reached the top is not known; but, as he did not return to his luggage in the hut, search was made, and his body was found next morning. He appears to have slipped, and fallen a considerable distance, but that he was not instantly killed is certain, as blood tracks show that he made his way for some distance over the snow after the fall. The skull was fractured in the frontal region. The deceased was not a climber of experience.

Herr Paul Modl, student, of Berlin, was killed by a fall in the Pfossenthal (Oetzthal district) on August 20. He started with his guide, Zachäus Gstrein, of Sölden, from the Ramolhaus, and crossed the Eisjöchl. Through some carelessness, it is said, Modl slipped, and pulled the guide down with him, the former being killed on the spot, and the latter severely injured. The survivor managed to attract the attention of a peasant, who came to his assistance.

IN MEMORIAM.

A. F. MUMMERY.

IN losing Mr. Mummery the Alpine Club has lost one of its ablest, most accomplished, and most famous members. He was a climber for more than a quarter of a century, and his work was always of a character to strike the imagination as well as to excite emulation. There is no occasion in this place to enumerate his Alpine and Caucasian feats, for they are well known to all our readers and have been recorded in the admirable and monumental volume reviewed in our last number. Mr. Mummery was a gymnast of almost unique skill

not alone. He was an example and was willing to take the responsibility. It will not be denied that the quality thus described, which may be called recklessness, is a quality essentially English. It is the quality which has made our race the pioneers of the world, which in naval warfare won for us the command of the sea, which by exploration and colonisation has given the waste lands of the earth to Anglo-Saxon enterprise, and the loss of which, if we ever do lose it, will bring our leadership to an end. Whilst Englishmen possess this quality they will manifest it in their sports. Public opinion may censure, but individuals will imitate, and amongst those who follow will not be the weaklings of society. Face to face with the giant Nanga Parbat Mr. Mummery wagered and lost. If the wager were blameworthy the result should not influence the apportionment of blame. Had he won, would the Alpine Club have censured? Assuredly not. The Himalayas have their victim—one worthy of their pre-eminence among the high places of the earth—but he too has his monument. So long as English rule abides in India, so long will those who from Gulmarg, in fair Kashmir, behold in the far north the glittering dome and spires of Nanga Parbat relate, as they wonder at its beauty, 'There Mummery was killed—the great climber!'

MADAME SEILER.

THE death of Madame Seiler snaps one of the pleasantest links that united the climbers of the present day with the period of Alpine conquest. If the enterprise and foresight of Monsieur Seiler made Zermatt what it became, the womanly kindness of his wife formed no mean attraction. Many old members of the Alpine Club have had occasion in time of sickness or accident to experience the warmth of Madame Seiler's sympathy and the utterly uncommercial nature of her friendship. To see her again was one of the expected pleasures that made Zermatt so attractive. The loss of her greeting will be a deprivation that many will experience in summer holidays to come.

CORRESPONDENCE.

EMILE REY.

To the Editor of the ALPINE JOURNAL.

THE death of Emile Rey, the great guide of Courmayeur, is generally felt as an irreparable loss; and the cause from which he perished is surrounded by a veil of mystery. Rey died in the fiftieth year of his age, on the descent from the Aig. du Géant, in the afternoon of August 24, 1895, by a fall that began at a level of about 3,700 m. and ended 600 ft. to 700 ft. below. The expedition consisted only of Mr. Carson Roberts and his guide. The report says that they were unroped, and that Rey, who was leading, lost his foothold and came to death.

very well. It is a duty I am fulfilling towards the dead in giving his portrait as it appears to me.

In the history of mountaineering Rey's name will hold a lofty place; no man was more faithful to his duty nor did it better than he. What he was to me I expressed by the following inscription, attached to a wreath on his grave:

'A la mémoire d'Emile Rey, mon vaillant et incomparable guide, à jamais regretté, en signe d'amour et de douleur.'

PAUL GÜSSFELDT.

ICE FIORD, SPITZBERGEN.

To the Editor of the ALPINE JOURNAL.

DEAR SIR,—With reference to Mr. Nathorst's criticism of the sketch map accompanying my paper on 'Ice Fiord' in the 'Alpine Journal' for February, I may perhaps be allowed to disclaim for it any pretension to accuracy beyond what could be attained by the aid of memory, a few photographs, and the Admiralty chart. I had not the advantage of having seen Mr. Nathorst's map, and was, therefore, unaware of the shelters he names—Tempel Bay and the Harbour of Bjona—but I fancy mariners will need no caution against relying too much upon the accuracy of the production in question.

As illustrating the extreme mildness of the summer climate of W. Spitzbergen for its latitude, I may mention that 17° further S. in August this year (in Norway), at an altitude of under 7,000 ft., I observed a temperature of 4° F. below freezing point at midday, or 14° F. lower than on the summit of Lusitania Mountain, Spitzbergen, in the same month last year.

Yours faithfully,

VICTOR H. GATTY.

NEW EXPEDITIONS IN 1895.

[Contributors of 'New Expeditions' are requested to observe the following rules:—(1) To forward their accounts in the form in which they are to appear. (2) To prefix the name of the peak or pass from the best map, and the altitude both in mètres and feet in a parenthesis after the name. (3) To give the date of the ascent, and the names of the party. (4) To give exact references to any previously published descriptions of allied routes to which they may have occasion to refer. (5) To write the description with the best existing map before them, and to quote the figures of any measured point their route may touch. (6) To use always the points of the compass instead of the misleading words 'right' and 'left.' (7) To record their 'times' exclusive of halts. (8) To make their descriptions as brief as possible consistently with the above considerations. (9) To write on one side of the paper only, leaving a large margin, and to begin a new sheet for each expedition.]

Dauphiné District.

PIC GARDINER (c. 3,400 m. = 11,155 ft.). *July 15.*—MM. A. Reynier and C. Verne, with Maximin Gaspard and Joseph Turc, made the first ascent of this point. Starting from the Refuge Cézanne, they

mounted to the Col de Séguret Foran, keeping up the rocks on the right bank of the Rif ravine till they reached the final snow couloir. From the pass they bore S.E. over a narrow level plain or band of glacier between the steep incline below the Pics du Rif and des Arcas on one side, and the rapid slope descending on either side of the Dôme du Monestier, till, opposite La Feste, they struck to the E., and so gained the Brèche Gardiner (a short hour from the col). A slope of snow led to the S.W. arête of the Pic Gardiner (10 min.), which was followed to the summit of the peak (10 min.). It was ascertained that the *topography* of the Séguret Foran group as given in the Dauphiné volume of the 'Climbers' Guides,' pp. 59-61, and on the *N.E.* sheet of M. Duhamel's map is perfectly accurate, with the following exceptions: *La Feste* is a mere buttress, and not an independent summit, while the *Pic de Séguret* is crowned by a cairn of unknown origin. M. Reynier is of opinion that the *heights* given in the 'Guide' are not all correct, and will publish his conclusions later. It may be stated, however, at once that the Dôme du Monestier is certainly *higher* than the Col de Séguret Foran.

COUP DE SABRE (3,460 m. = 11,352 ft.). *July 17.*—The same party (with the addition of Casimir Gaspard) effected the first passage of this pass, the deep cut between the Pic Sans Nom and the Petit Pic Sans Nom. Starting from the Refuge Cézanne, they followed the Col de la Temple route for 3 hrs., and then in 40 min. reached the foot of the very steep couloir leading up to the pass. They ascended in the middle of this couloir for the first third of its height, the slope not being *very* great; the second third was climbed by the not altogether easy rocks of its right bank, and the last third by the couloir itself, which is here *excessively* steep until near the pass. The height of the couloir is estimated at 540 m. (1,772 ft.), and its ascent took 2 hrs. 25 min. A steep and narrow gully led in $\frac{1}{4}$ hr. to the Coup de Sabre glacier; this was easily descended, and then rocks traversed in a S.W. direction to the lower bit of the Sélé glacier, gained in 1 hr. 10 min. La Bérarde was gained the same afternoon by way of the Col du Sélé.

BRÈCHE JOSEPH TURC (3,870 m. = 12,697 ft.). *July 20.*—The last-named party made the first traverse of this pass, which lies between the Central and E. peaks of the Meije. Starting from the Châtelleret Club hut, they ascended by the moraine and glacier of Etançons to the foot of the wall leading up to the pass. Then skirting in an easterly direction along its base, and mounting in the same direction by a great slope of névé, they gained (3 hrs. from the Club hut) the E. end of the conspicuous snow band which traverses the S. wall of the Meije obliquely from E. to W. The party now bore to the W. along this snow band (the route taken by the Zsigmondy party the day of the accident) till immediately below the Brèche Joseph Turc ($1\frac{1}{4}$ hr.). Easy rocks then led up in a northerly direction, but these soon become steeper, and form a very wide couloir (or sort of wall) stretching up between the spurs running down from the Central and E. peaks of the Meije, and having a gully on either side. For about half its height the central bit of this couloir or wall was ascended, and then

the rocks on the right bank of a snowy gully (distinct from those mentioned above) which mounts N.W. towards the lowest point in the ridge between the two above-named summits. When these rocks, not far below the pass, became nearly perpendicular, the couloir itself was climbed, though it too was very steep and narrow. It was necessary to pull oneself up by the edges of the rocks on either side, the place being very like (though rather steeper than) the couloir on the S. Aiguille d'Arves. An hour and three-quarters was spent in climbing from the snow band to the pass, which is a narrow gap through which one man only can pass at a time, the crest itself being as sharp as the edge of a knife; the cairn, therefore, was built 10 m. to the W. of the spot at which the ridge was traversed. A steep but not difficult snow slope led down in a north-westerly direction to the ordinary route of the Central peak of the Meije ($\frac{1}{4}$ hr.), which was followed to La Grave.

LES BANS FROM THE VAL GAUDEMAR. *August 19.*—M. Auguste Reynier, with Maximin Gaspard and Joseph Turc, made the first traverse of Les Bans, and the first ascent of its N. summit. Starting from an old shepherd's hut (under a great boulder on the left bank of the torrent, and not far from the old mines) in the glen just W. of the peak, through which flows the stream from the glaciers on its W. flank, they gained the moraine of the lower glacier in $\frac{1}{4}$ hr., and the glacier itself in 1 hr. 10 min. more. Its nearly level surface was crossed in a N.E. direction for $\frac{1}{4}$ hr., and then a snow slope climbed in the same direction to the foot of the rocks (20 min.). These were ascended in the same direction (leaving on the right a great snow couloir, at the head of which were threatening séracs) for $1\frac{3}{4}$ hr. or 2 hrs. (some difficulty being encountered); then turning to the S., easy gullies and ledges and the upper bit of the above-mentioned snow couloir led to the upper glacier (1 hr.) at the point where a tongue of rock stretches up into it. Above, on the N.E., rose a great reddish and perpendicular rock wall—really Les Bans itself—but the party not being quite certain of this bore N.N.E. towards a well-defined summit separated from the great wall by a deep gap. The glacier was crossed in 20 min. to the foot of this summit, whence a narrow gully and treacherous rocks led them to the top of this point ($1\frac{1}{4}$ hr.). It was then seen that this was not (as had been believed) the true summit of Les Bans. A cairn was built on it. Hence the party descended towards the deep gap which separates this summit from Les Bans, keeping on the Val Gaudemar slope to avoid two gendarmes, passing below the gap, and then traversing—mounting but slightly—the great reddish wall (very steep and rotten rocks) till immediately below the peak at the north end of that wall, which was gained finally by a direct climb ($1\frac{1}{4}$ hr. from the first summit). A cairn was built here, as there were no signs of a previous ascent; but a little way below, to the S., a nail (? lost by some hunter) was found. This N. Summit of Les Bans is separated from the S. Summit by a jagged rock ridge, in which six teeth (the fourth is the highest, and might be called the Central Summit) may be distinguished. These were climbed in succession, the slopes on either side being impracticable, 1 hr. 35 min.

MM. C. V. Louis and E. Piaget, with L. Faure and J. Mathon, made this new route up this fine peak. Starting from the Refuge de l'Alpe, the Col du Pavé route was followed till, on the W., the steep buttresses of the peak were seen. Stone slopes led up to the foot of the S.W. rocky wall of the peak (3½ hrs.). This wall was attacked by a couloir running in a westerly direction. Later the party bore a little to the E., and crossed the great couloir which furrows that wall. Then very steep and rotten rocks were climbed by minor gullies and traverses, keeping always on the left bank of the great couloir, and finally a small overhanging chimney led to the very narrow final ridge, at about on a level with the N.W. summit (4½ hrs. from the foot of the wall).

COL DE LA PYRAMIDE (c. 3,200 m.=10,499 ft.). August 20.—M. E. Piaget, with J. Mathon and P. Ferrier, made the first traverse of this pass, which lies just W. of the Montagne des Agneaux. Starting from the Refuge de l'Alpe, the Col du Glacier Blanc route was followed to the Arsine Glacier, which was crossed to the base of the great couloirs descending from the ridge between the Agneaux and the Pic Signalé, 3,355 m. (2½ hrs.). A rocky spur (like the Enfethores rocks on the Brèche de la Meije) divides two very steep snow (or ice) couloirs. The more westerly of these (that nearest to the Pic Signalé) leads to the pass, and was climbed by the snow patches and rotten rocks on its left bank (falling stones), 3 hrs. being taken from its base to the pass. On the pass there is a little frozen lake, overhung by a very sharp rocky needle, which gives its name to the pass. Thence easy snow and stone slopes led down to the Refuge Tuckett in 2 hrs.

Eastern Graians.

POINTE DE VALEILLE, CENTRAL AND EASTERN SUMMITS; AIGUILLE SENGIE, AND POINTS ON THE N.E. RIDGE OF THE PUNTA SENGIE. August 31.—Mr. F. W. Oliver, with the guides Albert and Benedict Supersaxo, left the hôtel at Cogne at 2.30 A.M. with the general intention of exploring the ridge of the Sengies—the ridge, that is, which forms the S.E. boundary of the Valeille valley. They reached the S. Col des Sengies, *via* the Valeille Glacier, at 8.30, and then followed the crest of the ridge which lies between the S. and N. Cols des Sengies. At 9 they gained the first summit, where they found Signor G. Bobba's record of the first ascent (September 14, 1893).* This point is named in the record 'Punta Centrale d. Valeille'—the 'Punta Occidentale' being the Pointe de Valeille of Messrs. Yeld and Coolidge.† After an hour's halt the party continued along the ridge, reaching a higher summit at 10.15. This also had been visited by Signor Bobba (same date), and named by him 'Punta Est de Valeille.' Though higher than the 'Punta Centrale,' it is distinctly less high than the true Pointe de Valeille (3,406 m.). Continuing in a N.E. direction, the rocks became impassable as the N. Col des Sengies was approached. A descent to the Ciardonei Glacier was, therefore, unavoidable. From

* See his narrative in the *Bollettino del C. A. I.*, 1894, pp. 226 *sqq.*, and panorama of the Valeille and Sengie glaciers, at pp. 232-3.

† *Climbers' Guide*, p. 51.

Ciardonei, is non-existent. The E. Summit lies further E., at the point where the main ridge divides into ridges running N.E. and S.E. respectively (the latter connecting with the Gran Cimone, 3,271 m., I. map), and is identical with the Grand' Uija of the I. map. From the true W. summit a ridge runs S., bearing at short intervals three small pointed peaks; but these are all of them considerably lower than the W. summit. The ridge joining the W. and E. summits of Monte Gialin is everywhere easy, and although the party did not proceed to the E. summit it could be readily reached in 40 min.* To the S. of this connecting ridge is a little oval glacier, not represented on the Italian map. Mr. Oliver then descended by a couloir on the S.E. side of the mountain direct to the Soera branch of the Ciardonei Glacier, whilst the guides returned to the Colle di Ciardonei, where the rucksacks had been left. The Soera glen was then reached by the usual route, and a good hunters' pass, the Colle di Valsoera, was followed to the Muanda di Teleccio huts (2.45 P.M.).

MONTE NERO BY THE E. FACE (3,381 m. = 11,093 ft.). *September 7.*—This is the isolated rock peak which stands immediately to the N.W. of the Piantonetto Club hut. It would seem to have remained neglected by climbers since Signor Baretto made the first ascent in 1886. Leaving the Club hut at 4.30 A.M., the same party reached the Bocchetta di Monte Nero at 6. From this point they at once traversed W. under the overhanging shoulder which forms the northern termination of the mountain. At the earliest opportunity they worked upwards by a sort of chimney, gradually rounding the shoulder and getting on to the W. face (6.30). At this stage the route is better and safer the more nearly the precipice is hugged. The W. face was now traversed in a southerly and upward direction, the party passing within a stone's throw of a well-marked notch in the N. ridge and continuing till well below the highest point (the rocks on this part of the mountain are remarkable for the large quantities of that rare and beautiful Alpine plant *Ethionema Thomasianum* which everywhere grow in the chinks). A broad, shallow gully now led to a magnificent chimney some 60 ft. in height (no doubt ascended by Signor Baretto's party), which is climbed only with difficulty by such as are of large stature. Above the chimney a short traverse N. over slabs leads to a rather difficult rib of rock which somewhat overhangs. By this rib, a traverse south, and an easy gully the S and highest summit was reached at 7.20. In the cairn was found Signor Baretto's card only. The central summit, which is separated from its southern neighbour by a deep-cut chasm, now claimed attention. As, however, the rocks leading into the gap are vertical and deficient in holds, it was impossible for the whole party to pass to the central point and then retrace their steps. The amateur member consequently elected to be lowered into the gap, whence he climbed to the central summit and built a stone-man. Leaving the S. summit at 8, the route lay over the E. face, first by very steep rocks covered with a friable black

* This seems to be the route taken by Signori Bobba and Vaccarone, June 30. 1894. See *Bollettino*, 1894, pp. 215-6.

tower which overhangs to the S. in a remarkable manner. Creeping right down under the bulge of this tower, and descending a few feet on the E. face, a long and exciting traverse enabled the party to turn this obstacle, and, gradually ascending, to regain the ridge at a notch some little distance above the overhanging tower, from which it is separated by two minor needles. The route now lay along the ridge which here ascends steeply to form a great three-headed tower or protuberance. The highest of these summits was reached at 11.45, and another stone-man built. From this point it was possible to survey what remained of the ridge, and to realise that the most formidable obstacle of the whole climb had yet to be negotiated. Without descending, two curious flattened aiguilles were turned by traversing on the E. face, and the party reached the notch beyond the second of these, from which point the ridge goes up in three steep pitches to the summit. The first pitch was climbed by a chimney on the E. face, but the second seemed to bar all progress. The faces on either hand here are smooth and vertical, and the ridge itself overhangs. The climb must be made right over the nose, the only other alternative being a circuitous traverse across the S.E. face of the mountain, by which the eastern ridge might be gained and the climb so completed. Two efforts to climb straight up proved unavailing; but at the third attempt, and with the assistance of those below him, Albert Supersaxo was able to work his way up to a handhold, and the successful termination of the climb was assured (12.40). Above this bad piece another cairn was built, and the summit reached at 1 P.M. by an easy scramble. The descent was made along the N. arête to the S. Col de l'Herbetet, and Valsavaranche regained by 7 P.M.

The route here described is strongly recommended. It is safe, and the rocks are far less rotten than is often the case in the Cogne district. The interest is sustained to the end, as, until the three-headed protuberance is reached, only a small portion of the route is visible ahead. The details of the climb may be followed in Signor V. Sella's excellent photograph of Mont Herbetet, taken from the Dzasset Glacier (No. 1,716 of his series). The ridge is also shown in the figure given in the 'Alpine Journal,' vol. xvii. p. 183, after a drawing by Mr. Compton. The time taken, 3½ hrs. from the Montandeyné Glacier, is, of course, inclusive of all halts.

PUNTA ROSSIN (2,977 m.=9,768 ft.). August 16.—The Rev. L. S. Calvert and Mr. O. K. Williamson, with Emanuel Burgener and Adolf Andenmatten, made what seems to be the first ascent of this peak, concerning which the 'Climbers' Guide' (p. 41) states that it has 'no information.'

Starting from Cogne at 3.15 A.M., they went up the Bardoney glen, and ascended the ridge between the peak and point 2,526 m. of the Italian map in a S.W. direction. A buttress descending to the E. from a point immediately N. of the peak was turned by the slopes on the E., and so the gap between the peak and point 2,526 m. attained. An easy rock scramble along this ridge led to the summit at 2.8 P.M., about 4 hrs. being spent in halts.

The return to Cogne was made by the same route.

vertical pitch, but the holds being good they were able to stick to the crest, and presently found themselves on the north-eastern extremity of the summit ice-cap, and in 15 min. more on the highest point of Mont Collon, at 9.20.

This route gives 2,800 ft. of interesting rock-scrambling, and is apparently safe from falling stones, provided that the couloir on the E. side of the ridge is avoided. The rocks are firmer than those of the E. face of the mountain. Average angle, 50 degrees. The arête took 3½ hrs. Descent by Vuibez Glacier and Rochers Noirs. Returned to Arolla at 2.5, the expedition thus occupying 11¼ hrs., or 9¼ hrs. excluding halts.

The 'N.E. ridge' descended by Mr. Gilson* seems to be further to the S. than the one described above, and is out of sight of the hôtel. Both parties are convinced that two different ridges were climbed.

RUINETTE BY THE W. FACE. *August 16.*—The same party, after gaining the top of the Ruinette by the long N.E. ridge from Mont Blanc de Seilon, descended directly to the Giétroz Glacier by a route described by Quinadoz as 'vierge,' and much shorter than the usual way by the Col du Mont Rouge.

Quitting the S.W. arête 300 yds. from the summit, they struck off at right angles—in a north-westerly direction—and went down a steep rib of broken rock, which projected only a few feet above the snow (or ice) on either side. The rib terminated 200 ft. or so above the bergschrund, and the intervening slope was ice at an inclination of 45 degrees. As it was covered, however, with an inch of adherent snow they got down without cutting steps, and found good snow below the schrund. The descent from the summit to the level glacier—some 2,000 ft.—took rather less than an hour.

In years marked by heavy snowfalls it is not unlikely that a considerable portion of the rock rib will be out of sight.

Valpelline District.

M. MORION (3,520 m. on I. map = 11,545 ft.). *July 18.*—Mr. Alfred G. Topham, with Jean Maître and Pierre Maurice, ascended from Bionaz in 3 hrs. to the avalanche snow at the foot of the biggest gully immediately N. of 2,887 m., I. map. The rocks of this gully are very smooth at the foot. Ascend S. side for ½ hr., cross gully, and ascend by narrow buttresses always N. of the main chute, and so gain the depression in the arête N. of the peak. Follow the arête in ¼ hr. to the top (4½ hrs. from avalanche snow). A bottle was found, containing the card of Mr. F. Baker-Gabb, who ascended the peak in August 1891 from the direction of the Colle Crête Sèche. Mr. Topham's party descended the main buttress towards the point 2,887 m. for ½ hr., and then went straight down the S. face towards Oyace. This face is very much swept by stones, and the final rocks can only be descended by risking the biggest stone chute (3½ hrs. from top). Two hours into Bionaz. The long ridge

* *Alpine Journal*, vol. xvi. p. 174.

descent was, of course, made by the well-known E. arête. In 1877* the Weisshorn was ascended by Mr. Davidson's party by way of the S.E. face and the S.W. arête. On the accompanying illustration the two routes are marked, the 1877 route by a black line, the 1895 route by a dotted line.

SCHALLIHORN (3,978 m. = 13,052 ft.) BY THE S. FACE. *September 21.*—Mrs. Main, with Joseph and Roman Imboden, made the new route. Starting from a bivouac by the Hohlicht Glacier, the party kept to the left round the lower buttress of the peak, and eventually gained its upper ridge. Several traverses and steep ribs (danger of falling stones) led them up to the firm, easy, and safe rocks of the main mass of the mountain, in the centre of the peak, about half-way from its base. These were succeeded by a very loose and steep arête, which gave place in 20 min. to a steep and firm granite ridge, affording good climbing. By this time the summit was gained, in 5 hrs. 40 min. from the bivouac. The descent was made to the Moming Pass.

TOUR OF THE LAQUINHORN. *August 27.*—The Rev. L. S. Calvert, with Emmanuel Burgener and Adolph Andenmatten, of Saas Grund, left the Weissmies hôtel, above the Trift Alp, at 3.15 A.M., and reached the Laquinjoch at 5.30. The whole of the Italian side was a sea of billowy clouds, and the sun, at that minute peeping over them, flooded their sérac-like forms with a gorgeous crimson. The Laquinhorn is seamed by a series of couloirs down the E. face, the first and second of which were crossed horizontally; the third and fourth by mounting steep but firm rock, bearing upwards near the arête, and across a longish patch of snow. The best route so far is easy to find. The next two couloirs were crossed with no difficulty, over ice and snow and rather rotten rock. At the seventh they went straight up the face, to avoid extremely steep ice, then up a long snow slope, involving much step-cutting. A wide and steep ice slope then cost considerable time and labour in crossing, and a little further on, when apparently within an hour of the Fletschjoch, they were brought to a halt by an extremely steep iced couloir, continually raked by showers of rock. This the guides considered impracticable, or at least unsafe, so they descended for about half an hour, then crossing a deeply furrowed couloir reached the rocks on the right of the Fletschhorn Glacier, by which they ascended to a point a little above the Fletschjoch, and came down by the ordinary Rossbodenhorn route, reaching the Weissmies hôtel again at 7.20 P.M. The whole tour, including halts of about $1\frac{1}{2}$ hr., thus took 16 hrs.

Lepontine Alps.

TURBENJOCH (c. 3,100 m. = 10,171 ft.). *July 15.*—The first passage of this col, which lies between the Strahlgräte and the Rappenhorn, was made by the Rev. G. Broke, Mrs. G. Broke, and Miss Broke, with Adolf Andenmatten and a porter. Reaching the Turben Alp in $2\frac{3}{4}$ hrs. from Binn, they went straight up the steep grass slopes to the

* *Alpine Journal*, vol. viii. pp. 340, 419-425.

late, and made many halts under the impression that the peak was quite easy, they had not time to build a cairn, and the sack having been left in the bad crack the party could only leave a brass safety pin fixed on the E. side of the western tooth pointing to where a matchbox was hidden with their names. Returning by the same route, except that it was found possible to avoid the bad crack, they got back in 2 hrs. to the spot where they roped, only to find that the *Wirth* had departed homewards, taking with him wine flask and axes. The lower edge of the great slope was reached again down the snow in 35 min., and Oberwald in the dark in 3 hrs. more. The times were naturally slow under the circumstances, and some extra delay in the descent was incurred at the Saasbach, where there was no bridge, so that the river having risen considerably the party had to rope and more or less wade across.

Bernese Oberland.

OBER TATLISHORN (2,966 m. = 9,731 ft.). *June 30.*—Mr. E. F. M. Benecke,* alone, made the first ascent of this peak. Starting from Kandersteg at 5 A.M. he followed the Gemmi path as far as Stock ($1\frac{1}{2}$ hr.), crossed the Schwarzbach stream at 7.5, halted 10 min., and in 40 min. more gained the top of a couloir (here $\frac{1}{2}$ hr.'s halt), by which the gap between the Unter and Ober Tatlshörner was gained at 9.25 A.M. After 10 min. halt the summit of the higher peak was reached at 11.30, the lower having been already climbed by Mr. Benecke and Mr. Cohen in 1894.† Mr. Benecke notes, 'The view from the top was very fine. From here the ascent of the Altels would present no serious difficulty.'

BREITLAIUJOCH, AND E. SUMMIT OF THE ELWERRÜCK. *July 14.*—Mr. Benecke and Mr. Cohen, without guides, made this fine new pass, which lies just W. of the Breitlaihorn. Leaving Ried at 3.5 A.M. they reached Kühmatt at 4, and halted here 10 min. Thence they bore straight up in a S.E. direction over very steep grass, rocks, and débris to the flat part of the Augstkummen Glacier, gained at 7.15 (55 min. halt on the way). Starting again at 7.55 they crossed the glacier on a level, and took to the rocks on its right-hand side (rushing up or across a short stone-swept couloir). These rocks were red brown at first and pretty steep, though broken and easy, and later were very steep granite. Mounting them, and crossing occasional snow gullies, the party attained the summit of a rock peak a few steps to the W. of the lowest depression of the Breitlaihoch at 12.30 ($\frac{3}{4}$ hr.'s halt *en route*). The rocks were covered with snow, but were not otherwise difficult; the snow (powdery) and ice very bad. Leaving the pass at 1.35 P.M. they mounted by easy snow, with rocks at the finish, to the E. and lower summit of the Elwerrück (probably new), attained at 1.55. After 5 min. halt they gained the foot of the

* For the following details, taken from diaries and letters, of the new climbs made by Mr. Benecke and Mr. Cohen in 1895 we are indebted to the courtesy of their families, which we here most gratefully acknowledge.—
EDITOR A. J.

† *Alpine Journal*, vol. xvii. p. 367.

presents towards the S.E. a continuous wall of steep cliffs of from 2,000 to 3,000 ft. in height, interrupted midway by a broad shelf of hanging glacier. Our object now was to descend as directly as possible by this wall to the Kanderfirn below. Leaving the col at 11.45 A.M., we descended a steep bank of soft snow; then traversing to the left (E.) under the cliffs of the Oeschinenhorn over sloping and bad rocks, mostly snow-covered, we sought, whilst gradually descending, for a convenient passage to the hanging glacier below. We were cut off from it by a line of low but steep cliffs, which we found some difficulty in passing at their lowest point (about 30 ft.). Unroping, we cut away a large mass of the snow which rested on the edge, and then Müller, ensconcing himself in the hollow, lowered us one by one over the steep rock. Mr. Hale, who went first, managed to clamber half-way down, and then, jumping well out from the rock, landed safely on the snow-covered glacier. Ogi and I followed his example, and Müller, being unable to secure the rope above, came down without its aid. It cost us two hours to reach this glacier, though it cannot be more than 400 or 500 ft. below the col. We crossed the glacier, bearing again to our left, and some time was lost in finding a practicable line of descent from it. Müller scrambled some way down on to a buttress of the cliffs, but was forced to return. We then tried in the other direction (W.), and passing to the right, well under the col, easily succeeded in getting off the glacier on to the rocks below. For 200 or 300 ft. these rocks are rather trying, being smooth and shelving, with but slight hold, and often littered with loose stones: lower down they become more broken and easier. We climbed steadily down the face of these rocks until within 100 ft. or so of the Tschingel Glacier, when we were again brought to a stand by a rampart of steep water-worn cliffs, which proved more troublesome than those above. After considerable delay we traversed some distance to the left, cut down a slope of rough ice, and got into a hollow through which poured a heavy stream of water from the glacier above. Here we resorted to our former tactics, Müller anchoring himself firmly and paying out the rope inch by inch as we clambered down the last and worst bit of rock, which was wet and bulging, with most inadequate hand and foot hold. Müller again had to come down without the safeguard of the rope, and we watched his descent anxiously until he came within reach of help from below. It was 5 o'clock before we stood on the Tschingel Glacier, the descent from the col having occupied $5\frac{1}{4}$ hrs. The last passage (about 30 ft.) was difficult, and exposed us to some risk of falling stones, but no other way could be found and time pressed. We struck the glacier not far above the ice-fall, crossed it to the left moraine, and returned by the usual route to Kandersteg. We reached the Hôtel Victoria at 10 P.M., having been out nearly 19 hrs., including about 3 hrs. halt.

There was some difference of opinion as to the best line of descent from the pass; it was afterwards generally agreed that a better and quicker route might have been found by bearing well to the right on leaving the col, and making for a large snow couloir which extends for a long way down the mountain. The Oeschinen-

towards the Schienhorn, deviating occasionally to the left face to avoid gendarmes, and finally ascended the snow and ice arête, reaching the top at 11.35. They remained till 12.25, then began the descent by the top of the rocks on the N.W. side of the S.W. arête, to avoid the snow ridge, struck the arête where it became rocky, continued on the arête till near the snow-capped point marked 3,670 m., struck down the rocks to the left and down the snow to the glacier, and thence down the glacier through the ice-fall, crossing to the left of the glacier, and were clear of the ice-fall at 4.25 P.M. They started again at 5.10, and reached the Bel Alp hôtel at 6.55.

NESTHORN BY THE S.E. ARÊTE. *September 4.*—On August 29 Messrs. J. and B. Hopkinson had been along the Unterbachhorn ridge towards the Nesthorn to near the gap marked 3,533 m. on the Siegfried map, and had found the rock fairly easy. They had no time to try the arête of the Nesthorn.

On September 4 Messrs. J. Hopkinson, C. Hopkinson, E. Hopkinson, C. Slingsby, and G. T. Lowe, with a porter who had climbed but little, left the Bel Alp hôtel at 4.25 A.M., and ascended the Nesthorn by the first couloir from the Beichfirn, reaching the top at 10.30. They remained till 12, then descended the S.E. arête. The course is not very easily described. The arête was followed nearly all the way, gendarmes being turned by slight deviations on to one face or the other. The first gendarme was passed on the N. face, the second on the S. face, and the two near the gap by the top of the snow on the N. face. The arête was then followed to the Unterbachhorn, and the Bel Alp hôtel reached at 9.25 P.M. The rock of the Nesthorn arête is good and sound. From various causes the time from the Nesthorn to the hôtel was much longer than necessary.

FUSSHORN, MIDDLE POINT. *September 6.*—Messrs. J. Hopkinson, E. Hopkinson, B. Hopkinson, and J. G. Hopkinson climbed this summit. The point ascended was the middle point of the ridge, similar in shape to the highest point. The ascent was made for the most part by a couloir running up from the Oberaletsch Glacier to the ridge a little north of the point aimed at; the descent by the steep S.E. arête to the first gap, thence by a second couloir and adjoining faces to the Oberaletsch Glacier. The steep rock descent from the gap was very interesting and quite worth the trouble of the journey. About 6 hrs. (including halts), leisurely walking, were taken from the Belalp hôtel to the summit.

ROTHORN FROM THE S.E. AND W. (3,701 m. = 12,143 ft.). *September 2.*—Messrs. W. C. Slingsby, C. Hopkinson, E. Hopkinson, and G. T. Lowe left Bel Alp and reached the col between the Fusshorn (3,628 m.) and Rothhorn by the Triest Glacier, and thence climbed (in 1½ hr.) the S.W. rock arête (a good climb) to the top of the Rothhorn, descending in 2½ hrs. by the next (W.) arête (easy) direct to the Oberaletsch Glacier. Both routes seem to be new. The Rothhorn is locally known as the Fusshorn, of which it is really the culminating point.*

* *Alpine Journal*, vol. xiii. p. 268.

greatest caution. Then, after a long strip of ledge, came a final series of chimneys, the first of great difficulty, distinctly overhanging and exposed, and the rock very rotten. The remainder of the way showed nothing remarkable, and the arête was struck at 1.55 p.m.

Starting again at 2.30, and following the arête northward, they reached the south peak at 3.10, and erected a cairn; two others had been built at important points on the ascent. The main peak was reached at 4.25 p.m. The descent, lasting from 4.45 to 9.15, was made to Mareson by the ordinary (E.) route. Total time from bivouac to Mareson, 16 $\frac{3}{4}$ hrs.; ascent on the rocks, 11 hrs., including rest 1 hr.

The ascent is recommended as highly interesting and consistently difficult, with at least two passages of exceptional difficulty. Both danger and difficulty must be largely increased by less favourable weather; the ascent was made after more than a fortnight of unbroken fine weather. It is necessary to emphasise the great danger on this N. face of falling stones, which fell at frequent intervals throughout the night and the day; the only safe (if not the only possible) line must keep as far south as practicable.

CAMPANILE DI VAL DI RODA (c. 2,770 m. = 9,090 ft.) BY THE W. FACE. *Sept. 5.*—Messrs. H. A. Beeching and P. A. L. Pryor, with M. Bettega and A. Tavernaro, climbed this peak by a new route up the west face, which presents so striking an appearance from S. Martino. They left the hôtel at 5.50 a.m., and reached a scree slope at the foot of the rocks at 7.30. Bearing to the right up easy rocks for 20 min., they traversed to the left into a short chimney, at the top of which they ascended, still to the left, into a second deep chimney in the centre of the face, easily identified by its black appearance. Above this a good place for a halt was found at 9.25, not far below a very conspicuous cave. From here to the gap the climb was one of continuous difficulty. A steep and rotten 'Kamin' of some 200 ft. was first ascended, taking over an hour, and the party was then forced to descend a short rib for some 60 ft., finally traversing into the main couloir directly below the Campanile (12.35). The first pitch in this was turned by climbing a wet and very difficult chimney immediately to the right of the couloir. The final pitch proved the hardest bit of work during the day, and was only conquered by most brilliant exertions on the part of the guides. The gap between the Campanile and Cima di Val di Roda was reached at 1.55 p.m., just over eight hours from S. Martino, including about one hour halts. Twenty minutes sufficed to reach the top of the Campanile, by the route described by Mr. Wood in 'Alpine Journal,' vol. xv. p. 368. Thence the party returned to the col, ascended the Cima,* and followed the ordinary route to S. Martino, arriving there at 5.35 p.m., 1 $\frac{1}{2}$ hr. from the top of the Cima.

Central Caucasus.

TSITELI. *August 2.*—Messrs. C. T. Dent and H. Woolley, with Kaspar Maurer and Simon Moor, started from their camp in the Sty-Digor

* For the route taken see Mr. Norman Neruda's account in *Alpine Journal*, vol. xvi. 523.

ALPINE NOTES.

FIRE AT CAPRILE.—On September 19 the village of Caprile, well known to most travellers in the Dolomites, was the scene of a disastrous fire, which destroyed the mediæval portion and the poorer quarter, leaving forty families homeless and a large number of the inhabitants destitute. The estimated loss caused by the fire is 200,000 lire, 80,000 of which falls upon very poor people, uninsured, who have not only lost their dwellings but the harvest, which was already gathered in. The need for help appears to be urgent. A relief committee has been formed. Its hon. president, Signor Paganini, a member of the Italian Parliament and Alpine Club, appeals for contributions, which may be sent direct to the Sindaco d'Alleghe, Provincia di Belluno, Italy, either by P.O. order or cheque, or will be received and forwarded by the Hon. Secretary of the Alpine Club, 23 Savile Row.

THE PIZ PLATTA.—For many years this peak (I know not why) had attracted me. I went up it on August 28, 1894, and repeated the ascent on August 18, 1895. On both occasions I had the good fortune to enjoy very fine views. In 1895, indeed, it was the very finest view I gained during that most wonderful summer, extending from M. Rosa, the Bietschhorn, and the Wetterhorn round through the Tödi, Rhätikon, Silvretta, Oetzthal, Ortler, and Bernina groups to the Rheinwaldhorn. It is rarely visited even by Swiss climbers, and seems to have been quite overlooked by English mountaineers. Yet it can be gained without any difficulty by way of Thäli, a great slope of stones, two small glaciers, and some easy rocks, in 4 hrs. from Cresta, in the Avers valley, on the S.W. The ascent is not more difficult, though rather more laborious, from Molins, on the Julier road.* But Cresta is the best starting-point, as it is over 1,600 ft. higher than Molins. This year the *char* road from Andeer, on the Splügen road, to Cresta has been at last completed, while next year a good new inn (thirty beds) at Cresta will replace the present modest Gasthaus Forcellina. The Septimer and Forcellina Passes afford very easy means of access to Cresta from the Maloggia. The Piz Platta is only 3,386 m. high (11,109 ft.), but occupies an isolated position which makes it a most splendid belvedere. A few days later in 1895 I ascended the Pizzo della Duana and the Pizzo Galleione, but the mountain panoramas thence are far inferior to that from Piz Platta, though, of course, the latter summit lacks the grand look down into the Val Bregaglia gained from the two others.

W. A. B. COOLIDGE.

THE FALL FROM THE ALTELS.—On August 17, 1782, a huge fragment of the glacier on the N.W. flank of the Altels broke loose, and did great damage to the Winteregg alp, killing four persons and sixty-five head of cattle.† This catastrophe was repeated, unfortunately on

* For the description of the two routes on this side see Herr Imhof's excellent *S. A. C. Itinerarium f. d. Albulagebiet*, 1893-5, pp. 171-4, 290.

† See the full description in a document communicated to the Valais papers by M. Maurice Lorétan, and reprinted in the *Bund* of October 11-12.

also kein Touristenberg.' The Klein Lohner is a long wedge-like mass of rock running north and south, with a nearly level summit ridge. At the north end lies the Bonder Grat and at the south the Bonder Krinden, two passes from Kandersteg to Adelboden; from each pass the cliffs of the Klein Lohner rise abruptly to a height of between 600 and 700 ft. The east face is very precipitous. The rocks of the west face are less steep and are divided into broad hollows with intervening buttresses; they dip outwards and are cumbered with loose stones, so that extreme caution is necessary in climbing them. On July 1, 1895, my brother and I, with Abraham Müller, made an attempt by Messrs. Stallard and Ormerod's route up the west face, but we were turned back, when half an hour from the ridge, by a high wind which dislodged loose stones. On July 3 Müller and I, with Samuel Ogi (of Kandersteg), succeeded in finding an easier and safer way to the summit. Leaving Kandersteg at 5 A.M., we reached the Allmen Grat in three hours. Traversing screes and rocks under the west face we rounded the buttress beyond the first hollow (Mr. Stallard's route), and found a second recess with a small couloir of winter snow, which we mounted as far as it went. We found the rocks easier than those in the other hollow, and gained the ridge without difficulty, going straight up from the couloir. The ridge was here composed of loosely wedged, overhanging slabs of rock, so rotten that we were obliged to descend several feet and traverse to the right (or south), over an awkward slope covered with débris, until we struck a small, steep rock couloir, which brought us again to the ridge, at a point whence the 'stone-man' was easily reached. Time from the top of the snow couloir: 55 minutes. A bottle contained notes of two previous ascents—Messrs. Stallard and Ormerod, with Abraham Müller and Johann Ogi, on August 6, 1890, and Herr Bernoulli, of Bern, with Jacob Reichen, of Kandersteg, on July 22, 1893. The second party made the ascent by the long ridge which strikes the east face at a right angle below the steep final cliffs—an ascent which, as seen from above, does not recommend itself.

HENRY CANDLER.

THE HOHSTOCK.—The Hohstock (3,175 m. = 10,417 ft.) is a rocky point on one of the outlying ridges of the Nesthorn. Any one who knows the Bel Alp will recollect the long series of craggy ridges, steep cliffs, and high small glaciers which hide the Nesthorn from view, and are in fact its outworks and bastions. The Hohstock lies between the Unterbachhorn and the Sparrhorn, and is a humpy broken arête, with a well-defined cone, and several steep couloirs leading down from the summit to the base of the cliffs.

The merits of the ridge were first seen by the Rev. Henry Wilson, last year,* and since then it has been often ascended; but the result of pursuing the route I am about to indicate is a most interesting scramble. I left the Bel Alp hôtel about ten o'clock on a hot morning, with Clemenz Ruppen, best and most cheerful of guides, and Mr. H. F. W. Tatham. An hour's sharp walking over steep grass slopes brought us into the Hohstock valley, with the steep cliffs of the Sparrhorn

* See the *Alpine Post*, 1894, pp. 318, 336, 416.

THE WASENHORN.—The 'Lepontine Guide' seems to give no account of the ascent of this mountain by the S.W. arête, the route usually taken from Berisal and equally convenient for a party starting from the Simplon Hospice. The col between the Wasenhorn and the Mäderhörner can be reached in an easy three hours from Berisal, either by the Wasen alp or by an inferior path on the right bank of the stream. From the col a short traverse is made on the S. face, the arête then regained, and the summit reached in another hour over very easy rocks, no rope being required by an experienced party. At Berisal this route is said to be the quickest as well the easiest way.

G. BROKE.

THE DENT BLANCHE FROM THE SCHÖNBÜHL GLACIER.—Every one knows how hard it is to describe a difficult route in such a fashion as to make it easy to identify the precise line taken. In order to help



THE DENT BLANCHE,

with Mr. Whitwell's route of 1874, marked by himself.

Alpine historians as well as climbers Mr. Whitwell has kindly marked on the photograph reproduced above his 1874 route up the Dent Blanche from the Schönbühl Glacier, which he described at length in these pages, vol. vii. pp. 427-431.

FROM MONTANA TO ZANFLEURON.—There are three mountain routes between these inns, viz. (1) Col des Audannes, (2) Col de la Saourie, (3) Col des Eaux Froides, all about 2,950 mètres.

On August 21, 1895, Mr. Frederick Corbett and Miss Mabel Corbett

expeditions to the chalets of Les Ravins. Then proceed either by the mule path towards Lenk as far as the pastures of Armillon, or in the alternative by a faint track further W. which climbs first shale slopes and afterwards grass slopes on the N. side of the stream descending from the col, and gradually diverges from the stream in a northwardly direction. In either case cross glacier-worn limestone rocks below the Glacier de Ténéhet to the col, which passes between the S.E. buttress of the Wildhorn and the Six des Eaux Froides. Thence keep under the rocks of the Wildhorn and join the two preceding routes on the ridge N.W. of Le Sexrouge. Time: about 10 hours. This pass in combination with the Rawyl Pass offers a convenient route from Zanfleuron to Iffigen and Lenk.

FREDERICK CORBETT.

THE ROTHSTOCK AGAIN.—My note at p. 522 of the August 'Alpine Journal' has brought several earlier ascents of this little peak to light. In July 1892 Messrs. Sydney Spencer, with Christian Jossi and Ulrich Kaufmann, and Gatty, with Aloys Zurbriggen and Basil Andenmatten, ascended it, having been beaten that day on the Eiger, and in August 1894 it was twice climbed by Mr. A. C. Benson. Doubtless it has been attained by other parties before mine, and I am glad that my note has helped to clear up the Alpine history of this striking little peak.

W. A. B. COOLIDGE.

THE BIRRENHORN BY THE S. FACE.—Messrs. George Wherry and F. Aston Binns, with Joseph Truffer, on August 12, 1894, made this good climb, which has probably not before been done by travellers, though it is said to be a hunter's way. Mr. Wherry repeated the ascent on August 14, 1895.

To climb the Birrenhorn (2,511 m.) by the S. face go from Kandersteg up the nearest and steepest grass slopes which lie to the E.N.E. of the Victoria Hôtel to a couloir which is found by following the highest shingle. Here it is well to rope in order to ascend the couloir to a chimney. Climb through this to a shelf above, and turning slightly to the W. continue straight up until a narrow horizontal shelf is reached running to the W.S.W. as far as some little pine trees; thence ascend by going up the face more to the E., until after a stiff scramble up 12 ft. of difficult rock (which may be avoided by a circuit) a cleft is found in which lies an enormous grass-covered fallen block. Beneath this you crawl through a 'Fenster,' and soon reach a narrow grass saddle with views into the two valleys (Kander and Oeschinen). The final climb is then before you. Cross the grass saddle, ascend the rocks or grass slopes beneath which the shepherd's path is seen. The rock arête above the highest grass has a cairn and pole on the summit, reached in $4\frac{1}{2}$ hrs. from Kandersteg. In descending the path towards the Oeschinen See the way down to the valley is difficult to find, especially if there be any mist.

The three-fingered rock (Drei Eidgenossen) will be seen opposite the couloir, which is the last but one before reaching a great grass promontory. After a considerable descent a traverse is made to the right where two iron stanchions guard an awkward place.

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ALPINE DISTRESS-SIGNAL

PAPER EMBODYING THE
REPORT OF A SUB-COMMITTEE OF THE ALPINE CLUB
READ BY MR. H. G. WILLINK AND APPROVED BY
A GENERAL MEETING OF THE CLUB
APRIL 3, 1894

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An ideal signal should conform to the following conditions, viz. :—

(a) It should be extremely simple, so that the sender cannot possibly go wrong in making it, nor the reader in understanding it.

(b) It should be unmistakable for anything but a signal of communication.

(c) It should be intelligible at great, no less than at small distances.

(d) It should be available by night as well as by day, and by means of sound as well as of sight.

(e) It should, so far as possible, be independent of atmospheric conditions of light and shade, and colour, and also of perspective.

(f) It should be capable of being easily made, and should require the minimum of constant attention or labour.

(g) It should be readily improvisable—*i.e.*, it must not of necessity require, though certainly it should not exclude, the use of special apparatus.

If, in addition, it leads up to or can be developed into an alphabetic or other extended code of communication between persons properly qualified, so much the better.

It was clear, at starting, that the above conditions absolutely excluded more than one class of signal which has for other purposes been found practicable. For instance, all signals depending solely upon *colour*, whether of lights or flags, &c., and also all *semaphore* signals, however useful as subsidiaries, cannot in the mountains be applicable under all circumstances. Colour entails apparatus; and it is doubtful whether a coloured lamp (unless burning a specially strong light) would be visible at any great distance at night, or the colour of a flag or other object be distinguishable from far off in a sunset glow, or in a blue haze, or against the light. The use of colour, moreover, as the essential distinction, is inconsistent with the use of the reflected rays of the sun, one of the best means of making signals; and it is difficult to imagine a correlative *audible* signal. The natural suggestion of a flag, to be hoisted and kept flying, besides being open to the objection that climbers are prone to hoist flags as indications of success, and to leave them flying for good (or until the next storm), was ruled out of court on the ground that it would have no parallel luminous or audible signal—a mere steady light being manifestly open to confusion. *Semaphores*, again, except when the arms are human (with or without flags in the hands), also require apparatus,

the signal best adapted to them, whether audible or visible, and whether distinguishable by light, colour, or motion. No hard and fast rules can therefore be laid down, the great merit of the system recommended being its infinite elasticity, inasmuch as almost any single phenomenon, except perhaps a sneeze or an avalanche, can be pressed into the service.

The following suggestions, however, may be found useful:—

(1) *Visual signals* (other than 'light signals').—In waving a flag or other object the sender should squarely face the objective, and should wave his 'dots' as high and wide as possible. Except at short distances, anything so small as a pocket-handkerchief fastened to an axe will be of little use; a shirt or coat would be better. An object hoisted and lowered will make a good dot, but in the case of a flag regard must be had to the wind, with a view to the surface being fully displayed to the receiver. A large flat thing (like a hut door) alternately shown and laid down, or presented faceways and edgeways, might perhaps serve. Where apparatus is available, a collapsing drum, or a kind of Venetian shutter, have been found useful contrivances.

In all cases the object used should contrast with the background as seen by the receiver. This background may be ascertained by the sender if he looks back along a stick carefully pointed at the objective. An opaque object, however pale in colour, will probably show dark, and will certainly not show light, against a light sky or against snow in sun.

(2) *Light signals*.—In signalling by flashes the beam of light, whether from lamp or mirror, should be kept *steadily* directed on the objective, and the dots should be caused by the removal and interposition of some sufficient screen,¹ *e.g.*, the human body. Any two rather pointed objects will serve as sights. They should be set up firmly, and at a convenient height, not less than two feet apart, their tips being in a true line bearing on the objective, and the hind sight being the smaller of the two; and the beam should be kept so directed that the shadow of the tip of the hind sight remains exactly on the tip of the fore sight. They should be adjusted with the utmost possible accuracy, as a slight error is multiplied by divergence, and it is important that they should be so fixed as not to be liable to displacement, whether by melting snow, or a porter wandering in the dark, or any other

¹ This is the principle of the heliostat. Of course, if a heliograph is available, it will be used in the ordinary way.

animal. If there is any prospect of night signalling being necessary, the signaller should not forget that the sights can be much more easily adjusted by day than in failing light. He will therefore beforehand, when circumstances admit (*e.g.*, before leaving a camp to which he intends to return), establish his sights in bearing upon the point, if any, to which an appeal for help may, in case of need, be made. At suitable distances a lamp may be waved, like a flag.

If working by reflected sunlight, constant attention will be found necessary to keep the mirror beam truly directed as the sun moves; if the party comprises two or more persons, one man should devote himself entirely to this. The mirror need not be more than three or four inches in diameter. It should be held very steady, resting on an axe-head or other firm support.

When the sun is at all behind the sender, two mirrors must be used, one facing the sun, the other facing the objective, as before directed; but the inclination of the former mirror alone need be varied to suit the sun, the latter mirror being used to pass on along the sight-tips the beam reflected into it from the former mirror. Care must be taken to keep the *centres* of both mirrors as nearly as possible in their original positions.

(3) With regard to signals by *sound*, perhaps no more can be said than that they will not always in themselves tell the receiver the exact position of the sender. Every effort should therefore be made to supplement them by visual signals.

In all signals regularity of interval is of the utmost importance, both as regards intervals between dots, and as regards the 'minute intervals' between the series.

As to a subsidiary or more extended system of signalling, the sub-committee did not, as already stated, make any express recommendation on this point. But where parties desire to communicate more fully, the Morse code (a compound of short and long signs, or *dots* and *dashes*, the dash being three times as long as the dot¹) is, it is submitted much the best, and for the following reasons, *viz.* :—

(a) It can be expressed by the same means as the distress-signal.

¹ In using the Morse code the dots and dashes composing any letter must be given *continuously*, a pause being made between letters, and each word being answered by a single dash. Full instructions will be found in the *Manual of Army Signalling*, which can be bought at Stanford's, price 1s.

APPENDIX.

Report of the Sub-Committee appointed to consider the Question of Signalling on the Mountains.

THE sub-committee have carefully considered the question submitted to them for consideration, and beg to report as follows:—

In their opinion it is desirable—

I. That a single signal, implying distress and want of help, should be approved by the Alpine Club and recommended for adoption generally in all other Alpine and mountaineering clubs or associations.

II. That this signal should be of the simplest character possible, not liable to be mistaken for any other, and that it be suitable for use during the day, night, or in fog.

III. That in their opinion the form of communication best adapted for the purpose is an intermittent signal recurring, or interrupted, at regular intervals of ten seconds—*i.e.*, repeated six times in the minute—during alternate minutes, any means whatever being used to attract attention in the first instance, if necessary.

IV. That the 'answer' (if any) be a similar signal, but at twenty-seconds' interval—*i.e.*, three times a minute.

They submit that the advantages of this form of communication lie in its wide applicability, any method being permissible by which intermittent signals can be made. For instance (without entering into minute details), such signals may be made (*a*) during the day by the movement of any suitable article—such as a flag, or an extemporised flag—or by the alternate exposure and concealment of any conspicuous object, or of a flash of reflected sunlight; (*b*) at night by the similar movement, or the concealment and exposure, of a light; and (*c*) at any time, under favourable circumstances, by the employment of sound on the same principle.

The sub-committee have considered the advisability of employing a different signal to imply safety, or 'all well,' and they are unan-

mously of opinion that this is unnecessary, and would tend to confusion.

The sub-committee are of opinion that if a general consensus of opinion in favour of this proposal is obtained from other Alpine clubs, endeavours should be made to insure its wide adoption, and that all hotels in mountain districts and all huts should be provided with a description of the distress-signal and hints as to the various methods in which it may be employed.

The sub-committee desire to point out that the signal recommended has the further advantage that it may be extended to almost any degree by the employment of the Morse code, without leading to any confusion or possibility of mistake.

The sub-committee further recommend that during the ensuing session an evening should be set apart for the reading of papers on the subject, and a discussion at a general meeting of the Club.

(Signed) { C. T. DENT.
H. G. WILLINK.
FELIX O. SCHUSTER.
E. D. LAW.

To the President and Committee of the Alpine Club.
January 12, 1894.

